UNIVERSITAT DE VALÈNCIA
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DEVELOPMENT AND APPLICATION OF BAYESIAN DYNAMIC COMPARTMENT MODELLING TO STUDY LABOUR (IN)STABILITY IN SPAIN.

Author:

Juan Antonio Carbonell Asíns

Directors:

Prof. Carles X. Simó Noguera

Prof. Mª Purificación Galindo Villardon

JUNE 2022

Mr **Carles X. Simó Noguera**, Professor in the Dpt. of Sociology and Social Anthropology of the Universitat de València

Ms **María Purificación Galindo Villardón**, Professor in the Dpt. of Statistics of the University of Salamanca

CERTIFICATE:

That the present report, entitled "**DEVELOPMENT AND APPLICATION OF BAYESIAN DYNAMIC COMPARTMENT MODELLING TO STUDY LABOUR (IN)STABILITY IN SPAIN**", corresponds to the work carried out under his direction by Mr. **Carles X. Simó Noguera** and Ms. **María Purificación Galindo Villardón**, for its presentation as a Doctoral Thesis in the Doctoral Program in Social Sciences of the Universitat de València.

And for the record, the present certificate is signed in Valencia, to 8 of June of 2022.

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CARLES XAVIER|SIMO|NOGUERA

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Doctoral Program in Social Science

PHD THESIS

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Defended in FACULTY OF SOCIAL SCIENCE

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Resum:

Desenvolupament i aplicació de la modelització compartimental dinàmica bayesiana per estudiar la (in)estabilitat laboral a Espanya

Aquesta és una tesi metodològica en la qual ens centrem en el mercat laboral; no obstant això, els mètodes ací desenvolupats també podrien aplicar-se a altres àrees de les Ciències Socials permetent als investigadors/investigadores ampliar el coneixement en abordar les preguntes d'investigació des d'un punt de vista diferent.

En aquest context, la (in)estabilitat laboral podria entendre's com la velocitat de transició de l'ocupació a la no ocupació i viceversa. Si la velocitat és alta, la inestabilitat també és alta; per contra, si la velocitat de transició és baixa, hi haurà una baixa inestabilitat. L'objectiu principal d'aquesta tesi és desenvolupar un nou marc metodològic per a l'estudi de la (in)estabilitat laboral que se centre en la velocitat de transició d'un estat a un altre.

La (in)estabilitat s'estudiarà des de dues perspectives. En primer lloc, com a transicions de l'ocupació a la no-ocupació i viceversa en un model de dos compartiments. Estudiarem les cohorts d'entrada al mercat laboral, quinquenalmente, de 1970 a 1990 i les seguirem fins al 31/12/2013, així com comparant per sexe. En segon lloc, s'utilitzarà un model de tres compartiments: individus amb contracte fix, temporal i no-ocupats/as. Ací, com a conseqüència de les limitacions de la mostra, els individus seran seguits anualment de 1991 a 2002 amb un seguiment fix de deu anys i els resultats també es presentaran per sexe.

Les conclusions d'aplicar models de compartiments dinàmics per a estudiar el mercat laboral de dones i homes va en línia amb el que altres autors ja han observat: la presència d'una forta segregació laboral de gènere. Encara que assenyalem que la bretxa en la velocitat de transició entre dones i homes a la no-ocupació s'està reduint, els patrons de (in)estabilitat difereixen substancialment entre ells i elles.

Paraules clau: estadística bayesiana, models compartimentals, trajectories laborals.

Resumen:

Desarrollo y aplicación de modelos compartimentales dinámicos bayesianos para el estudio de la (in)estabilidad laboral en España

Esta es una tesis metodológica en la que nos centramos en el mercado laboral; sin embargo, los métodos aquí desarrollados también podrían aplicarse a otras áreas de las Ciencias Sociales permitiendo a los/las investigadores/investigadoras ampliar el conocimiento al abordar las preguntas de investigación desde un punto de vista diferente.

En este contexto, la (in)estabilidad laboral podría entenderse como la velocidad de transición del empleo al no empleo y viceversa. Si la velocidad es alta, la inestabilidad también es alta; por el contrario, si la velocidad de transición es baja, habrá una baja inestabilidad. El objetivo principal de esta tesis es desarrollar un nuevo marco metodológico para el estudio de la (in)estabilidad laboral que se centre en la velocidad de transición de un estado a otro.

La (in)estabilidad se estudiará desde dos perspectivas. En primer lugar, como transiciones del empleo al no-empleo y viceversa en un modelo de dos compartimentos. Estudiaremos las cohortes de entrada al mercado laboral, quinquenalmente, de 1970 a 1990 y las seguiremos hasta el 31/12/2013, así como comparando por sexo. En segundo lugar, se utilizará un modelo de tres compartimentos: individuos con contrato fijo, temporal y no-ocupados/as. Aquí, debido a las limitaciones de la muestra, los individuos serán seguidos anualmente de 1991 a 2002 con un seguimiento fijo de diez años y los resultados también se presentarán por sexo.

Las conclusiones de aplicar modelos de compartimentos dinámicos para estudiar el mercado laboral de mujeres y hombres van en línea con lo que otros autores ya han observado: la presencia de una fuerte segregación laboral de género. Aunque señalamos que la brecha en la velocidad de transición entre mujeres y hombres al no empleo se está reduciendo, los patrones de (in)estabilidad difieren sustancialmente entre ellos.

Palabras clave: estadística bayesiana, modelos compartimentales, trayectorias laborales

Abstract:

Development and application of Bayesian dynamic compartment modelling to study labour (in)stability in Spain

This is a methodological thesis in which we focus on labour market; however, the methods here developed could also be applied to other areas of Social Science enabling researchers broadening knowledge by tackling research questions from a different point of view.

In this context, Labour (in)stability could be operatized as transition speed from employment to non-employment and vice versa. If speed is high, instability is also high; on the contrary, if transition speed is low for a given set of individuals, these have low instability. This methodology might enable researchers identify new patterns in the study of labour precariousness that have yet not described. The primary aim of this thesis is to develop a novel methodological framework for the study of labour (in)stability which focuses on transition speed from one state to another.

The data is an anonymized sample of one million people who were enrolled in Social Security in a specific year. Using this source, (In)stability will be studied from two perspectives. Firstly, as transitions from employment to non-employment and vice-versa in a two-compartment model. We will study market labour entrance cohorts, quinquennially, from 1970 to 1990 and we will be following them until 31/12/2013 as well as comparing by sex. Secondly transitions between fixed-time, permanent workers and non-employment in a three-compartment model. Here, due to sample limitations, individuals will be followed annually from 1991 to 2002 with a fixed follow-up of ten years and results will also be presented by sex.

The conclusions of applying dynamic compartment models to study labour market for females and males goes in line to what other authors have already observed: the presence of strong gender labour segregation. Although we point out that the gap in transition speed between females and males to non-employment is narrowing, (in)stability patterns differ substantially between them.

Keywords: Bayesian statistics, compartment models, labour trajectories

Justification

In sociology, complexity is a particularly important topic which has broadly discussed and requires increasing levels of specialization and constant dialogue between researchers of different disciplines.

After obtaining a degree in Sociology I started to focus on statistics by enrolling into two postgraduate programmes: biostatistics and advanced multivariate data analysis. As a result, I was able to learn some statistical techniques that could be useful in Social Science but that I could not find any literature of their application even though they were well-known in other discipline. Complexity of the study of social life requires de requires a transdisciplinary approach and this thesis may be seen an example of this because the techniques developed here could not have been possible without the dialogue between sociologists, mathematicians, statisticians, and agricultural scientists.

The background of this thesis is (in)stability and labour trajectories. This is not a new topic and has been studied using well-stablished methods such as those that focus on clustering similar labour trajectories and then studying which variables affect having a given trajectory or using multistate modelling to understand factors affecting transition from one labour state into another. However, to our knowledge, none of them have measured labour (in)stability as the speed of transition from one state to other. The main novelty of the proposed methods is beyond this labour (in)stability or labour trajectories but the possibility to apply it to any research in which the interest is to describe transition speed between states.

United Nations Sustainable Development Goals

This thesis has taken into account Sustainable Development Goals (SDGs) proposed by United Nations in 2015 to end poverty, project the planet, and ensure that by 2030 enjoy peace and prosperity.

Three are the goals that this thesis contributes to make them visible. Firstly, Goal number 5 (Gender Equality). Ending all discrimination against women is required for a sustainable future and our results work in that direction. We found gender differences in labour (in)stability and, even though this gap is gradually decreasing, there is still much work to do. Following this, Goal number 8 (Decent Work and Economic Growth) emphasises on labour force and economy. Our results show that Spanish economy is very sensitive to macro-economic shocks and is during those periods when we observe a strong increase in labour instability with high speed in job loss. Finally, Goal number 10 (Reduced Inequalities) is the main justification of this thesis. We aim to unveil gender inequality in labour stability which may help policy makers take appropriate decisions to improve labour regulations.

In conclusion this thesis promotes SDGs from three interconnected goals: Gender Equality, Decent Work and Economic Growth and Reduced Inequalities which may help reduce inequality and promote prosperity.

Dedicated to:

A mis directores:

> *Puri, contigo inicié mi formación en estadística y todavía se impresionan cuando les enseño un HJ-Biplot.*
>
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> *Desde que acabé la carrera varias personas me ofrecieron hacer la tesis, la respuesta siempre fue la misma: "No, la tesis la hago con Carles y Puri".*

A Neus, contigo me embarqué en esta y otras grandes aventuras. Somos familia.

A Martina, estancado con la distribución Beta durante días y tardaste veinte minutos en darme la solución. Juntos hemos sido no paramétricamente imparables. I'll be your mirror.

A mis amigos y amigas desperdigadas por Mataró, Palma, Burgos, Luanco, Vecindario entre otros lugares. Fisicamente nos separa una gran distancia per como ya dijo uno de nosotros: "Es que hablo más con vosotros que con mis amigos de aquí".

A Guillermo y Joan, en el colegio nos hicimos amigos y espero que lo sigamos siendo hasta el final de nuestros días.

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> *No puede haber orden en los apellidos, Macchiavelli-Girón o Girón-Machiavelli, no podría haber caido en mejor sitio para hacer la estancia. La hospitalidad recibida no tiene parangon.*
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>
> *Raúl, contigo aprendí dos cosas: estadística y que en Europa no tenemos ni idea de café. Siempre recordaré las discusiones sobre estadística a las siete de la tarde sentados en el comedor.*
>
> *Al mango, el verdadero motivo de mi estancia en Puerto Rico.*
>
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A mis padres y mi hermana, las constantes entre las variables.

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Resum ampliat segons la normativa de les tesis en menció internacional del Reial Decret de 28 de gener, pel qual es regulen els ens enyaments oficials de doctorat. (RD 99/2011: Article 15)

Desenvolupament i aplicació del modelatge de compartimental dinàmic bayesià per estudiar el treball (in)estabilitat a Espanya

Introducció

Les ciències socials són disciplines intel·lectuals que estudien els individus com un ésser social a través del mètode científic. Se centren en ells com a membres de la societat i en els grups i societats en els quals pertanyen, i això és el que distingeix les ciències socials de les ciències físiques i biològiques. En sociologia, la complexitat és un tema particularment important que ha estat àmpliament debatut per estructuralistes com Ferdinand de Saussure (1857 – 1913) o Michel Foucault (1926 – 1984) entre d'altres. Els sistemes socials tenen una naturalesa oberta i dinàmica en la qual es produeixen interrelacions i nosaltres, com a científics socials, intentem revelar. La complexitat de l'estudi de la vida social requereix, com en molts àmbits, un enfocament multidisciplinari des de la planificació i el disseny de les primeres reunions de recerca fins a l'escriptura de les conclusions. Tanmateix, això no sempre és cert quan l'enfocament metodològic és quantitatiu. Aquí, la major part del temps, un individu o grup d'individus -normalment de la mateixa disciplina- també s'encarrega de les anàlisis estadístiques. Malgrat el seu interès i sensibilitat, mentre discuteixen l'enfocament estadístic, tots els participants comparteixen el mateix llenguatge estadístic i una formació similar que suposa no tindre en compte altres enfocaments. Per exemple, el científic social podria utilitzar l'anàlisi multinivell per explicar l'estructura de dades jeràrquica. No obstant això, aquesta tècnica ja es va establir durant molt de temps en la literatura estadística en el context del modelatge d'efectes aleatoris. Aquesta tesi es pot veure com un exemple de transdisciplinaritat en el context de la metodologia, ja que les tècniques desenvolupades aquí no podrien haver estat possibles sense el diàleg entre sociòlegs, matemàtics, estadístics inclús científics agrícoles.

Suposem que el treball en (in)estabilitat podria ser operatitzat com una velocitat de transició de l'ocupació a la no-ocupació i viceversa. Si la velocitat és alta, la inestabilitat també és alta; al contrari, si la velocitat de transició és baixa per a un determinat conjunt d'individus, aquests tenen una baixa estabilitat. Alguns autors han estudiat aquest fenomen utilitzant altres mètodes ben coneguts que es concentren en agrupar trajectòries laborals similars i després estudiar quines variables afecten una trajectòria donada (Verd et al., 2019), altres utilitzen el modelatge multiestat per entendre els factors que afecten a la transició d'un estat laboral a un altre (Dudel, 2018). No obstant això, segons el nostre coneixement, cap d'ells ha mesurat la (in)estabilitat com la velocitat de transició d'un estat a un altre. Aquesta metodologia podria permetre als investigadors identificar nous patrons en l'estudi de la precarietat laboral que encara no s'han descrit.

L'objectiu principal d'aquesta tesi és desenvolupar un nou marc metodològic per a l'estudi de la (in)estabilitat laboral que se centra en la transició d'un estat a un altre. Encara que sempre se centrarà en el mercat laboral, és molt clar que els mètodes descrits aquí podrien aplicar-se a altres àmbits de la ciència social.

Les dades utilitzades per a aquesta investigació es coneixen com mostres contínues de Trajectòries de Treball (MTAS, 2017) que és el resultat de la col·laboració de la Seguretat Social, l'Institut Nacional d'Estadística (INE) i l'Agència Estatal d'Administració Tributària (AEAT) a Espanya. Les dades són un extracte anònim d'un milió de persones inscrites en Seguretat Social en un any específic. Utilitzant aquesta font, la (in)estabilitat s'estudiarà des de dues perspectives. En primer lloc, com a transició de l'ocupació a la no-ocupació i viceversa en un model de dos components. Estudiarem les cohorts d'accés al mercat laboral, quinquennalment, de 1970 a 1990 i les seguirem fins a 31/12/2013, a més de comparar-les per sexe. En segon lloc, les transicions entre els contractat fixos, permanents i la no-ocupats en un model de tres components. Aquí, a causa de les limitacions de la mostra, els individus seran seguits anualment de 1991 a 2002 amb un seguiment fix de deu anys i els resultats també seran presentats pel sexe.

Creiem que la velocitat de transició variarà segons diversos factors. En primer lloc, la inestabilitat podria ser major en les primeres etapes de la vida laboral a causa de la menor experiència de les persones i, per tant, la pèrdua i/o el canvi de llocs de treball amb més rapidesa. En segon lloc, els patrons de velocitat de transició podrien ser diferents entre homes i dones a causa de la divisió laboral tradicional; no obstant això, hipotèticament, les cohorts més joves podrien afeblir el model anomenat “male breadwinner”, i que les diferències de gènere siguin més baixes en comparació amb les més antigues. D’altra banda, aquestes diferències podrien ser més visibles durant la vida mitjana, perquè les dones poden desplaçar-se a treballs domèstics no remunerats i de cura causant una major velocitat de transició a la no ocupació. Finalment, se sap que les fluctuacions macroeconòmiques afecten el mercat laboral i aquí esperem que la gran crisi econòmica iniciada en 2008 tingui un efecte en les velocitats de transició.

Finalment, s'avaluarà el vincle entre el temps total esperat en l'ocupació o l'activitat i la (in)estabilitat. Per a fer-ho, s'investigaran els patrons en l'esperança de vida laboral per edats i en l'esperança de vida laboral en ocupació per edats per a les cohorts que entren en el mercat laboral de 1976 a 2014. El càlcul de l'esperança de vida i l'esperança de vida laboral requereix taxes d’activitat i taxes d'ocupació. Lamentablement, aquestes dades no estan disponibles obertament, per la qual cosa es va requerir una petició especial a l'Institut Nacional d'Estadística per a rebre aquesta informació. Per tant, les dades utilitzades per a aquest objectiu no són MCVL com en la resta de l’estudi. Hipotèticament, les cohorts en les quals hi ha una alta velocitat de transició cap a la no ocupació tindran poc temps esperat en l'activitat o l'ocupació. A més, aquestes cohorts amb un perfil més estable poden mostrar un descens més homogeni de l'esperança de vida laboral i laboral a mesura que s'aproxima la jubilació. Això és, no es podrien identificar canvis bruscos en l'esperança en comparació amb aquelles cohorts en les quals es pot trobar una alta inestabilitat.

El marc teòric d'aquesta tesi es basa en un enfocament de curs de vida que se centra en com les forces socials afecten els individus en la seva contínua transformació i desenvolupament al llarg del temps (Dannefer, 1984; Glen & Elder, 1994). En aquest context, els cursos de vida estan integrats en la interacció de vides humanes i temps històrics, el moment de les vides, vides vinculades o interdependents, i l'agència humana en la presa d'elecció (Glen & Elder., 1994). La primera d'elles es refereix a les diferències a les quals s'enfronten els individus depenent de l'any de naixement, ja que estan exposats a diferents moments històrics. El moment de la vida es refereix al significat social de l'edat. Els autors descriuen el temps social com "la incidència, la durada i la seqüència de rols, i les expectatives i creences pertinents basades en l'edat" i utilitzen el matrimoni com un exemple a causa de les seves normes demogràfiques i d'edat. Les vides vinculades es refereixen a la independència de les vides, ja que els individus estan implicats en el canvi de les relacions socials durant la seva vida. Finalment, l'agència humana que és un concepte clau en les obres de Thomas i Znaniecki (és a dir, *El camperol polonès a Europa i Amèrica,* publicat el 1918) que es descriu com les opcions individuals que donen forma als seus cursos de vida (Clausen, 1968). Una perspectiva del curs de vida permet centrar-se en com els individus interactuen amb el mercat laboral amb el temps.

Metodologia

La font de dades de tots els models compartimentals és la mostra contínua de trajectòries de mà d'obra (MCVL) que és el resultat de la col·laboració de la Seguretat Social, l'Institut Nacional d'Estadística (INE) i l'Agència Estatal d'Administració Tributària (AEAT) a Espanya. Les dades són un extracte anònim d'un milió de persones inscrites en Seguretat Social en un any específic. Els registres per a individus inclouen informació del Registre Municipal i el resum anual d'ingressos i retencions a causa de l'IRPF del Model 190 de l'AEAT.

Tal com es mostra en la metodologia del MCVL (MTAS, 2017), les dades es van seleccionar a l'atzar entre totes aquelles persones que estaven afiliades o que eren pensionistes el 2013. A més, s'ofereixen dades històriques per als milions de persones incloses i, quan sigui possible, de la seva relació amb la Seguretat Social. Hi ha dos criteris existents per a ser elegibles a la mostra. En primer lloc, és obligatori tenir un document d'identificació individual (NIE o NIF) perquè el mostreig es basa en una selecció aleatòria de tots els NIEs o NIF. El mostreig aleatori simple s'utilitza per seleccionar el 4% de tots els nombres possibles. En segon lloc, les persones seleccionades han de formar part de la població de referència en l'any considerat (2013 per a aquest projecte). Les persones que encaixen en un dels casos següents estan excloses de MCVL:

. Persones registrades en la Seguretat Social només per rebre assistència sanitària.

. Beneficiàries de pensions de benestar.

. Aquelles dins dels sistemes de seguretat social diferents de la seguretat social.

. Treballadors i treballadores que no reben prestacions de desocupació.

Destinataris de la "Ingrés Actiu d'Inserció", que és un benefici de desocupació estatal de més de 451 euros al mes.

A més, ha de tenir-se en compte que les dades històriques no són prou fiables per a aquelles persones que es van incorporar al mercat laboral abans de 1966, ja que la metodologia indica que els seus registres poden estar absents. Aquesta és la raó principal per la qual, encara que tenim informació sobre les persones nascudes fins i tot a principis del segle XX, només les persones nascudes en 1950 i no abans són elegibles.

Amb aquestes dades es van analitzar dos models com a proxy del treball amb (in)estabilitat: ocupació contra no ocupació i *insiders* (aquells amb contracte laboral permanent) contra *outsiders* (aquells sense contracte laboral permanent). Per al primer model, estudiem a les persones que van entrar en el mercat laboral -cohorts del mercat laboral- quinquennalment de 1970 a 1990. Per a cada cohort, hem comptat quantes persones ocupaven i no ocupaven treballadors cada mes. Visualment tenim tantes files com mesos estudiades (des de l'entrada fins a gener de 2014) i dues columnes que representen el nombre d'empleats i el nombre d'aturats. Finalment, aquests valors es van dividir per un nombre total de persones que van entrar en el mercat laboral en la data d'entrada. Com que cada cohort tenia un nombre total diferent de participants, vam decidir utilitzar proporcions en lloc de valors absoluts per tal de poder comparar resultats entre cohorts. Analíticament per al model 2 tenim tres columnes (temporal, permanent i altres) en lloc de dues. El mercat laboral espanyol està altament dualitzat (i.e. el que anomenem *insiders-outsiders*); per a reflectir això, entenem que les persones amb contractes permanents tenen una posició més estable en el mercat laboral i podrien considerar-se com a persones de dins (o *insiders*), mentre que la resta podria classificar-se com a persones de fora i menys protegides (*outsiders*). No obstant això, en l'estudi d'aquest segon model, analitzem l'entrada a les cohorts d'entrada en el mercat laboral de 1991 a 2003 i les seguim durant 10 anys. Aquesta selecció es basava en la limitació del MCVL, que descriu que la informació relativa al "tipus de contracte" no estava disponible abans de 1991 perquè la seva declaració sobre contractes de treball no era obligatòria (MTAS, 2017). D'altra banda, hem decidit seguir a aquestes cohorts una quantitat fixa de temps -10 anys- per a poder comparar-les.

Es van utilitzar cinc programaris en l'anàlisi, dos d'ells ja s'han esmentat: SPSS (Corp., 2016) i R (R Core Team, 2019). Matlab (MATLAB, 2019) també es va utilitzar per resoldre equacions lineals ordinàries diferencials en el marc dels models de compartimentals. WinBUGS (Lunn et al., 2000) es va utilitzar per aproximar la distribució posterior dels paràmetres per al model compartimental d'empleat/no autònom. Finalment, JAGS (Plummer . altres, 2003) va ser utilitzat en el modelatge bayesià de l'interior contra l'exterior. La raó per utilitzar aquest últim programari va ser que és més fàcil d'implementar dins R, especialment en el context de models complexos. JAGS podria haver estat utilitzat per a tota aquesta tesi, però al principi de les anàlisis l'experiència amb aquest programari era insuficient.

En aquest treball proporcionarem dos enfocaments metodològics per al treball (in)estabilitat. El primer enfocament que proposem és un model de compartimental bayesià d'enfocament no dinàmic per als treballadors per compte d'altri i els no treballadors. D'altra banda, els forasters i els interns del mercat laboral també seran bayesians no dinàmics. Això ajudarà els lectors a entendre el modelatge compartimental i servirà com a introducció a un modelatge dinàmic més complex. Finalment, aquesta tesi comptarà amb un model dinàmic compartimental bayesià d'empleats contra no empleats. Lamentablement, no podem oferir un enfocament dinàmic per als *outsiders* enfront dels *insiders* a causa de les limitacions del seguiment en la nostra mostra. A més, l'estratificació de gènere es farà per mostrar diferències en la volatilitat entre mascles i femelles, tant en el modelatge dinàmic com no dinàmic del compartiment bayesià.

Els models compartimentals són eines matemàtiques que s'han utilitzat principalment en el disseny de malalties infeccioses. Aquests models matemàtics expliquen com es comportarà un objecte o un sistema d'objectes (Keeling). Rohani, 2007). En epidemiologia, aquests models serveixen per predir la dinàmica d'una epidèmia basada en el coneixement sobre ella. En formular un model, cal tenir en compte tres aspectes relacionats que competeixen entre si: precisió, flexibilitat i transparència. La precisió es refereix a la possibilitat de reproduir les dades observades i la seva capacitat de predicció. Encara que sempre és desitjable tenir una alta precisió, hi ha inconvenients en fer-ho, ja que l'augment de la precisió normalment implica una creixent complexitat. Aquesta complexitat deriva del procés d'incloure nous factors, és a dir, paràmetres, en el model matemàtic. Per exemple, augmentar el nombre de components que influeixen en el mercat laboral. Un dels problemes que sorgeixen de tenir una gran complexitat en un model és l'alta potència computacional necessària per estimar tots els paràmetres implicats. A més, quan tenim models excessivament complexos, podem caure en la falta de transparència, és a dir, la capacitat d'entendre numèricament o analíticament com estan interrelacionats els components del model. Normalment, reduir la complexitat augmenta la flexibilitat, però, d'altra banda, es perd precisió. Finalment, la flexibilitat d'un model es refereix a la facilitat amb què el model s'adapta a una nova situació. Aquesta flexibilitat és important en els models que intenten explicar les dinàmiques que estan canviant molt, com la desocupació d'una població.

Encara que aquests models s'han dut a terme principalment en la disciplina de l'epidemiologia, cal assenyalar que poden ser aplicables a altres casos. L'aplicació d'aquest tipus de modelització a altres camps de la ciència és una de les principals atraccions d'aquest treball. Demostrarem com els models compartimentals poden resultar útils per a estudiar les trajectòries del mercat laboral i, més concretament, la volatilitat laboral a Espanya. Val la pena esmentar que no és la primera vegada que aquests models s'apliquen a disciplines fora de l'epidemiologia. Aquest és el cas de Santonja et al., (2008), qui, en el context de la ciència política, va estudiar la pressió de les ideologies radicals en la societat espanyola. No obstant això, no hi ha proves que s'hagin utilitzat models compartimentals en l'estudi de la dinàmica del mercat laboral. D'altra banda, no hem pogut trobar cap article en que s'apliquessin models de compartiment bayesià a la sociologia. Aquesta constatació és especialment rellevant, ja que l'aplicació d'aquesta nova metodologia podria revelar noves dinàmiques en l'estudi del mercat laboral.

Una manera d'estimar els paràmetres és a través de l'anomenat mètode de màxima versemblança (ML). El seu objectiu és maximitzar la probabilitat d'observar les dades donat un model de predicció. Per exemple, podem tenir un model que prediu que la proporció d'empleats ha de ser 0,4 però les nostres dades indiquen que aquesta proporció és 0,8. Tindríem que la probabilitat d'observar 0,8 és molt baixa si s'espera que sigui 0,4. Tanmateix, la probabilitat d'observar 0,8 si el valor esperat és 0,85 és més alt (més probable) que en el cas anterior. Com que sempre treballarem amb proporcions, volíem demostrar amb l'exemple anterior que el millor valor de la proporció serà el que maximitzi la probabilitat del valor observat en les dades.

La funció de probabilitat es defineix per a una mostra aleatòria (iid) $X_1, \dots, X_n$ d'una població amb funció de distribució$f(x|\theta_1, \dots, \theta_k)$ com:

$$L(\theta_1, \dots, \theta_k | x_1, \dots, x_n) = \prod_{i=1}^{n} f(x_i | \theta_1, \dots, \theta_k). \qquad (1.0)$$

De vegades es prefereix treballar amb el logaritme de la funció de probabilitat de l'Equació 1.0: $log(L(\theta|X)$, perquè es prefereixen les derivades de sumes en lloc de les multiplicacions (Casella & Berger, 1990). En condicions molt generals l'estimació ML és consistent i asimptòticament eficient, de manera que convergeix en probabilitat al paràmetre que s'estima i és capaç d'aconseguir el límit més baix de la variància (Owen, 2008).

Per aplicar el mètode ML, primer hem d'assumir una distribució de les nostres dades. Com s'ha descrit abans, en cada mes tenim la proporció de persones en una certa situació (treballadors, aturats, temps fix, etc.), així que la distribució hauria de ser-ne una amb valors vinculats entre zero i u. Dues distribucions que satisfan aquest requisit: la distribució beta o la distribució binomial. Estem més interessats en la primera perquè, en primer lloc, la població total varia en cada cohort i, en segon lloc, perquè el paràmetre extra de la distribució beta permet una millor estimació de la variància.

En la inferència estadística, es poden trobar dos enfocaments o perspectives clarament diferents: el freqüentista i el bayesià. Per il·lustrar la diferència entre aquests dos mètodes, diguem que el nostre model té dos paràmetres per estimar: a i b. Després de l'estimació via ML, també tindrem els seus respectius intervals de confiança. És molt comú caure en l'error de considerar aquestes estimacions per tenir una probabilitat que el 95% estigui dins de l'interval, però això no és correcte. En la teoria clàssica (freqüentista) els paràmetres a i b es consideren fixos i, normalment, de quantitats desconegudes, de manera que no té sentit assignar probabilitats als paràmetres. La confiança del 95% s'aplica a l'interval no al paràmetre, per la qual cosa és correcte dir que hi ha un 95% de probabilitat que l'interval contingui el valor real del paràmetre. No obstant això, en les estadístiques bayesianes els paràmetres a i b del nostre model es consideren aleatoris i expressem la seva incertesa abans de considerar les dades en termes de probabilitat a priori assignant una distribució prèvia a aquests paràmetres. Utilitzem el teorema de Bayes per obtenir la distribució posterior de a i b mitjançant una distribució prèvia dels paràmetres i la probabilitat de les dades. No obstant això, aquestes dues perspectives no han estat exemptes de conflictes i sempre ha existit una certa rivalitat. Els freqüentistes critiquen alguns aspectes de la inferència bayesiana, principalment la subjectivitat implicada en la distribució anterior. És la decisió de l'investigador utilitzar el seu coneixement per assignar una distribució prèvia als paràmetres i això ha estat criticat a causa de l'arbitrarietat que implica fer-ho. Una manera de superar aquesta limitació és utilitzar, el que s'anomenen priors no informatives. No obstant això, la pràctica actual és utilitzar priors imprecisos o poc informatius; aquest ha estat l'enfocament d'aquesta tesi.

La estadística bayesiana ja te molts anys d'història, però no va ser fins a finals dels anys vuitanta quan van començar a ser presa com una alternativa pràctica a la teoria clàssica. A més, és a principis d'aquest segle quan ha experimentat el seu major creixement, coincidint amb el desenvolupament de nous mètodes per estimar les distribucions posteriors i el gran poder computacional dels ordinadors personals. Aquests mètodes han evolucionat en gran mesura en els últims anys des del primer d'ells amb els mètodes (re)descobriments de Montecarlo utilitzant cadenes de Markov (MCMC) (Gelfand et al., 1990; Gelfand). Smith, 1990), a l'Aproximació Integrada Nested Laplace (INLA) proposada per (Rue et al., 2009). Una altra de les principals raons de l'augment de la inferència bayesiana va ser l'aparició de programari com WinBUGS o JAGS, ambdós utilitzats en aquest treball que permet la generació de mostres de la distribució posterior del model especificat. Com a exemple molt bàsic de la teoria de Bayes, considerem que tenim dos possibles esdeveniments A i B, suposant que $A = A_1 \cup \ldots \cup A_n$ on $A_i \cap A_j = \theta$ for $i \neq j$, llavors el teorema de Bayes expressa la probabilitat condicional de Aii donat B amb l'expressió següent

$$P(A_i|B) = \frac{P(B|A_i)P(A_i)}{P(B)} = \frac{P(B|A_i)P(A_i)}{\sum_{i=1}^{n} P(B|A_i)P(A_i)}. \tag{1.1}$$

O més generalment,

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)} \propto P(B|A)P(A). \tag{1.2}$$

La lògica darrere de les estadístiques bayesianes és que es basa en el teorema de Bayes presentat en les equacions 1.1 i 1.2, oferint un mecanisme d'aprenentatge probabilístic de les dades (Smith et al., 2001). Després d'observar les dades $(y_1, y_2, \ldots, y_n)$ es pot calcular la distribució posterior$f(\theta|y_1, \ldots, y_n)$ combinant la distribució prèvia dels paràmetres i la distribució de probabilitat de les dades observades, és a dir, la versemblança (Ntzoufras, 2008).

Finalment, la distribució posterior $f(\theta|y)$ dels paràmetres θ donades les dades observades es defineixen, seguint el teorema de Bayes, com:

$$f(\theta|y) = \frac{f(y|\theta)f(\theta)}{f(y)} \propto f(y|\theta)f(\theta), \tag{1.3}$$

Amb $f(\theta)$ la distribució prèvia dels paràmetres i

$$f(y|\theta) = \prod_{i=1}^{n} f(y_i|\theta), \tag{1.4}$$

la versemblança. Utilitzant aquesta distribució posterior, podem estimar aquests paràmetres.

Els models compartimentals van ser dissenyats per estudiar la dinàmica de malalties en una població donada. Alguns exemples són el model d'infecció susceptible (SI) o el model Susceptible-infecció-susceptible (SIS). En el primer d'ells, cada individu passa de ser susceptible a infectat i ja no torna a ser susceptible ni es recupera perquè la malaltia és mortal i acaba en la mort, també es coneix com el model d'infecció fatal. El segon d'ells, el SIS, és anàleg al nostre enfocament que es mostra en la Figura 1. El model SIS té dos compartiments: S i I. Aquests models difereixen dels anteriors en el fet que no modelen infeccions que acaben en la mort. El model SIS s'utilitza sovint en malalties sexuals i en moltes infeccions bacterianes (Keeling & Rohani, 2007).

La Figura 1 descriu el nostre model general en el qual tenim dos Estats (ocupats i aturats) i dues fletxes que indiquen el flux entre cadascun d'ells. En aquest treball estudiarem les cohorts d'accés al mercat laboral, quinquennialment, de 1970 a 1990 i les seguirem fins a 31/12/2013, a més de comparar per sexe.

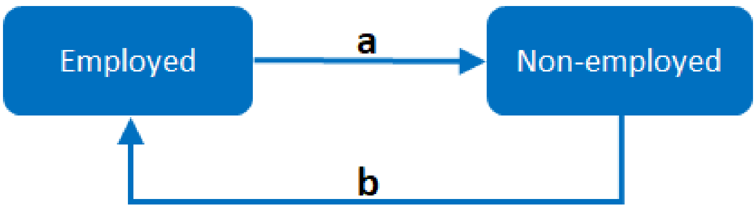

Figura 1: Model compartimental per a ocupats (employed) versus no-ocupats (Non-employed)

Sigui E_t a proporció d'empleats en un temps donat t i N_t la proporció de no-empleats $(1 - E_t)$ al mateix temps t. Llavors aquest model compartimental es pot descriure algebraicament com el següent sistema d'equacions:

$$E_{t+1} = E_t - aE_t + bN_t, \tag{1.5}$$

$$N_{t+1} = I_t + aE_t - bN_t.$$

La primera equació 1.5 descriu que la proporció d'empleats del mes següent (E_{t+1}) és igual a la proporció del mes actual (E_t) menys aquells que surten de l'ocupació a la no ocupació (aE_t) més aquells que entren a l'ocupació (bN_t). La segona equació descriu que la proporció de treballadors no autònoms el mes que ve (N_{t+1}) és igual a la proporció en el mes actual (N_t) és els que van caure en la no ocupació en aquest temps t (aE_t) menys els que van entrar en ocupació (bN_t).

El mercat laboral espanyol està molt dualitzat. Els reglaments en el mercat laboral espanyol han introduït una major flexibilitat al marge que ha provocat un augment de la volatilitat de l'ocupació i la inestabilitat laboral. Malgrat els esforços del Govern per promoure la contractació de forma permanent, no s'ha reduït la part dels contractes de durada determinada. Per tant, el mercat laboral està dividit entre els interns que tenen una ocupació estable, és a dir, contractes permanents i baixa volatilitat laboral, i els forasters que tenen una volatilitat de treball més alta i que busquen contínuament una nova ocupació. La figura 2 descriu un model multiestatal per al mercat laboral espanyol que reflecteix la dualització del mercat. Tal com es va descriure al principi, estudiarem les cohorts d'entrada de mà d'obra de mercat de 1991 a 2002 amb la partició de gènere.

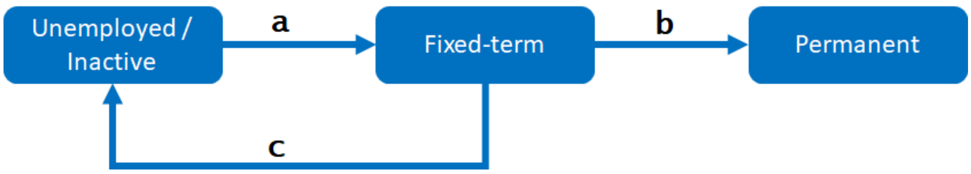

Figura 2: Model compartimental per a outsiders vs insiders

Aquest model es pot expressar en forma de les següents tres equacions interrelacionades:

$$U_{t+1} = U_t + cF_t - aU_t,$$

$$F_{t+1} = F_t - bF_t + aU_t - cF_t, \tag{1.6}$$

$$P_{t+1} = P_t + bF_t.$$

La primera equació mostrada en 1,6 descriu que la proporció desempleats/inactius en el mes següen (U_{t+1}) és igual a la proporció de desempleats/inactius en el mes actual (U_t) més els que van perdre el seu contracte de durada determinada (o contracte temporal) (cF_t) menys aquelles persones que van obtenir un contracte temporal(aU_t). La segona equació mostra que la proporció de persones amb contractes temporal el mes que ve (F_{t+1}) és igual a la proporció amb el mateix tipus de contracte en el mes actual (F_t) més els que van de la desocupació/inactivitat a l'ocupació amb un contracte indefinit (aU_t) menys els que van aconseguir una posició permanent -*insiders* - (bF_t) menys els que van perdre la seva ocupació perquè van caure en la desocupació o la inactivitat (cF_t). Finalment, l'última equació mostra que la proporció de treballadors permanents el mes següent és igual a la proporció de treballadors permanents aquest mes (P_t) més la proporció de treballadors fixes que van aconseguir un contracte permanent (bF_t). Es pot argumentar que falten algunes fletxes en aquest model. No obstant això, incloent-hi més fletxes faríem augmentar substancialment la complexitat del model, de manera que es va decidir utilitzar aquest modelatge més simple però útil.

Amb el mètode esmentat anteriorment, tindrem una única estimació (amb el seu interval creïble) per a cada cohort. Això significa que una sola distribució definirà la sencera cohort d'entrada laboral. No obstant això, és ben sabut en la literatura que la inestabilitat no és homogènia durant la vida laboral en el sentit que els joves tendeixen a tenir més inestabilitat que les persones majors. Per tant, encara que tenir un únic paràmetre pot demostrar ser útil, es pot expandir per fer-lo variar durant la vida laboral.

Aquí presentem un mètode per donar compte de la dependència del temps. La idea darrere del procés és estimar els paràmetres en blocs de 10 mesos. Aquesta mida es va decidir després de diverses proves provisionals on tenir blocs més petits va produir problemes amb l'estimació de paràmetres. Per contra, l'augment de la grandària del bloc ajudaria a l'estimació, però aquestes estimacions no reflectirien les subtils diferències de petits períodes de temps. Usant el període de 10 mesos teníem la mida suficient per estimar correctament els paràmetres a i b i no massa grans per suavitzar les diferències. A més, la superposició de blocs també es va considerar i el lector pot trobar una justificació pràctica de la superposició de 5 anys entre blocs que utilitzen cohorts de la dècada de 1970, de manera que les estimacions consecutives d'un paràmetre donat compartien part de les dades. Aquesta cohort es va utilitzar per inspeccionar visualment el resultat d'utilitzar blocs no superposats (block: $t = 1 \ \dots \ t = 10$; block 2: $t = 6 \ \dots \ t = 15, \dots$) i 9 anys de superposició (block 1: $t = 1 \ \dots \ t = 10$; block 2: $t = 2 \ \dots \ t = 11, \dots$). A partir de cada bloc s'extreu la mitjana de la distribució posterior de cada paràmetre. Per tant, és necessari subdividir les dades en *k*-blocks de 10 mesos perquè en cada bloc s'apliqui el modelatge jeràrquic bayesià. La versemblança és:

$$E_{j(k)} \sim Beta(\mu, \phi), \qquad k = 1, \dots, M, \quad j = 1, \dots, 10 \tag{3.21}$$

amb

$$\mu_{E_{j(k)}} = C_2 \frac{b_k}{a_k} - C_1 e^{-j(a_k + b_k)}. \tag{3.22}$$

Així k denota cada un dels *M* blocs i j cada mes dins de cada bloc, és a dir $j(k)$. Per tant, per a cada cohort hi haurà *M* distribucions posteriors de cada paràmetre (a, b, ϕ). Les distribucions anteriors d'aquests paràmetres són:

$$a_k \sim Uniforme(0{,}1), \tag{3.23}$$

$$b_k \sim Uniforme(0{,}1),$$

$$\phi_k \sim Gamma(0.005{,}0.005).$$

Per tal de validar els models, es van realitzar 500.000 iteracions per a cada model, de manera que el nombre efectiu de simulacions ($n.eff$) era superior a 100 en cadascuna de les distribucions de *a* i *b*. A més, per a tots aquests models, també es va verificar que l'estadística de Gelman-Rubin R era al voltant d'1 que és un indicador de bona convergència (Brooks & Gelman, 1998) .

Els mitjans de les distribucions posteriors de cada a_k i b_k van ser escollits com a estimacions puntuals d'aquests paràmetres i es van associar amb el punt mitjà del bloc mòbil. Per exemple, per a a_1 calculem la seva distribució posterior i seleccionem la seva mitjana. Aquest valor s'associa amb el punt mitjà de l'interval de la sèrie ($t_1 = 5$). Anàlogament, per a a_2, s'hi va seleccionar la mitjana de la distribució posterior i també el punt mitjà $t_2 = 10$ i així successivament.

Els models per a homes i dones són anàlegs i es denotarà$E^m_{j(k)}$ per a la proporció observada homes que estan ocupats i $E^w_{j(k)}$ per a la proporció observada de dones ocupades.

L'ús dels models compartimentals anteriorment descrits ens permetrà estudiar quantitativament la (in)estabilitat laboral. No obstant això, aquest efecte també pot ser observable a la WLE (esperança de vida laboral) o ELE (esperança de vida en ocupació) per a cadascuna de les cohorts. Aquí presentem un mètode descrit per (Hytti et al., 2004) per calcular l'esperança de vida laboral i l'esperança de vida en ocupació. Aquest enfocament utilitza el mètode de Sullivan (Sullivan, 1971) que es basa en les taxes de prevalença és a dir, proporcions. A causa de la seva característica estandarditzada, també és útil per a la comparació de diferents països o períodes de temps. Tots dos conceptes també es podrien calcular a través de models multiestat utilitzant probabilitats de transició, però es requereixen dades longitudinals (Dudel, 2018b) i aquesta metodologia és molt més complexa de dur a terme.

El càlcul de WLEi d'ELE utilitza el mateix enfocament de cohorts sintètiques que en l'esperança de vida. Definim una cohort sintètica com un grup imaginari de persones que experimenten, hipotèticament, les condiciones demogràfiques d'un període de temps durant la seua vida laboral Aquí utilitzarem dades de taules de vida i de mercat laboral per a construir una WLE i d'ELE específica per a l'edat de la població espanyola que va entrar al mercat laboral entre 1976 i 2014. Per calcular la WLE i ELE espanyols, es requerien xifres de supervivència de les estadístiques de mortalitat i taxes d'activitat. No obstant això, les bases de dades en línia només tenen informació sobre les taxes d'activitat en grups de cinc anys. Per tant, es va fer una petició especial (contracte amb

INE ref: 3/6003 i 3/5982) per rebre taxes d'activitat en grups d'un any. Encara que la nostra intenció era incloure la població de 16 anys o més a partir de 1970, se'ns va notificar que això no era possible i que el registre més antic que tenia la institució era de 1976. La resta de les dades necessàries es van descarregar de l'Institut Nacional d'Estadística espanyol.

En el cas de la WLE, aquest mètode proporciona, per a cada edat, el període mitjà esperat de pertinença al mercat de treball, és a dir, actiu, ajustant-se per l'activitat i les taxes de mortalitat de cada any. De la mateixa manera, per a ELE, aquest mètode proporciona el període d'ocupació mitjana esperat que queda a una edat determinada. Com que és una mitjana calculada sobre tots els adults del país, l'indicador està fortament influenciat pel nombre de persones inactives en un país. WLE mostra l'efecte combinat de la proporció de població adulta que roman en el mercat laboral cada any i la seua esperança de vida ajustant per la taxa de mortalitat en cada any. Per tant, els resultats no es poden interpretar en termes d'anys d'ocupació. La metodologia utilitzada per a cada any és la mateixa, però reconeguem que tot el crèdit pel desenvolupament d'aquest enfocament va a (Hytti et al., 2004). Per calcular ELE, la metodologia és molt similar amb l'única diferència que cada vegada que s'utilitza la taxa d'activitat, utilitzem la taxa d'ocupació. Una vegada que hàgim construït totes les taules de 1976 a 2014, hem de seguir cada cohort sintètica. Això es fa mitjançant un diagrama de Lexis descrit per Wilhem Lexis el 1875.

Conclusions

Estudiem la (in)estabilitat laboral des de dues perspectives. En primer lloc, com a transició de l'ocupació a la no ocupació i viceversa en un model de dos components i, en segon lloc, les transicions entre *insiders* i *outsiders* del mercat laboral en un model de tres components. Atès que podria haver-hi diferències en la (in)estabilitat des d'una perspectiva de gènere, ja que els patrons entre homes i dones poden variar de manera diferent, l'efecte del gènere també s'ha inclòs en aquest estudi. A més, també es van analitzar els canvis en la (in)estabilitat entre les diferents cohorts de treball del mercat. També es van investigar els patrons en l'esperança de vida laboral i l'esperança de vida laboral en ocupació per edats de 1976 a 2014. La conclusió de l'aplicació de models dinàmics compartimentals per a estudiar el mercat laboral de les dones i dels homes va en línia amb el que altres autors ja han observat: la presència d'una forta segregació laboral de gènere. Els nostres resultats mostren una tendència a la reducció de la diferència de gènere en estudiar la velocitat de transició a la no ocupació. Aquesta tendència es pot observar també si ens fixem en com les diferències en la velocitat de transició a la no-ocupació entre homes i dones disminueix a mesura que estudiem cohorts d'entrada al mercat mes joves. Aquelles dones que van entrar durant 1970, 1975 o 1980 van experimentar una alta velocitat a la no ocupació en comparació amb els homes i la bretxa va ser la més alta en comparació amb la resta de cohorts. De fet, les diferències en la velocitat a la no-ocupació entre homes y dones que van entrar al mercat laboral en 1985 o 1990 són menors. D'altra banda, en la cohort d'entrada al mercat laboral de 1990 no observem gairebé- diferències entre homes i dones en la velocitat de transició a la no ocupació. Encara que assenyalem que la bretxa en la velocitat de transició a la no ocupació entre les dones i els homes s'està reduint, els patrons d'(in)estabilitat difereixen substancialment entre ells. Homes i dones que van entrar en el mercat laboral durant 1970 mostren patrons similars amb baixa inestabilitat per a tots dos sexes. No obstant això, a partir de la dècada de 1975, les dones mostren alta inestabilitat durant totes les trajectòries laborals. Per contra, el comportament dels homes va canviar de 1975 a 1990 amb una alta inestabilitat durant tota la trajectòria laboral de la cohort de 1975 a un perfil de dues fases d'(in)estabilitat. Els homes d'aquesta cohort d'entrada al mercat de treball presentaven una alta inestabilitat a l'inici de la trajectòria laboral, però, després d'uns 8 anys, s'observa una reducció de la inestabilitat. Una altra conclusió clau d'aquesta tesi és que no es van trobar diferències en velocitat de transició en els primers anys de trajectòria laboral entre homes i dones. No obstant això, no totes les cohorts van presentar el mateix perfil; els resultats mostren que, en cohorts de la dècada de 1970 i principis de la dècada de 1980, la diferència de gènere emergeix al voltant de 4 anys després d'entrar al mercat laboral. Per contra, les persones que van entrar en el mercat laboral en 1985 no van tenir cap diferència en la velocitat de transició a la no ocupació durant uns 10 anys. A més, les persones que van entrar en el mercat laboral durant 1990 van mostrar 14 anys sense diferències en la velocitat de transició a la no ocupació.

En conclusió, observen una reducció de les diferencies en la velocitat de transició a la no-ocupació entre homes i dones; de fet, a mesura que estudiem cohorts mes joves s'observa que les diferencies de gènere tarden mes en aparèixer. No obstant això, els patrons d'(in)stablitat entre homes i dones sí que són molt diferents ja que els homes tenen menys inestabilitat que les dones

Com era d'esperar, sorgeixen diverses limitacions d'aquesta metodologia, però moltes d'elles poden considerar-se positivament com a reptes que cal afrontar per al treball futur. Com s'ha descrit al principi de la secció de resultats sobre els models compartimentals dinàmic, utilitzem blocs mòbils en els quals estimem la velocitat de transició a l'ocupació o a la no ocupació. Hem utilitzat un solapament de cinc mesos, però aquest número és, en essència, subjectiu, per què no 4, 6 o 5,5? – Efectivament necessitem algun mètode per a evitar aquest subjectivitat en la selecció del solapament . Ara bé, podem albirar dues maneres de millorar els blocs mòbils. En primer lloc, l'ús de "blocs adaptatius mòbils" en els quals el nombre de mesos superposats varia segons les dades originals. Això significa que quan es detecta un canvi fort (és a dir, un ràpid augment o disminució de la desocupació) el nombre de mesures superposades s'incrementa per tal de suavitzar aquest canvi sobtat. En la nostra opinió, la metodologia de "blocs mòbils adaptatius" podria permetre reduir les necessitats de càlcul ja que s'evitaria el solapament en excés quan no és necessari. Una segona línia d'investigació que és complementària a l'anterior podria ser anomenada com a "bloc mòbil adaptatiu ponderat" La idea que hi ha darrere d'això podria ser donar més pes a les dades del centre del bloc i menys pes als extrems.

Una altra limitació que ha sorgit d'aquesta tesi va ser l'estimació del paràmetre associat a la velocitat de transició de la no ocupació a l'ocupació. Els intervals de credibilitat associats a aquest paràmetre eren sempre massa amples per treure qualsevol conclusió rellevant. Per desgràcia, tenim poc a oferir, ja que no estem segurs de per què està ocorrent això; no obstant, el punt de partida d'aquesta línia de recerca podria ser l'ús d'altres distribucions a priori per a modelar la variància de la distribució beta. No obstant això, uns intervals tan amplis podrien inclús ser un veritable reflex de la gran inestabilitat en la transició a l'ocupació, però cal explorar altres mètodes per a validar aquesta assumpció. Altres limitacions que sorgeixen del marc teòric són la simplificació excessiva dels dos models proposats. És ben sabut que la (in)estabilitat en el treball es veu afectada pel gènere, però aquest no és l'únic factor que l'afecta, d'altres poden estar afectant-lo. Tanmateix, això ens porta a una forta limitació del nostre estudi: la font de dades. En primer lloc, faltaven algunes variables importants i, per tant, el seu efecte sobre la (in)estabilitat en el treball no es podia estudiar. D'altra banda, es van recollir altres variables tardanes, la qual cosa va portar a un seguiment curt en el temps. Aquesta és la raó principal per la qual no hem pogut treure conclusions més sòlides a l'hora d'aplicar el modelatge dinàmic compartimental a l'estudi dels *insiders* i *outsiders.*

Hem debatut críticament els resultats i les limitacions d'aquesta tesi, però, com a última paraula, és necessari considerar la naturalesa d'aquesta tesi. La idea principal darrere d'ella va ser el desenvolupament i l'aplicació d'un nou mètode quantitatiu que utilitza les trajectòries del mercat laboral com a exemple d'aplicació, però que no es limita a a aquesta aplicació sinó que podria aplicar-se a altres estudis sociològics o fins i tot a altres disciplines. Els mètodes desenvolupats ací requereixen una forta formació en estadística i/o matemàtiques que difícilment es poden aconseguir en diversificar l'educació en perspectives tant qualitatives com quantitatives. És innegable que aquesta tesi metodològica està fortament lligada a la perspectiva quantiativa, i hauria de considerar-se com un exemple de la creixent necessitat d'especialització i, també, de la transdisciplinaritat en les ciències socials. Els nous mètodes quantitatius en les trajectòries laborals estan augmentant en complexitat com els models multiestat; com per exemple, els models ocult de Markov ocult, els models de mixtures i ocults de Markov o l'enfocament de Dudel a l'esperança de vida laboral (Dudel, 2018c) que requereixen que els científics socials tinguin una comprensió més profunda de les estadístiques i/o matemàtiques. Aquest augment de la complexitat conduirà, sens dubte, a una major especialització dels sociòlegs, o fins i tot a la inclusió d'altres disciplines en l'estudi de la vida social. Aquesta transdisciplinaritat també era una perspectiva clau en aquesta tesi, ja que el seu progrés no podria haver estat possible sense la col·laboració de sociòlegs, matemàtics, estadístics i enginyers agraris. Tots ells eren experts en mètodes quantitatius en les seves disciplines, però tenien opinions diferents sobre com hauria de ser un model compartimental dinàmic. Per tant, el desenvolupament metodològic també necessita d’un enfocament transdisciplinari.

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Introduction

Social sciences are intellectual disciplines that study individuals as a social being through the scientific method. It focuses on them as members of society and on the groups and societies in which they belong, and this is what distinguishes the social sciences from the physical and biological sciences. In sociology, complexity is a particularly important topic which has broadly discussed by structuralists such as Ferdinand de Saussure (1857 – 1913) or Michel Foucault (1926 – 1984) among others. Social systems have an open and dynamic nature in which interrelations occur and we, as social scientist, try to reveal. The complexity of studying social life requires, as in many areas, a transdisciplinary approach from the planning and the designing of the research first meetings to the writing of the conclusions. However, this is not always true when the methodological approach is a quantitative one. Here, most of the time, an individual or group of individuals - usually from the same discipline - are also in charge of the statistical analyses. Despite their interest and sensitivity, while discussing the statistical approach, all participants share the same statistical language as they all belong to the same background and have similar training ignoring other approaches. For instance, social scientist might use multi-level analysis to account for hierarchical data structure, or clustering. Still, this technique was already long-established in the statistical literature in the context of random effects modelling. This thesis can be seen as an example of transdisciplinary in the context of methodology as the techniques developed here could not have been possible without the dialogue between sociologists, mathematicians, statisticians, and agricultural scientists.

Three main disciplines which are strongly related can be seen as the foundation for this research: demography, epidemiology, and statistics. The works of John Graunt (1620 – 1674), Johann Peter Süssmilch (1707 – 1767) and Daniel Bernoulli (1700 – 1782) can be seen as starting point of this research due to their contributions to life expectancy and disease modelling. John Graunt is recognized as the father of demography and the first to produce a life table which describes the probabilities of survival to each age and laid the groundwork for working life and employment life expectancy which are here described. Moreover, John Graunt was also considered an epidemiologist and statistician as his works were used for public health statistics. Following him, Johann Peter Süssmilch in his work "The Divine order in the changes in the human sex from birth, death and reproduction of the same" (1761 – 1762) finally breaks with the idea of a *divine order* in which all populations are similar between them and if any differences are found, they are insignificant. He observed that marriage rate was steadily declining from the beginning of the century and urged the prince to take action. Johann Peter Süssmilch did not only describe the situation but also took part on the solutions as he engaged into population politics. During that same century a renowned mathematician laid the methodological groundwork for this research. Indeed, the methodological starting point of this thesis is not from Social Science, and, to our knowledge, it has never been used in this context before. The roots of the methodology developed here can be found in the seminal paper by Daniel Bernoulli published in 1766 (Bernoulli, 1766) who was probably the first that introduced the use of mathematical models in the study of epidemic outbreaks. From here, compartment models have been extensively used in the field of epidemiology, biological processes and ecological interactions among others, but are practically unknown in social science, particularly in sociology.

We assume that labour (in)stability could be operatized as transition speed from employment to non-employment and vice versa. If speed is high, instability is also high; on the contrary, if transition speed is low for a given set of individuals, these have low stability. Some authors have studied this phenomena using other well-stablished methods that focus on clustering similar labour trajectories and then studying which variables affect having a given trajectory (Verd et al., 2019), others use multistate modelling to understand factors affecting transition from one labour state into another (Dudel, 2018). However, to our knowledge, none of them have measured labour (in)stability as the speed of transition from one state to other. This methodology might enable researchers identify new patterns in the study of labour precariousness that have yet not described.

The primary aim of this thesis is to develop a novel methodological framework for the study of labour (in)stability which focuses on transition from one state to another. Although the focus will always be labour market, it is very clear that the methods described here might be applied to other areas of Social Science. Data used for this research is known as Continuous Samples of Labour Trajectories (MTAS, 2007) which is the result of the collaboration of Social Security, the National Statistics Institute (INE) and the Tax Agency (AEAT) in Spain. The data is an anonymized extract of one million people who were enrolled in Social Security in a specific year. Using this source, (In)stability will be studied from two perspectives. Firstly, as transitions from employment to non-employment and vice-versa in a two-compartment model. We will study market labour entrance cohorts, quinquennially, from 1970 to 1990 and we will be following them until 31/12/2013 as well as comparing by sex. Secondly transitions between fixed-time, permanent workers and non-employment in a three-compartment model. Here, due to sample limitations, individuals will be followed annually from 1991 to 2002 with a fixed follow-up of ten years and results will also be presented by sex.

We believe that transition speed will vary according to various factors. Firstly, instability might be higher at early stages of working life due to individuals having less experience and, therefore, quickly losing and/or changing jobs. Secondly, transition speed patterns could be different between males and females due to the traditional labour division; however, we hypothesize that younger cohorts weaken the so called "male breadwinner" model, and that gender differences will be lower compared to older ones. Moreover, those differences could be more visible during midlife because women may shift to unpaid housework and caring leading to a higher transition speed to non-employment. Finally, macroeconomic fluctuations are known to affect market labour and here we expect that major economic crisis will have an effect on transition speeds.

Finally, the link between total expected time in employment or activity and (in)stability will be evaluated. In order to do so, patterns in age-specific working life expectancy and age-specific employment life expectancy for cohorts which enter labour market from 1976 to 2014 will also be investigated. The calculation of life expectancy and employment life expectancy requires year-by-year activity and employment rates. Unfortunately, this data is not openly available so a special petition to the National Statistics Institute was required to receive this information. Therefore, the data used for this objective is not MCVL as in the rest of the endpoints. We hypothesize that cohorts in which there is high transition speed to non-employment will have low expected time in activity or employment because working life expectancy and employment life expectancy use activity and employment rates in their calculations. Moreover, those cohorts with a more stable profile may show a more homogeneous decline of working and employment life expectancy as retirement approaches. This is, no abrupt changes in expectancy might be identified compared to those cohorts in which high instability can be found.

This thesis is divided into five different chapters. The first chapter will provide a theoretical framework of the concept of (in)stability. It will describe from a critical perspective, the population categories according to their relation to labour market in order to lay out the main concepts which are central to this thesis. Although this is a methodological thesis, we believe it is necessary to describe the context in which analyses are carried out. Therefore, in the second part of the chapter, we will dig into the nature of Spanish labour and its peculiarities as well as its evolution from the end of Franco's dictatorship to the effects of the 2008 financial crisis. Here we will present how Spanish labour is highly dualized into outsiders and insiders of the labour market. Our three-compartment model will try to operationalize these two theoretical groups. Here, permanent workers could be classified as insiders due to having a more secure job while those with fixed-term contracts as outsiders. The last have a higher risk of being expelled from labour market and thus a higher a instability. Finally, the third compartment refers to those who are outside labour market.

The second chapter will describe the different methodologies used in Social Science to study labour trajectories. The importance of this chapter is twofold: it will lay the groundwork to understand the methodology used in this research as well as it will describe their limitations in comparison to our proposed dynamic compartment modelling. We will start with the well-known Sequence Analysis or Event History Analysis and increase in complexity introducing multi-state models or even latent class analysis. The aim of this chapter is to provide the enough methodological background to contextualize the main focus of this thesis: a different, yet complementary, approach to study labour trajectories.

The third chapter is the core of this thesis as it describes the novel application of some statistical methods to study (in)stability. It will start explaining the data and the importation procedure. Following data and variable descriptions we present compartment models and will formally describe our two models: insiders vs outsiders as a three-compartment model and a two-compartment model describing employed vs non-employed. It will continue characterising the different ways of parameter estimation focusing on the Bayesian approach. Following compartment models, we will provide our main contribution in this thesis which is dynamic compartment modelling using Bayesian parameter estimation inside moving blocks. Finally, we describe the methodology used to calculate working life expectancy and employment life expectancy.

In the fourth chapter we will present the results from this thesis. This chapter will be divided into three parts. The first part will show results from a non-dynamic perspective whereas in the second part we will report the results from the dynamic perspective. Lastly, the third part will focus on the working life expectancy and employment life expectancy.

Finally, the last chapter will discuss all results obtained, pointing out limitations that this research presents, to guide future work. Finally, a list of main conclusions from this thesis is provided.

1. Labour market in the Spanish state

"Workers are asked to behave nimbly, to be open to change on short notice, to take risks continually, to become ever less dependent on regulations and formal procedures."

Richard Sennett, *The Corrosion of Character: Personal Consequences of Work in the New Capitalism*

The theoretical framework of this thesis is based on a life course approach which focuses how social forces affect individuals in their continuous transformation and development over time (Dannefer, 1984; Glen & Elder., 1994) . In this context, life courses are embedded in the interplay of human lives and historical times, the timing of lives, linked or interdependent lives, and human agency in choice making (Glen & Elder., 1994). The first of them relates to the differences that individuals face depending on the year of birth as they are exposed to different historical worlds. The timing of lives relates to the social meaning of age. Authors describe social timing as "the incidence, duration, and sequence of roles, and to relevant expectations and beliefs based on age" and use marriage as an example due to its demographic and age norms. Linked lives refer to the independence of lives as individuals are involved in changing social relations during their life span. Finally, human agency which is a key concept in Thomas and Znaniecki's works (i.e., *The Polish peasant in Europe and America*) which is described as how individual choices that shape their life courses (Clausen, 1968). A life course perspective enables focusing on how individuals interact with labour market over time.

During the Franco regime (1939-1975) the main economic policy was self-sufficiency, but it was not achieved (Jimeno & Toharia, 1994). Although some reforms were introduced after the foreign exchange crisis at the end of the 1950s, they were not enough and the end of the autarkic regime left the economic structure was highly inefficient (Bentolila & Blanchard, 1990a). Labour reforms started after the death of the dictator in an unfavourable atmosphere of economic and social crisis. These reforms only affected newcomers to the labour market which led to a dual market where one group have a stable job and low job volatility[1] and the other group who have a higher

[1] Volatility must be seen as synonym of instability

job volatility and are permanently looking for a new job (Auer & Cazes, 2000; Toharia & Malo, 2000).

The structure of this Chapter is as follows. We will first describe the types of population categories according to their relation to the labour market. In this work, the first difficulty we encounter is to establish a clear and concise definition of the different economic categories and it is fundamental to understand them as they are a central point of all models. After, we will then proceed describing labour (in)stability and how this affects the Spanish labour market and how it is related to the dualism of the Spanish market and the working life expectancy. This concept is fundamental in order to understand the theoretical framework in which this thesis is enclosed. Moreover, as this is mainly a methodological thesis, it is important to describe the state of art in labour trajectories methodologies which serve as principal guidance for the development of Bayesian dynamic compartment modelling.

1.1. Population categories according to their relation to labour market

There is a consensus in that the population over 15 years of age may be divided into two groups. In the first one we have the active population and, secondly, the inactive population. Among the first we can further subdivide them into employed or unemployed. Those who cannot be categorised as active population are considered inactive. However, as we will see in the following sections, the definition of being unemployed, employed or inactive is not as straightforward as it may seem and are not very grounded from the sociological point of view. Indeed, according to (Sanchis & Simó, 2014) there are three different rationales in the understanding of the types of population categories according to their relation to labour market: estimated, registered and sociological.

1.1.1. Economically active population

According to the definition of the Spanish National Institute of Statistics (INE), the active population is:

the group of people of a certain age that, in the reference period, supply labour for the production of goods and economic services or that are available and make arrangements to join such production.

[...]

The economically active population comprises all persons 16 years of age or older that during the reference week (the prior to that in which it is appropriate to conduct the interview according to the calendar) satisfy the necessary conditions for inclusion among employed or unemployed people, as defined below. (INE, 2008a)

This definition opens up new questions because we now have to define what it means to be an employed or unemployed. This definition has been studied by other authors. (Sanchis & Simó, 2014) defined these two groups due to the need of having a selection criterion for people to be interviewed in a qualitative study. The authors reflect on the various approaches to unemployment and contemplate two official definitions and a more sociological approach.

Unemployment

One of them is proposed by the INE and defined as *estimated unemployment*. It is based on the recommendations of the International Labour Organization (ILO) and European regulations. In Spain we have the *Encuesta de Población Activa (EPA)* designed by INE but we also have, in a European level, the Labour Force Survey (LFS) designed by Eurostat. This last survey is homogenized with the rest of the countries of the European Union allowing the comparison between them. It is considered an estimation of employment because it is survey based and the prerequisites to be considered unemployed, employed or active differ from the *register* or *sociological* perspective.

According to INE, i.e., EPA, the necessary conditions to be considered unemployed are:

• *Unemployed*: population had no employment or self-employment during the reference week.[2]

• *Job seeker*: population who have taken specific measures in job searching or procedures in order to establish themselves as self-employed during last month.[3]

• *Available to work*, people who are able to work in a maximum term of two weeks from the week of reference.

Unemployment status is also considered in people 16 years of age or older that during the reference week were unemployed, available for work but are not looking for a job because they have already found one that will be incorporated into in the three months following the reference week. Therefore, in this case, the criteria of job seeker are not applied. (INE, 2008b)

According to the INE a person is unemployed in the case that they meet the three conditions simultaneously mentioned above. That is, not having a job, looking for it and being available for it. In case of not satisfying one or more of these conditions the person will be considered inactive. Therefore, a person who has long been unsuccessfully of finding a job and due to discouragement no longer seeks for one, will be considered inactive for EPA due to not fulfilling the second condition. According to (Sanchis & Simó, 2014), this understanding of unemployment suggest that there is a long time tendency in the labour force surveys to gradually restrict and reduce the concept of unemployment and transfer to the individuals the responsibility of falling into and remaining under the unemployment state.

On the other hand, *registered unemployment* refers to data that the public employment services have. As in the case of INEs proposal, this definition of

[2] See *register employment* for more info.

[3] The specific measures which INE refers to is related to the actively looking for a job in the reference week. These measures required to be considered a job seeker include but are not limited to, having contact with public office for job searching, studied job offers or made arrangements in order to get permits, licences or financial funding.

unemployed person is not be exempt from criticism. The Spanish employment services do not consider unemployed people if they are over 65 years old or people who are under that age but are receiving retirement subsidy, students of regulated education under 25 years (or older claimants of first job) or eventual agricultural workers beneficiaries of the special unemployment benefit, among other cases.

Two official definitions of unemployment co-exist: *registered* and *estimated*. Administrations use *registered* while the National Statistics Institute use the *estimated* approach. Figures vary between these two definitions and there is no consensus in which of them should be always used. Therefore, it is difficult to concisely define unemployment people from a quantitative perspective. However, we now continue defining what is understood by an employed based on the INE and labour administration.

Employment

According to the INE, all those people who are 16 years old or older will be considered employed if they have had a job in the reference week hired either by someone else or by exercising an activity on their own. People are considered employed by someone if they fall into the following categories:

• *With job*: People that, during reference week, have been working at least one hour in exchange for a pay.

• *With job but not working* People who did not work during reference week but have a strong link to their job, i.e., holidays.

Both employment and self-employment are similar to each other and differ in flexibility over your own working life, taxing and social security insurance.

We previously described the *registered unemployment* is managed by the relevant labour administration. *Registered employment* is administered, in Spain, by the Social Security Treasury which has information of people's affiliation to social security.

In this work we will use a sample of the Spanish population which were affiliated to the social security during 2014, further explanation of this data can be found in Chapter 5.

One of the major criticisms to the *registered occupation* is that it only takes into account those people who are affiliated and therefore ignore any informal economy. Also known as underground, merged or secondary economy relates to the unregulated activities by social institutions, where similar affairs are indeed (Portes et al., 1989). From a legal perspective, this type of economy can be described in two ways. On the one hand that the activity which is illegal because it is part of the criminal economy or, that productive activity that is carried out in violation of the tax or labour legislation (Sanchis, 2005). Criminal economy is often described as the production and distribution of illicit goods and services (Friman, 2004). Therefore, the *registered occupation* underestimates the total number of employed people by being unable to take into account those people living in the informal economy.

1.1.2. Economically inactive population

According to the INE, the functional categories that are taken into account to categorise someone as inactive are:

- *People are dedicated to domestic affairs*: Those who are not involved in any economic activity and take care of their own houses, other family members or children.

- *Students*: Those who are not involved in any other activity and enrolled in official education.

- *Retired or early-retired*: Those who have had an economic activity before but due to their age they have abandoned it. These people are receiving a pension for their previous economic activity.

- *People that receive a pension that is not due to retirement or early-retirement*.

- *People that work for no salary such as charity work.*

• *Unable to work*.

• *Other*: people that are not involved in any economic activity but are receiving public or private aid.

As expected, those people who are older than 15 years and who are neither employed nor unemployed will be inactive. However, these categories have been criticized as there are people who are counted as inactive when they could very well be included in other categories. Sanchis & Simó (2014) propose a new reformulation of unemployment called *sociological unemployment* in which to include three groups previously defined as inactive or employed by INE. The first of them are the so called *unmotivated inactive*. This term is referred to people who have stopped actively seeking for employment because they are discouraged to find one. In the context where the employment crisis registered its maximum level, this group of people were estimated to be around 400,000 people in the fourth quarter of the 2011 EPA. The other group refers to young people who neither seek employment, nor study and do not work. The alarming thing about these group is that they are vulnerable since they can be pushed to what Castel described as disaffiliation (Castel, 1997). The reason why they do not seek employment is, mainly, because they have to take care of dependent people or have other family and personal responsibilities. These account for 80 % of the total of those who neither seek employment, nor study and do not work according to data from the fourth quarter of 2011 of the EPA. Moreover, as claimed by INE, everyone who works for one hour is considered to be employed but these people are indeed infra-employed and should be considered unemployed.

In conclusion, we have two large groups according to their relation to the labour market. A first group defined as active where we find the occupied and unoccupied people and a second group where we find the rest of the population who are considered inactive.

1.2. Labour (In)stability

Employment, unemployment, or inactivity can be three different states to which a person can go through their working life. However, these transitions can be forced and not a personal preference such as the case of being fired. Still, the transitions can be a matter of personal preference as could be the case of leaving a job for retirement or some of the job-to-job transitions. Of course, forced transitions are what has most concerned contemporary sociology due to its link to labour instability. This social phenomenon of growing instability has also been defined in the context of life courses as *turbulent trajectories* (Fountain & Stovel, 2014). Rose (1995) used data from Panel Study of Income Dynamics (PSID) studied job stability in United States and argued that there is evidence of increasing instability of employment. He showed that the proportion of people who did not change job for ten years is lower in the 1980's compared to the 1970's.

Non-intervention of the state in the labour market has been defended from the neoliberal ideology and has its origins in the 1970s when major reforms in the economies of the world began. The objective of this process was to deregulate the market with the idea of favouring a free market at the expense of the privatization of the public sector as well as the reduction of social protection. These reforms introduce us into a new economic paradigm that has been defined as "flexible capitalism" (Sennett, 1999). As the epigraph at the beginning of the chapter suggests, we are faced with a world where the worker must adapt to new skills to provide for new products and services. Moreover, individuals will have to adapt to a volatile market where transitions between employment and unemployment are inevitable and increasing. Other important sociologists such as (Bauman, 2004; Beck, 2014; Sennett, 1999) claim that this type of economy brings with it important negative consequences for employees, among which the loss of occupational identity, insecurity or economic and labour instability stand out.

The debate over flexibility and labour market performance is yet to be settled and it seems it is unlikely to happen (Freeman, 2006). Institutions such as the International Monetary Fund (IMF) or the Organisation for Economic Cooperation and

Development (OECD) have argued that this flexibility is seen as positive because it increases employment opportunities and puts the focus on the individual by holding him accountable for his choices (International Monetary Fund, 1999; OECD, 1994). Moreover, these economic policies are seen as the most rational and technically efficient response to a changing competitive environment (Babb, 2004; Centeno, 2007; Markoff & Montecinos, 1993). This may be true for some people who see how they increase their chances of obtaining higher positions and integrate into promising professional projects, but this is not true for all people. However, this hypothesis has been questioned by (Bernhardt et al., 2001) because it shows that the mobility suffered by end-of-the-century workers did not lead to better employment and that generalized mobility dynamics were related to wage stagnation and increased inequality. (Morere-Molinero & Perelló-Oliver, 2014) explain that those who start from more fragile positions in the labour market (i.e., unstable) are relegated to precarious trajectories and have less probabilities of finding a new job.

Indeed, flexibility does not affect all social groups in the same manner, some researchers show empirically supported work where they argue that job instability is not as widespread, especially when studying the relation between education or gender and (in)stability (Doogan, 2001; Farber, 2008a; Gallie, 1988; Heery & Salmon, 2002; Moynagh & Worsley, 2005). These authors defend those individuals with higher education tend to be more stable at their job, i.e., less volatile than the rest. Farber, (2008a) shows, using CPS data, that men's prevalence in long-term employment reaches its lower level in 1996 since 1979. He argues that the prevalence of long-term employment has not declined but it has shifted. Moreover, women are increasingly holding longer jobs compared to before, but males with low education are less likely to hold them. However, other authors are much more critical with the relation and claim that three quarters of the British workforce has suffered job instability and that its negative effects have been more severe in the case of women without children or in older men (Wadsworth et al., 2002). This means that, although education attainment may be seen as an important protective factor against instability, other variables must be taken into account. Other authors such as (Burchill et al., 1999) state how certain professional jobs have been losing status and their work situations began to resemble that of unskilled workers who were always more precarious and unstable. Some decide not to position themselves in favour or against the theorists of flexible capitalism but propose more intermediate positions. This is the case of (Bradley & Devadason, 2008) who studied the trajectories of young people from 20 to 30 years old in Bristol by means of qualitative techniques and ended up defining four typologies. These cannot be understood dichotomously in the sense of risk-no-risk or security-insecurity but show that there are nuances and that some groups tended to be very stable while others are not resulting in a higher likelihood of falling into job insecurity. According to the author's conclusions in terms of gender, it is women and single men who tend to change more jobs. Its conclusions also state that changing jobs does not necessarily have to be due to job instability but may be a reasoned decision of the individual in search of a job with better characteristics. However, they affirm that more than half of their sample went through moments of adverse economic conditions due to unemployment. These are conditions very close to what (Sanchis & Simó, 2014) describe as *infra-employment*, and what is defined as working for less than ten hours a week.

Other authors study job trajectories such as the case of (Bernhardt et al., 2001) that, using the National Longitudinal Survey, showed that trajectories from cohorts of 1979 were less stable compared to previous ones. Farber (2008b) demonstrates that, in the case of the private sector, this instability is not unique to young workers but, in recent years, this dynamic is also happening to individuals over 30 years old. However, it should be noted that the author does not find same results in the case of the public sector where he shows that long-term employment and seniority are increasing for both men and women. The author's explanation for these results is that the public sector has not been under the pressure of the free market as is the case of the private sector (Farber, 2008b).

Union membership seems to be a key indicator when studying job (in)stability. The increase in market flexibility is related to the crisis of trade unions in Western countries (Macías, 2003). As some authors point out, this crisis was due to the fact that such unions were unable to correctly represent the interests of a working class in continuous segmentation. Therefore, there has been a decrease in membership causing loss of influence in the power structures of the company (Ferner & Hyman, 1998; Polavieja & Richards, 2001). Macías (2003) describes three mechanisms in which unionism is crucial to understand job instability. In Spain, where there is a strong dualism in the labour market, one group argues that trade unions favour the other group at their expense. This weakens the sense of “community of interest” which is the social foundation of trade unions. Secondly, segmentation introduces greater costs in union organization which may cause loss of presence in some workplaces. Thirdly, flexibility may disrupt balance of power between employees and employers making it less prone for these last to unionism.

1.2.1. The Spanish case: outsiders and insiders

The Spanish case is one of the most atypical examples of flexibility in the European Union (Macías, 2003). It was during the 80s of the last century that Spain, due to international and internal pressures, opted for a strong dualization of the labour market (de Bustillo Llorente, 2002; Jimeno & Toharia, 1994). These transformations took place between late 1970s and mid-1980s. Spain’s economy was deeply restructured in order to adapt to an open market, which had a significant impact not only on the level of employment, but also on the distribution of employment across economic sector. By the end of the century Spain’s economy was based on the service sector with a total of 62 percent of total employment in that sector and accounting for 60 percent of GPD (Toharia et al., 1997). Moreover, from 1997 to 2007 the average annual growth in the construction sector was higher than 5% (Carballo-Cruz, 2011), which incentivized the expansion of the Banking sector. In late 2007, 14% of employment was in the construction sector and it represented 16% of the Spanish GDP. As Spain entered a global market, the process of globalization is fundamental in understanding the Spanish labour market. According to (Blossfeld & Mills, 2005) as cited in (Simó et al., 2006) "globalization is the driving force behind the decreasing employment in manufacturing and agriculture, combined with a simultaneous increase in service sector employment, the internationalization of economic activities, the growing demand for higher levels of education among employees, the increasing need for flexibility in industrial relations and, finally, the tension between labour market deregulation demands to protect labour". Authors show how unemployment rates are linked to international recessions and how the new Spanish regulations increased exposure to international business cycles. Unemployment rates have been increasing from 1970 and peaks can be found immediately after an international crisis (Garrido & Requena, 1995; Jimeno & Toharia, 1994).

During the Franco regime (1939-1975) it was very difficult to fire workers. However, with the opening to international markets, labour system was not efficient enough for competition and it ended up collapsing causing an economic crisis. This crisis caused a massive destruction of jobs -in 1976 the unemployment rate was 4.4% and in 1986 21.7%- ranking Spain among one of the countries with the highest unemployment rate in Europe. When the transition to democracy began, Spain underwent various successive labour reforms under an unstable political climate. The main market law was called the Worker's Statute in 1980 and it established unemployment and insurance system. This statue was two-folded, on the one hand, it gave prominence to the market but it also started developing the welfare regime to provide for social protection. However, Spanish economy was not prepared for open markets as its industry was obsolete and was too much based on agriculture. Moreover, the oil crisis also struck Spanish economy which caused that unemployment rates increased to be the highest of all European countries (Jimeno & Toharia, 1994).

In 1984, Socialist Party was elected, and a new reform of the Worker's Statute was introduced which included fixed-term contracts. Toharia & Malo (2000) argued that this reform brought a new form of labour market segmentation called 'flexibility at the margin'. This reform made it easier and cheaper to hire new people who were not entitled to the same job insurance as permanent workers; meaning that the Spanish market was to be very insecure for the new labour market cohorts, thus, promoting a dualization of the labour market. Therefore, labour market segmentation increased as insiders were the only ones who could participate in the collective bargaining process. In 1984, temporary employment was 10 percent of salaried labour force, but it increased to 33 percent in 1995 which was far exceeding EU average (Simó et al., 2006). Macías (2003) explains that such dichotomy was due to the existence of two opposing forces: on the one hand, a strong workers movement and a high level of social conflict; on the other hand, a very high level of unemployment and the strong impact of the global economic crisis. In order to minimize the impact on social tensions, it was decided that these reforms did not affect those who were already in the labour market. However, those people who joined it after the reforms, where affected by them.

Sala et al. (2012) studied business-cycle behaviour of segmented labour markets with flexibility at the margin in OECD countries. The authors propose a matching model which simulate steady states under different employment protection legislation scenarios to study market volatility. As a result of their investigations, the higher the firing costs are in permanent contracts, the more expensive it becomes to shed workers, and the lower the job-destruction probability. Also, the more difficult it is to hire a worker under a fixed-term contract, the lower the rate at which firms destroy temporary jobs. The authors main result is that stricter labour-market legislation (such as Franco's regime) the probability of finding a job varies a lot. The explanation for this variation, i.e., volatility, is that job creation becomes more sensitive to productivity shocks. However, it is worth mentioning that when the economy shifts from a scenario with strict labour-market legislation to a more permissive setting where firms might use fixed-term contracts with no firing costs, unemployment volatility increases.

In 1996 the right-winged party won the elections, and a new reform was introduced with its main focus to reduce firing costs and changing the functioning of the collective bargaining system. Though trade unions were given more power, this reform was not well accepted by them nor by employers. The first argued that worker's rights were cut off even more and employers declared that firing cost were not low enough. Further labour reforms have been passed but Spain is still a strongly dichotomized country with 27 percent of fixed-term contracts by the end of 2018 according to the Spanish National Statistics Institute.

Regulations in the Spanish labour market have introduced more flexibility at the margin which has caused an increase in job volatility and labour instability. In spite of government's efforts in promoting hiring on a permanent basis, there has been no reduction of the share of fixed-term contracts (Simó et al., 2006). Therefore, labour market is divided between insiders who have a stable job and low job volatility and outsiders who have a higher job volatility and are permanently looking for a new job (Auer & Cazes, 2000). These also have lower chances of receiving free or subsidized on-the-job training (Dolado et al., 2001) and, therefore, have less opportunities of job advancement (Amuedo-Dorantes, 2000). On the contrary, (Bentolila & Saint-Paul, 1992) show that insiders also show higher productivity than temporal workers. Simó et al., (2006) argue that job tenure is the key factor in Spain to have job stability and to gain professional promotion. Moreover, job security is vastly dependant on the type of contract: fixed-term or permanent which means that job stability is not the result of a specific human resources strategy. (Pitxer Campos et al., 2014) criticize the insiders-outsiders dichotomy as they believe that authors from this theoretical approach hide a policy-making justification. According to them, (Dolado et al., 2010) act as defenders of the establishment and propose a way to tackle temporality by proposing flexibility in the *insiders'* group as they have an excess in protection. We do not want to discuss whether this theoretical approach hides some obscure interests from the establishment, but we do believe as a fact the strong dualization of labour market.

This increase in job volatility since the mid-1980s did not affect in the same way to all social groups. Those who have suffered the most have been young people, women, and adults with low levels of qualification (Bentolila & Dolado, 1994; Dolado et al., 2001; Simó et al., 2006; Toharia et al., 1997). Thus, education is a key factor that plays an important role in protecting against job volatility. More educated individuals may achieve better job matches as they have greater search capital (Mincer, 1991; Spence, 1978), for instance, by being more likely to look for a job outside their country to minimise the effects of local shocks (Machin et al., 2012). Finally, (Delaney & Devereux, 2019) argued that more educated workers may adapt quicker to technological advances and/or have skills that are complementary to technology. However, the same authors discuss that overspecialization may cause those workers more prone vulnerable to specific shocks. Although their study is about earnings volatility and not job volatility it is obvious that they are closely related as people who suffer earnings volatility tend to also experience job volatility. These authors use standard deviation of wage adjusted by many factors as a measure of earnings volatility and find that higher education leads to lower variability in young workers. However, this is not the case for persons older than 40, therefore education attainment may have limited effect on job volatility for older generations especially due to the Spanish labour dualization.

In the above section we described Spanish labour's market dualization, however nothing was said about its relationship with gender inequality. As we have seen now, women face higher precariousness and inequality when competing against men in the context of labour market. As a result, there is a strong gender labour division and outsiders are mainly women due to their higher temporality and strong presence in fixed-term contracts.

1.2.2. Gender labour inequality

One of the most important contributions of feminism to social science has been the demonstration and visibility of gender inequalities in the labour market. Following this, our dynamic and non-dynamic compartment models to study (in)stability are partitioned by sex. To our understanding, and according to feminist theory, patterns in occupation versus non-occupation or outsider versus insiders may vary between women and men.

Our starting point is the acceptance of gender segregation in the context of labour market. Polavieja and Favra synthesise the theoretical controversies regarding the existence of gender segregation (Polavieja & Fabra, 2006). These authors describe two main competing perspective that try to explain this phenomenon. The first of them argues that gender segregation can be mainly explained by socio-cultural factors. Researchers describe that socialization is different between genders and this shapes occupational and career aspirations (Meulders et al., 2010). On the contrary, the second perspective claims that gender segregation is mainly due to economic determinants. According to them, cost-benefit (Thurow, 2017) and the consequences of human capital investments (Polachek, 1981) are of vital importance to understand differences between participants in the context of labour market regardless of their sex. These two perspectives can be framed into the long rivalry between sociology and economics as the former defends socialisation as a key aspect to understand labour market while the second focuses more on economic rationality (Swedberg, 1990). However, nowadays this dichotomy is weakening as sociologist are starting to use the rational-action framework as well as economist are using socialisation in their works (Polavieja & Fabra, 2006).

In the last decades Spain, as other occidental countries, has experienced a massive incorporation of women to labour market and a postponement of marriage that has led to a change in traditional gender labour division weakening the "male breadwinner" model. This increase in activity rates arrived late in Spain compared to other European countries due to the 40 years of dictatorship. Spanish labour force survey shows that activity rates were stalled from 1976 to 1985 in around 28.5. After then, activity in women increased to 34.2 in 1990, 41 in the year 2000 and 53.3 in 2021. However, (Santamaria et al., 2011) point out how females are a majority in inactive positions compared to males due to their presence in informal and caring jobs.

In this new context of women joining formal labour market, men start doing more housework than they used to; although women still assume the bulk of this labour (Bianchi, 2011; Bianchi et al., 2000). As women are still predominantly present in unpaid work but also have an increasing higher presence in the labour market, they may face a "second shift" (Hochschild & Machung, 1989). This means that after their paid job, women get home and work again at their household. Is in this context that some studies point out that parenthood is a key factor in unequal housework (Baxter et al., 2008; Gjerdingen & Center, 2005; Yavorsky et al., 2015) as females may leave market labour and shift to unpaid housework and caring. Interestingly, (Horne et al., 2018) studied household patterns during transition to adulthood, in young adulthood and in midlife and they found differences in average household work scores at later stages compared to early ones. Nevertheless, some authors have described increasing egalitarian couples are emerging in the twenty-first century. They argue that higher educational levels of the couple have been related to a more equalitarian distribution of housework (Bianchi et al., 2000) as well as the presence of gender values are also associated to equality in housework (Lück & Hofäcker, 2003).

Despite this gap is narrowing, there are still no significant changes in the conditions and structure of female employment (Kreimer, 2004). Even though participation of women is increasing, women still face labour segregation (Anker, 1998; Charles, 1992; Hakim, 1993; Torns & Recio, 2012) .

There are two types of segregation: vertical and horizontal. The first relates to the fact that women have limited career and income perspectives in comparison with men; while the second refers to the feminization of occupations in which women get jobs where many women are already employed. These occupations are usually worse paid, have a high level of part-time work and lower status compared to occupations with high proportion of males (Palacio Morena & Simón, 2002; Polavieja & Fabra, 2012; Treiman, 1981). Consequences of horizontal discrimination are two folded (Kreimer, 2004); firstly, within segregated structures it is more difficult to make comparisons due to female-dominated occupations are evaluated (and devaluated) as “women-specific”. Secondly, in these segregated occupations it is difficult to prove discrimination and there are also fewer opportunities to change job due to restricted specialization (Finder & Blaschke, 1999; Kreimer, 2004).

In Spain, labour precariousness affects both sexes but women, especially young and migrant women, face deeper precariousness and instability compared to men (Torns & Recio, 2012). Women suffer from a worse quality in their employment due to two crucial factors: type and duration of labour contract. According to (Torns & Recio, 2012) women accept part-time jobs not because they want to reconcile but because they are unable to find full-time jobs. According to the authors, part-time jobs could have been a solution for gender equality in order to distribute all work available if it was assumed by both sexes. However, part-time jobs are female dominated; for instance, in 2010 the percentage of females in part-jobs was four times larger compared to men (24.1% versus 6.1%).

Spanish labour market temporality showed a strong increase starting in 1980 mainly because of the demand from the service sector that they need this flexibility to have competitive prices (Pitxer Campos et al., 2014). These authors argue that reforms have had flexibility and, consequently, temporal contracts as the spearhead of labour precariousness. This flexibility, which is the intersection of temporality and short contract duration, is at the heart of gender labour precariousness as it affects women more than men and represents the low quality of female jobs.

2. Labour trajectories methodologies

We have discussed previous approaches to labour (in)stability and its relationship with working life expectancy from a theoretical point of view. As we focus on methodological aspects associated to Social Science research, we believe it is useful for the reader to understand the different methods available in order to introduce our proposal. Therefore, we proceed by describing the state-of-the-art approaches to study labour trajectories from a holistic perspective.

We will start by describing sequence analysis as the main classic method to describe labour trajectories. Furthermore, we will discuss recent developments that combine sequence analysis (SA) with Event History Analysis (EHA). Both *Competing Trajectory Analysis* (CTA) and *Sequence Analysis Multistate Model Procedure* (SAMM) weaken the holistic approach of SA to centre their attention in the effect of time-varying covariates and a previously defined subset of trajectories instead of whole sequences. *Sequence History Analysis* (SHA) focuses on the relation between past trajectory of an individual and the subsequent event. Finally, we will discuss model-based approaches such as multistate modelling and Markov models with or without latent perspective. Our aim here is to show how these methodologies have evolved from studying trajectories from a holistic point of view to a more micro perspective.

2.1. Event History Analysis

Social scientists are often interested in events and their causes such as job changes, promotions, or retirement. Event History Analysis (EHA), refers to the group of statistical techniques that study events occurring for individuals under observation (H. Blossfeld et al., 2014; Yamaguchi, 1991). This methodology is useful when researcher has longitudinal data and is interested in a particular event (i.e., first unemployment). According to Coleman (1981), EHA is a process which has three different elements. Firstly, there should be an experimental unit (individuals, companies, organziations, or whatever) moving along a finite number of states. Secondly, changes in states are not fixed which means that they are not restricted to predetermined points in time and, finally, variables affect this change of states. These are the variables that we are interested in knowing their effect in the process. For instance, we might be interested in studying the effect of an independent variable such as sex to understand if being female is a risk factor for unemployment compared to male. In this simple example, the experimental units are individuals that change state at any point in time and we study the effect of sex in these changes.

As described in the introduction, the lack of communication between disciplines or the necessity of quantitative social scientist to differentiate themselves from statisticians leads to duplicities when naming statistical techniques. Indeed, in statistics, EHA is known as Survival Analysis in which the focus is to analyse which variable or group of variables are associated to the time until the event of interest, normally death or progression from a disease. However, this same concept can be applied to social science in which the event of interest could time to the loss of employment. Indeed, Event History Analysis is the translation of Survival Analysis into Social Science but techniques such as Kaplan-Meierr curves with log-rank statistic or Cox regression remain the same.

Finally, it is worth mentioning that EHA is not limited to Survival Analysis but also to multistate modelling (see Section 2.6) therefore, EHA methodology is used to describe a statistical technique in which there is an, at least, one event of interest.

In conclusion, EHA and Survival Analysis are equivalent but EHA is also interested not only in explaining transitions from one state to another but also in time spent in each state. In statistics, multistate modelling and Surival Analysis are seen as two interconnected fields but this is not the case with EHA in which both perspetives are encompassed in it. As this thesis is not focused on Survival Analysis no exhaustive description of all techniques developed will be provided but more information on them can be found in H.-P. Blossfeld & Rohwer (2001); authors here describe nonparametric descriptive methods such as life tables, exponential transition rate models, exponential models with time-dependent variables (independent variables that change their value during the follow-up of experimental unit) or even more complex modelling such as models with mixture distribution.

2.2. Sequence analysis

SA is a data mining technique. It was first described in the field of Biology in order to compare two DNA strands to stablish a distance between them or, analogously, how similar are they (Kruskal, 1983). The first uses of SA in Sociology can be found in (Abbott, 1983) and (Abbott & Forrest, 1986). Although SA is considered a quantitative methodology, Andrew Abbott used it more from a qualitative perspective in the context of historical and narrative sociology (Brzinsky-Fay & Kohler, 2009). Slowly popularity of SA started rising with the development of computers with quicker processors that enabled researchers analyse longer and individual sequences. Moreover, statistical packages like Stata included this methodology in their software making its use more appealing. Many have been the applications of SA in Sociology to labour trajectories (Brzinsky-Fay, 2007; Elzinga & Liefbroer, 2007) even in the context of the Spanish labour market (López-Andreu & Verd, 2016; Verd et al., 2019).

The main idea behind SA is to compare individual sequences and stablish distances between them from a holistic perspective. We understand a sequence as the ordered collection of the states experienced over a period, typically observed at regular intervals (Piccarreta & Matthias, 2019). The distance between individual's sequences are not unique and various types of distance have been proposed. The main method for distance calculation is called optimal matching (OM). The idea behind it is that the distance of two sequences is increased by the number of operations needed to transform one sequence to the other. These operations can be the insertion of a state in a specific position, changing one state into another or delete a specific state. The result of this method is called the *Levenshtein distance* (Levenshtein, 1966).

Levine (2000) and Wu (2000) pointed out a crucial limitation of OM. The relative cost of each of the possible operations used to stablish the distance between two sequences is defined *a priori* by the researcher which leads to subjectivity due to nonexistent theorical criteria. Various modifications have been made on the original OM methodology in order to overcome its limitations (Aisenbrey & Fasang, 2010; Gauthier et al., 2009). Lesnard (2010) provides a dynamic modification of *Hamming distance* which is defined as the number of substitutions needed to translate one sequence into another. Lesnard's approach is to weight these substitutions according to the position in which takes place. Other limitation when calculating the distance matrix between all sequences is the presence of censoring and missing data. This problem derives from SA and not from distance calculations because SA focuses on the whole trajectory and not in a given specific period. The holistic nature of this method is incompatible with censoring or missing data as no distinction can be made between both and many dissimilarity criteria would treat as a new state. Halpin (2016) proposes multiple imputation methods in order to estimate the missing states and also develops a new methodology to treat them as *self-different*, however it is still the major limitation for using this technique (Aisenbrey & Fasang, 2010).

Nevertheless, various visual techniques have been developed to visualize the results of these trajectories such as parallel coordinate plot (Bürgin & Ritschard, 2014) or index plot and its extensions (Kohler & Brzinsky-Fay, 2005; Piccarreta, 2017; Scherer, 2001).

Once all distances are computed with whatever criteria for them is used, they are then grouped by traditional clustering methods to obtain similar trajectories. However, the number of typologies or clusters is yet to be decided and although many other methods have been described, it is not clear which of these are suitable for labour trajectories. It is worth mentioning that data driven methods may produce results that are meaningless for sociological theory. Moreover (Piccarreta Raffaella & Matthias, 2019) point out that literature does not yet offer tools for assessing the sociological validity of a typology-cluster, even though the obvious relevance of this matter. The authors suggest that it is necessary to define guidelines and procedures as is one of the most important challenges faced, not only by SA but particularly in SA.

Sequence analysis was firstly described as a holistic approach to identify typical trajectories, but it can be combined with other techniques in order to further describe factors that define these trajectories. Multinomial regression can be carried out by creating a new variable in the data with its values representing each of the different labour typologies. Therefore, for each individual, the dependant variable will be the type of trajectory based on the SA result and the independent variables will be those that the researcher considers to be factors that may be associated.

2.3. Competing Trajectory analysis

This method was developed by Studer et al. (2017) in the context of transitions to adulthood. The idea behind it is to study the trajectories that happen after the transition to one initial state. In their case, the transition of interest was adulthood and they studied typologies on trajectories. The method for doing it is two-folded, firstly, the calculation of typologies is done with SA but, in a second step, competing risk modelling is used to estimate the probability of suffering one path or another based upon baseline time-varying covariates selected by the researcher. This methodology is useful when the subsequence of interest starts with the same state (i.e., leaving parents' house) and when the duration of the first state is an important aspect of the trajectory.

2.4. Sequence analysis multistate model

This method was developed by Studer et al., (2018) in the context of women employment trajectories after the German reunification. As Figure 1 shows, SAMM and CTA are comparable procedures but with slight differences. The idea behind it is to study all fixed timed sequences following any change of state. As was the case with CTA, typologies of fixed-termed sub-trajectories are computed by means of SA. In a second step, a multistate model is applied to study the effect of time-varying covariates on the probability to start each type of sub-trajectory and time spent in each event.

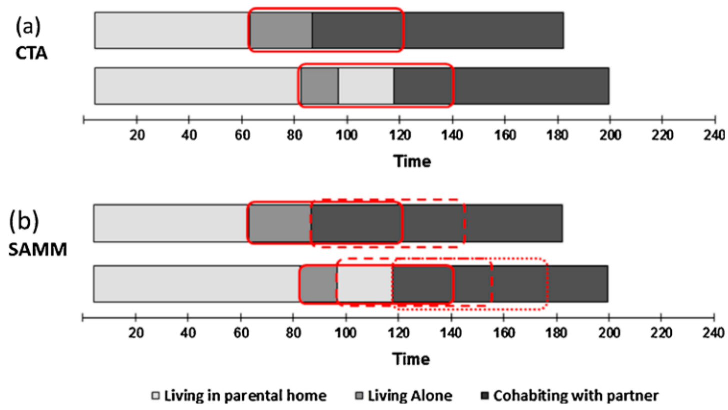

Figure 1 CTA and SAMM comparison. From (Piccarreta Raffaella & Matthias, 2019)

Moving away from the holistic perspective, as they focus on sub-sequences, SAMM and CTA methods may proof useful to anticipate for future trajectories and can be used from a predictive approach. They can account for possible anticipations of individuals to future trajectories. Moreover, they do not suffer the limitation of SA and can be applied to censored data, which makes them very useful for some studies such as trajectories to adulthood.

However, both methods do not really consider for past trajectories but, in the case of SAMM, only the state prior to transition is taken into account for the probability of shifting to a determined sub-trajectory. Moreover, explanatory variables for sub-trajectory prior to transition are not totally considered.

2.5. Sequence history analysis

In order to overcome the limitations from CTA and SAMM mentioned above Sequence history analysis was developed by Rossignon et al., (2018). This approach studies the probability of experiencing an event by means of discrete Event History Analysis modelling which includes a time-varying variable which accounts for past trajectories. Cluster analysis is applied to identify sub-trajectories up to each point with the idea that individuals may change trajectory. Therefore, individuals may shift from one sub-trajectory to a new one. This time-varying variable that indicates the sub-trajectory is finally included in the EHA model.

CTA, SAMM and SHA present methodologies to study non-recurrent events in which it may be more interesting to study sub-sequences than the whole sequence. However, work is still needed to further develop sub-sequencing when these are non-constant over time or when they are not easily clustered. Moreover, non-recurring is a limitation of them that can be addressed by multistate models such as the ones describe below (Piccarreta Raffaella & Matthias, 2019).

2.6. State change model

Multistate models (MSM) are useful to study events that may be recurrent, and the researcher interests' lies upon understanding time spent in each state and the probability of transition to it. More technically, MSM consist of a stochastic process where individuals move between a set of finite states. States can be absorbing, transient and recurring. Absorbing states are those from which individuals do not transitions, i.e, death; transient states are intermediate states between two different situations; recurring states are those where individuals can transition to them more than once. Figure 2 below shows an example of a multistate model with one transient state, one absorbing state and two recurring states. This MSM can be seen as an application of the theoretical perspective described in the subsection 4.2.1, with permanent workers as insiders and unemployed/inactive and fixed-term workers as outsiders. Permanent workers state is represented as an absorbing state where individuals have high job insurance as they cannot transition to unemployed/inactive or fixed-term. Fixed-term state is seen as a transient state to becoming insider or, on the contrary, unemployed/inactive. This state captures the job volatility suffered by individuals who are in this situation. As a final remark, some possible transitions are absent as it would make the model too complex and hard to estimate (Piccarreta Raffaella & Matthias, 2019): unemployed/inactive to permanent, permanent to unemployed/inactive or to fixed-term and job-to-job transitions. The first of them is highly improbable, the second and third are increasingly possible and of special interest in recent literature (Bachmann & Felder, 2018; Boswell & Gardner, 2018; Haltiwanger et al., 2019).

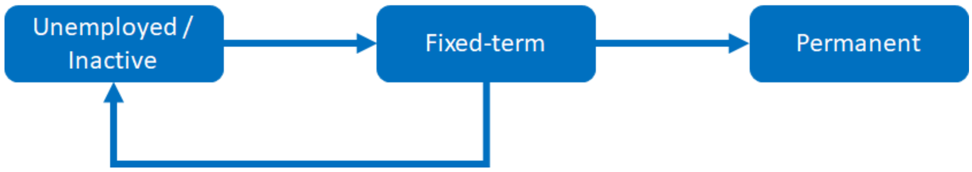

Figure 2: Multistate model example with three different states

The probability of transition is normally based on a Markov process or chain. A Markov process describes that the probability of transition to a new state is totally defined by the present state. However, many variations exist of a Markov chain such as that the future state is not only based on the present state but of the *m* past states. This Markov process is known as a Markov process with memory or a Markov chain of order *m*. The following methods are all based on first order Markov chain.

State change model (Bonetti et al., 2013) is a parametric model for the analysis of discrete time sequences of a finite number of states. Authors describe that the main interest of this model is to study the time to the next transition from a particular state taking into account past information. Therefore, conditional probability of a transition occurring is calculated as a function of covariates, time in previous state and age at the time of transition through multinomial logistic regression. Although recurring states can be calculated, it is not possible to study state-to-same-state transitions as this model conditional probability is based on transition from a past different state.

2.7. Latent Class Analysis

First, we must introduce what is understood by *latent*. The following models are based on this principle which postulates that there is a *latent* structure underlying observed sequences. This structure must identify main characteristics of trajectories filtering out individual variability that are due to the probabilistic relation between latent and observed states. In a more intuitive way and in the context of life courses, Billari & Piccarreta (2005) describe a latent structure as "the plans and/or decisions taken at different stages of life, resulting in the experience of specific observed states".

Latent Class Analysis (Barban & Billari, 2012) is used to identify typical, i.e., homogenous, patterns in life trajectories called classes. These classes are not observable (latent) but individual membership can be understood with observed data through likelihood function. Authors point out an important limitation of this technique as it treats measurements of a same variable across time periods as independent and therefore Latent Class Analysis does not account for correlation between time-dependant variables.

2.8. Hidden Markov model

The main idea in Hidden Markov models (HMM) is that the current state is guided by a latent variable that follows a Markov process. Therefore, instead of modelling the stochastic process of variable of interest - market labour dualism in our example- it might be more realistic to suppose that there is an underlying, i.e., latent process, in the form of latent variables that modulate observed states (Bolano et al., 2016). This categorical latent variable can change over time following a Markov process of first order. Each of the possible states of this latent variable are known as hidden states. Figure 3 shows a graphical representation of Hidden Markov model. S_1 denotes the first observed state for a given individual, followed by S_2 as the second observed state and S_T as the last observed state. L_1 is the first unobserved, i.e, latent, state for a given individual, followed by L_2 as the second latent state and L_T as the last latent state. Arrows between unobserved states denote the probability of transitioning to a new state conditional to the present state at a given time *t*, $P(L_t|L_{t-1})$; this is a first order Markov process. Arrows connecting latent states with observed states are the probability of observing an actual state at time *t* given the emission probability of the latent state at that same time *t*, $P(S_t|L_t)$.

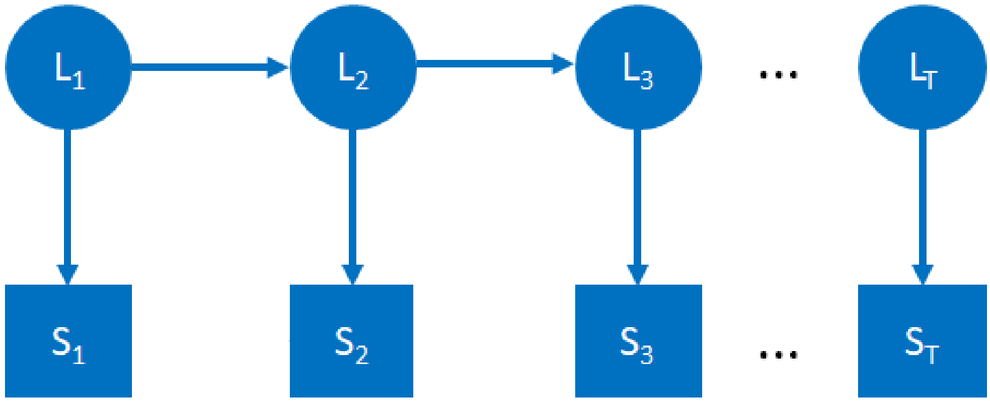

Figure 3: Graphical representation of Hidden Markov Model

2.9. Mixture hidden Markov model

As show on the above figure, there is no latent classes meaning that unobserved heterogeneity is considered negligible and can be ignored. However, Mixture hidden Markov models (MHMM) do not assume this, and individuals are partitioned into groups and the sequences inside each class come from class-specific HMMs (Helske et al., 2016). Therefore, MHMM is a generalization of HMM where the number of classes can be greater than one. This model assumes that a population can be grouped into clusters (latent classes) according to having similar patterns. MHMM consider varying sub-models for each cluster and transitions between clusters is not allowed. This method was first proposed by (de Pol & Langeheine, 1990) and later developed to include time-constant and time-varying covariates by (Vermunt, 2008). This last author was responsible for naming the method as MHMM.

All multistate methods described here use first order Markov process and therefore assume that all past information is summarized in the last visited state which is a strong assumption. This limitation has been tackled from two perspectives: testing significance of covariates dealing with duration of current state or last entered state and higher order Markov process.

Moreover, these methods rapidly increase their complexity when the number of possible states or transition increases. It is worth noting that increased complexity does not mean that a model is better from a sociological point of view. There is always a need for compromise between social theory and the statistical approach in the sense that higher complexity models tend to overcomplicate sociological understanding (Piccarreta & Matthias, 2019).

2.10. Working life expectancy

Job volatility is a great risk for society and its effects may be of great concern in other structures such as the pension system. Europe's population is in continuous expansion and because of this, people live longer. This increase in life expectancy has drawn attention from policy makers as it may have an important impact on the financial burden of the country. One of the arguments that we can hear is that the increase in life expectancy must be linked to an increase of official retirement age in order to mitigate the pressure on the pension system. However, to what extend has there been an increase in economic activity?

It is necessary to create an index which is capable to show how many years' people spend economically active. (Siegel, 2002) describes a table of working life as: "(...) a table of working life is constructed as a type of double-decrement table that, in addition to death, incorporates the effect of net rates of labour force entry and net rates of labour force exit". Therefore, this table, as in life expectancy, can be calculated for any year. This concept has received many different names such as: labour force expectancy, work-life expectancy, labour market life expectancy or active life expectancy. As (Loichinger & Weber, 2016) suggest, active life expectancy has vastly been used in the framework of health research and therefore we refrain from using it. From now on, working life expectancy (WLE) will be the term referred as the result of working life tables described by Siegel (2002). Therefore, WLE is the number of years an individual is expected to be economically active, which includes time spent in unemployment or employment. Moreover, WLE will decrease if entry to labour market is delayed while it will increase if retirement age is expanded. Other authors such as Nurminen (2000) use WLE as a measurement of time spent only in employment which is unable to account for time spent in unemployment, hiding the whole picture of the labour market. However, we argue that in societies where there is a high variability in employment rates, both types of life expectancy should be described. This is the case of Spain and, in order to differentiate both expectancies, we will use working life expectancy when using activity rates and employment life expectancy (ELE) otherwise.

Two main approaches have been described to calculate WLE, the Sullivan method (Sullivan, 1971) and by means of multi-state methods. In Europe, examples of WLE can be found in Finland (Leinonen et al., 2015; M. M. Nurminen et al., 2005), Spain (Dudel, 2018a; Dudel Christian and López Gómez, 2018), UK (Butt et al., 2008; Haberman & Bloomfield, 1990), Denmark (Hoem, 1977) and Netherlands.(Liefbroer & Henkens, 1999). (Butt et al., 2008), Dudel (2018) and Hoem (1977) are the main resources of the methodological approach of multi-state models to WLE while the rest of them apply this methodology or Sullivan's method to data in their respective countries. Dudel and López-Gómez (2018) findings showed that the Great Recession has had a strong impact on working trajectories in Spain and that WLE has rapidly declined. The authors point out that this reduction varied significantly by occupational category and gender. Leinonen et al., (2015) studied WLE for men and women at the age of 50 in Finland. They found out that WLE was higher in women than men with an estimated working life expectancy of 10 years versus 9.1. Moreover, the authors pointed out that the effect of education had a strong impact in WLE. However, studies carried out in USA show higher WLE both in males and females at age of 50 with 12.7 years and 11 respectively (Dudel et al., 2016) and, again, strong impact of education (Skoog & Ciecka, 2010).

Finally, it is important to take into consideration what are the causes of the decrease in WLE in Spain as it is not clear to what degree is due to a compression of working life or to unstable career trajectories. As, (Juan J Dolado et al., 2013) explain, this compression may be due to the fact that young Spaniards enter the labour market later in an effort to avoid unemployment, especially during recessions. There is no clear association between earlier exit of the labour market and the decrease of WLE. It seems that people use to retire earlier through disability programs rather than old-pensions as they were more generous and less restrictive but new reforms have made this retirement scheme less attractive (Benavides et al., 2014; García-Gómez et al., 2012). Moreover, (Becerra & Castello, 2012) showed that probability of early retirement is still very low for Spain. (Dudel, 2018) described that the length and average number of spells of temporary withdrawal from the labour force has increased, meaning that there has been an increase in unstable or volatility in career trajectories. Other authors show that there is evidence for both effects in WLE compression (Congregado et al., 2011).

2.11. Conclusions and alternatives

In Chapter 1 and 2 we have described the main methodologies for labour trajectories and the theoretical framework in which these are developed. In the first section we focused on the economic categories according to the National Statistics Institute and the public services and its importance in the context of labour market. After this, we studied the main theories behind labour (in) stability and its link to working life expectancy. We related this volatility to Spain by presenting the strong dualism of the labour market in which outsiders have worse conditions than insiders which enjoy a more stable career.

The methods presented here are focused in different aspects of labour trajectories, MSM and HMM describe the transitions and weaken the holistic perspective. On the contrary, SA and LCA provide a holistic perspective as their main interest is the trajectory as a whole. Between them we can find combinations of SA and EHA that focus on sub-sequences. The criteria for choosing one method or another should be based on the researcher's primary endpoint. Although it must be kept in mind that the methods presented here are in increasing complexity, especially Markov-based models which present a challenge for researchers as their mathematical apparatus is not well-suited for everyone.

In the following Chapter we propose a multistate method which is not focused on probability of transitioning but more on the *speed* of these transition by means of estimating differential equations. Compartment models are well known in epidemiological science but, as we will describe, applications to life trajectories are scarce. These models may proof useful to provide a general picture of trajectories from a different perspective which can have a higher interpretative power and easier modelling than Markov chain models. Moreover, this method is easier to calculate and provides a holistic perspective of labour (in)stability which allows comparisons between cohorts but also between gender or education attained. The simplicity of compartment models is the fact that enables researchers to apply this methodology not only longitudinal data but also cross-sectional data.

3. Materials and methods

"All models are wrong, but some are useful."

George Box (2009), Statistical Control by Monitoring and Adjustment

This chapter is divided into three parts. In the first part we will describe the sample used, as well as the process of data cleansing. The second part will explain the methodology used, emphasizing the logical process in which we developed the Bayesian dynamic compartment model. Finally, we describe the method used in order to calculate life expectancy using cross-sectional data.

3.1. Data: Continuous Samples of Labour Trajectories

The continuous sample of labour trajectories[4] (MCVL) is the result of the collaboration of Social Security, the National Statistics Institute (INE) and the Tax Agency (AEAT) in Spain. The data is an anonymized extract of one million people who were enrolled in Social Security in a specific year. Records for individuals include information from the Municipal Register and the annual summary of income and withholdings on account of the IRPF from Model 190 of the AEAT.

As shown in the methodology of the MCVL (MTAS, 2017), data were drawn at random from those who were affiliated or pensioners in 2013. In addition, historical data are offered for the million people included and, when possible, of their relationship with Social Security. There are two existing criteria for being eligible to the sample. First of all, it is mandatory to have an individual identification document (NIE or NIF) because sampling is based on a random selection of all NIEs or NIFs. Simple random sampling is used to select 4% of all possible numbers. Second, selected individuals must be part of the reference population in the year considered (2013 for this project). Individuals who fit into one of the following cases are excluded from MCVL:

- Registered with Social Security only to receive healthcare.

[4] The original name for the data used is *muestra continua de vidas laborales.* However, here we translated it into English.

- Non-contributory or welfare pension recipients.
- Those within social security systems other than Social Security.
- Jobseekers who do not receive unemployment benefits.
- Recipients of "Active Insertion Income", which is a state unemployment benefit of over 451 euros per month.

In addition, it should be taken into consideration that historical data are not sufficiently reliable for those who joined labour market before 1966, since the methodology indicates that their records may be missing. This is the main reason why, although we have information about people born even at the beginning of the 20th century, only those people born in 1950 and not before are eligible.

The MCVL comes from an administrative database and has certain characteristics that must be indicated. An administrative record is defined as any record resulting from fiscal, tax or other needs, created for the purpose of making the administration of government programs feasible or for overseeing compliance with legal obligations of a company. For its use in statistical purposes, it is necessary to evaluate its conceptual and methodological basis, classifications, coverage achieved, variables investigated, quality of responses, data processing and frequency of availability of them (Feres et al., 2001).

Continuing with Feres et al., (2001), there are various inconveniences that may arise while working with an administrative database instead of a statistical database. Let we describe some of these disadvantages that the author defines when working with these types of records:

1. Lack of correspondence between the definitions of administrative and statistical units that may require some kind of transformation.

2. Differences in the definitions of the variables. This disadvantage is particularly important since, as described in the last chapter, the definition of being unemployed, inactive, or unemployed differs according to the agency or discipline.

3. Different classification criteria. Sometimes the classifications require some type of conversion because it is not useful in the context of a carried-out project.

4. Temporary availability and referential period of the data. Fortunately, in our case, the reference period and its availability has not been a problem for this study.

5. The authors mention that public administrative databases may be politically conditioned by the political party in power. Sometimes, it can be modified by a purely political decision (Feres et al., 2001). An example may be the methodological change of the definition of unemployed in INEs Active Population Survey in 2002.

3.1.1. MCVL organization

The MCVL data has a complex organization as shown in Figure 4.

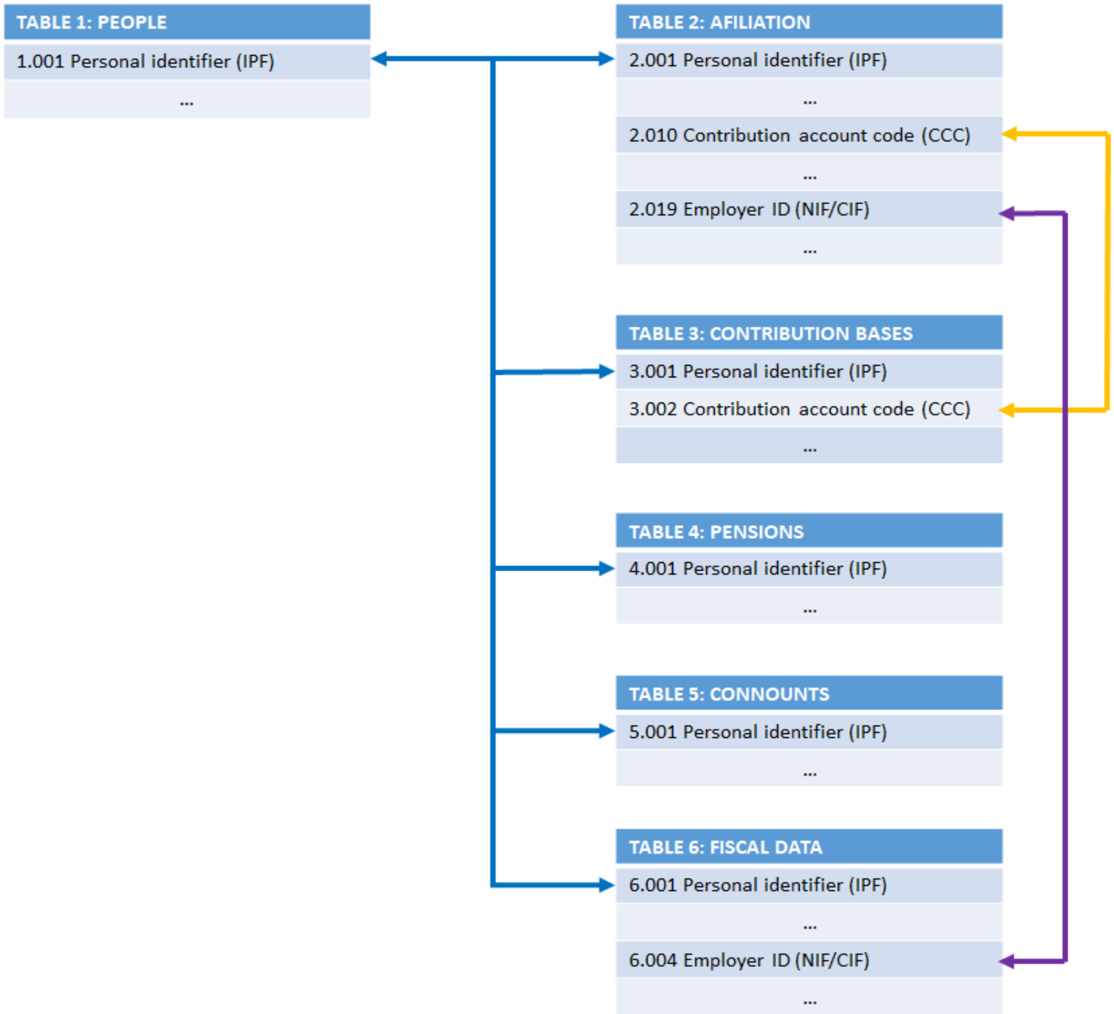

Figure 4: Structure of the Continuous samples of labour trajectories. From (MTAS, 2017).

We observe how there is a common primary key for the six tables. This key is the Individual identifier (IPF) that, in short, acts as a DNI or NIE. However, for this study only two tables will be used: table 1 and table 2 (people and affiliation). Table 1 (people) contains information regarding demographic characteristics of each individual. Therefore, each row is a different individual, and, in columns, there is the demographic information. This table includes sex, date of birth, nationality, and educational level among others. Table 2 (affiliation) shows episodes of Social Security affiliation. This implies that for each individual there is a row for every episode of affiliation they have experienced. Both tables are linked together with IPF as primary key (blue dual-direction arrow). Therefore, unlike Table 1 in which there is only one row per individual, in this table we have multiple rows. That is, if a person has had 4 episodes of Social Security affiliation, then we will find that this individual will have four rows in Table 2.

3.1.2. Data importation

In this subsection we will describe the process of importing the tables for analysis, as well as an initial exploration of the data. It has been decided to describe the process because it has been a fundamental part of this work given the complexity of the sample and the problems that arose from it. Figure 5 shows the pipeline of the importation and exploration process of the MCVL.

The process of importing and preparing the data for analysis took around six months. The two tables were delivered subdivided into several text files, and these were imported initially into *SPSS* (version 24) where all variables were labelled. Total sample included 1 million participants; therefore table 1 consisted in this number of rows. However, table 2 was delivered in four separate files with each around 7 million rows. It was decided to use *SPSS* because it has better memory management than *R* when importing large volumes of data. Therefore, importation proved to be faster by avoiding running out of RAM. Once the data was imported, descriptive statistics was used to study its consistency. This was done based on common sense: sex variable can only have two possible values, just as age has to be in a plausible range.

Once the database was free of inconsistencies, we proceeded to import the data into *R*. It was necessary to combine the information from affiliation episodes from Table 2 with sex, which can only be found in Table 1. Thus, sex was included in the affiliations table, using the IPF as primary key.

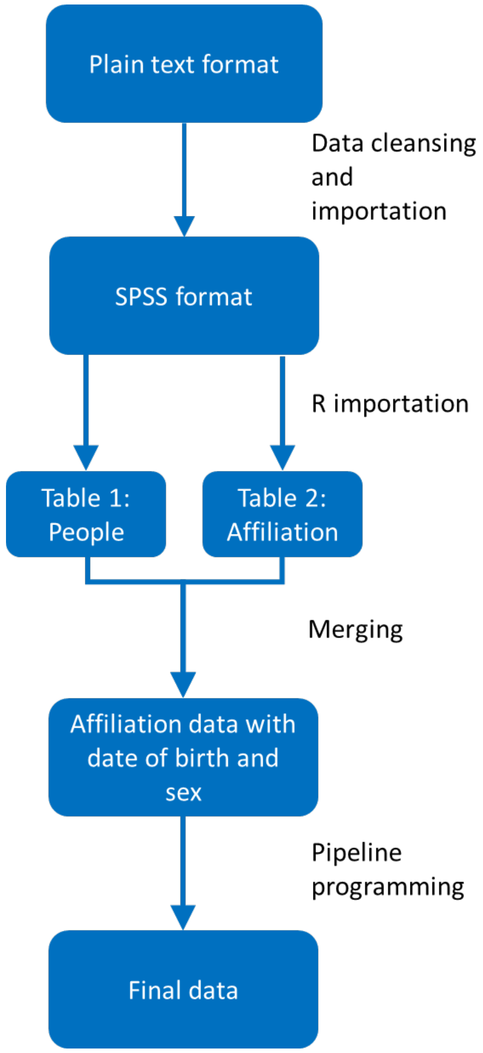

Figure 5: Flow diagram of data preparation.

After merging and checking the data for inconsistencies, the next stage in the preparation of data for its exploitation began. The affiliations table has information about the periods that a person is affiliated with Social Security; that is, if an individual is working as fixed-term or permanent. However, there is no information on periods of inactivity or unemployment[5], so it was necessary to fill in those gaps in the working life of each individual. It was decided to use *pipeline programming*, since it is much more efficient than using *for* loops and in this case, it was not possible to use the *apply* functions (Wickham & Wickham, 2018).

[5] If an individual receives unemployment benefits, then the affiliations table will reflect this. However, if a person is unemployed without receiving any subsidy, then they will not appear in table 2.

The aforementioned method was also necessary for the next stage of data preparation. As described in Chapter 2, two models were analysed as proxy of labour (in)stability: employment versus non-employment and outsiders versus insiders. For the first model, we study those people who entered labour market - labour market cohorts - quinquennially from 1970 to 1990. For every cohort, we counted how many people were employed and non-employed each month. Visually we have as many rows as months studied (from entrance to January 2014) and two columns representing number of employed and number of non-employed. Finally, those values were divided by total number of people that entered labour market in the date of entrance. As every cohort had different total number of participants, we decided to use proportions instead of absolute values so we could compare results between cohorts. Analogously for model 2 we have three columns (fixed term, permanent and others) instead of two. As discussed in Section 1.2.1, Spanish labour market is highly dualized; in order to reflect this, we understand that individuals with permanent contracts have a more stable position in labour market and could be considered as insiders' while the rest could be classified as outsiders. However, in the study of this second model we analyse entrance to market labour cohorts from 1991 to 2003 and were followed for 10 years. This selection was based on the limitation of the MCVL which describes that information regarding "type of contract" was not available before 1991 because its declaration on labour contracts was not mandatory (MTAS, 2017). Moreover, we decided to follow these cohorts a fixed amount of time -10 years-, to be able to compare them.

3.1.3. Software used

Five software were used in the analysis, two of them have been already mentioned: *SPSS* (Corp., 2016) and *R* (R Core Team, 2019). *Matlab* (MATLAB, 2019) was also used in order to solve linear ordinary differential equations in the framework of compartment models. *WinBUGS* (Lunn et al., 2000) was used to approximate the posterior distribution of the parameters for the compartment model of employed/non-employed (model 1). Finally, *JAGS* (Plummer & others, 2003) was used in the Bayesian modelling of insiders versus outsiders (model 2). The reason for using this last software was that it is easier to implement inside *R*, especially in the context of complex models. *JAGS* could have been used for all this thesis dissertation but at the beginning of the analyses the experience with this software was not strong enough.

3.2. Bayesian and dynamic compartment model

In this section we will describe compartment models from their origin in epidemiology and pharmacokinetics to their later developments with Bayesian estimation and our approach: Bayesian dynamic compartment models. The first subsection "Classical compartment models" will introduce us into the basics of compartment models as a mathematical tool to approximate complex problems, i.e., volatility. Afterwards, we will describe the Bayesian approach for parameter estimation. Then, building on the Bayesian methodology, we will argue that further research is needed to overcome its limitations and we will provide a new methodology for a time dependant Bayesian parameter estimation.

In this work we will provide two models as proxy for labour (in)stability. The first model we propose is a non-dynamic approach Bayesian compartment model for employed and non-employed. Moreover, outsiders and insiders of the labour market will also be studied using a non-dynamic Bayesian model. This will help the readers understand compartment modelling and will serve as introduction to a more complex dynamic modelling. Finally, this thesis will feature a dynamic Bayesian compartment model of employed versus non-employed. Unfortunately, we are unable to provide a dynamic approach for outsiders versus insiders due to limitations of follow-up in our sample; this will be furtherly discussed in the last chapter. Moreover, gender stratification will be done to show differences in volatility between males and females both in dynamic and non-dynamic Bayesian compartment modelling.

3.2.1. Classical compartment models

Compartmental models are mathematical tools that have been mainly used in the design of infectious diseases. These mathematical models explain how an object or system of objects will behave (Keeling & Rohani, 2007a). In epidemiology, these models serve to predict the dynamics of an epidemic based on the knowledge about it. When formulating a model, three related aspects that compete with each other need to be taken into account: precision, flexibility and transparency. Accuracy refers to the possibility of reproducing the observed data and its prediction power. Although it is always desirable to have high accuracy there are drawbacks to in doing so, as increasing accuracy usually implies increasing complexity. This is the process of including new factors, i.e., parameters, in the mathematical model. For instance, to increase the number of components that influence labour market. One of the problems that arises from having high complexity in a model is the high computational power needed to estimate all parameters involved. In addition, when we have excessively complex models we can fall into the lack of transparency, that is, the ability to understand numerically or analytically how the components of the model are interrelated. Normally, reducing complexity increases flexibility but, on the other hand, accuracy is lost. Finally, the flexibility of a model refers to the ease with which the model adapts to a new situation. This flexibility is important in models that try to explain dynamics that are very changing, such as the unemployment of a population.

Mathematical models can accomplish certain endpoints but unable to do others, we will first describe what they are capable of doing. Prediction is one of the great advantages of these models but, as mentioned earlier, high precision is necessary for it. Prediction allows the development of policies that anticipate an event that could be catastrophic for a population: if we have several different models that all point us towards the emergence of an epidemic, we could take appropriate measures to reduce its risk to a minimum by, for example, launching a vaccination campaign. Even if one has precise predictive models, it may happen that there are some areas in which the model is not able to predict correctly which implies that specific measures may be needed to tackle this behaviour. In this context, the proposed model can be improved with new factors that may be important and that had not been yet considered.

Although these models have been carried out mainly in the discipline of epidemiology, it should be noted that they may be applicable to other cases. The application of this type of modelling to other fields of science is one of the greatest attractions of this work. We will show how compartmental models may prove useful in studying labour market trajectories and, more precisely, labour volatility in Spain. It is worth mentioning that it is not the first time that these models have been applied to disciplines outside epidemiology. This is the case of Santonja et al. (2008) who, in the context of political science, studied the pressure of radical ideologies in the Spanish society. However, to our knowledge there is no evidence that compartmental models have been used in the study of labour market dynamics. Moreover, we could not find any article worldwide in which Bayesian compartment models were applied to Sociology. This finding is particularly relevant as the application of this novel methodology might reveal new dynamics in the study of labour market.

These models also have limitations, it is impossible to achieve a completely accurate model because, in the case of labour market dynamics as well as in the rest of studies, there is always some unknown aspect which is not included. There are factors that we cannot control because they are too complex or unknown as only a sample is available. Let us return to George Cox's quote in 1976: "all models are wrong, but some are useful." Indeed, we will never find the *correct* model capable of explaining and predicting perfectly but, given the impossibility of achieving it, we are looking for one that is useful enough for us.

There are several methods that allow us to estimate parameters of a compartment models. Least squares (LS) method has been the main one. The idea behind this method is to find parameters that yield predicted values are close as possible to observed data. Mathematically speaking:

$$min \sum_{t=1}^{T} (O_t - E_t)^2. \tag{3.1}$$

The idea behind LS, as shown in Equation 3.1, is to estimate parameters that minimize the square root sum of differences between observed and estimated data with O_t being the observed data in a time t and E_t the estimated value at the same time t

using LS estimates. In linear regression this estimation is straight-forward but in compartment models we have nonlinear equations which need more complex iterative algorithms. Some of the algorithms for the resolution of least squares in nonlinear models are the Gauss-Newton, the Golub-Pereyra for partial least squares models, or the PORT algorithm proposed by (Gay, 1990). This method has proven to be more useful than the rest because it allows restrictions in the range of possible values of the parameters.

However, the use of least squares method has certain disadvantages and there are other methods, which we will see below. This method assumes that at each time the stochastic variation is always the same and that it is distributed normally. However, this is not necessarily true in our data. That is, if the assumptions of Normality or constant scedasticity are not met, the results obtained by the least squares method could give biased results. It is also assumed that the observations at each time are independent, but this is not usually true in the case in longitudinal data such as these since the observations of the following month is correlated with the previous one.

3.2.2. Bayesian approach

Another method of estimating the parameters is through the so-called maximum likelihood method (ML). Its objective is to maximize the probability of observing data given a prediction model. For example, we can have a model that predicts that the proportion of employed must be 0.4 but our data indicates that this proportion is 0.8. We would have the probability (likelihood) of observing 0.8 is very low if expected is 0.4. However, the probability of observing 0.8 if the expected value is 0.85 is higher (more likely) than in the previous case. As we will always work with proportions, we wanted to show with the previous example that the best value of the proportion will be the one that maximizes the likelihood of the observed value in the data.

The likelihood function is defined for a random sample (iid) $X_1, \dots, X_n$ of a population with distribution function $f(x|\theta_1, \dots, \theta_k)$ as:

$$L(\theta_1, \ldots, \theta_k | x_1, \ldots, x_n) = \prod_{i=1}^{n} f(x_i | \theta_1, \ldots, \theta_k). \tag{3.2}$$

Sometimes it is preferred to work with the logarithm of the likelihood function of the Equation 3.2: $log(L(\theta|X)$, because it is preferred to the derivatives from sums rather than from multiplications (Casella & Berger, 1990). Under very general conditions the ML estimate is consistent and asymptotically efficient, so that it converges in probability to the parameter that is estimating and is able to achieve the lower limit of the variance (Owen, 2008).

To apply the ML method, we first need to assume a distribution for our data. As described before, in each month we have the proportion of people in a certain situation (employed, unemployed, fixed time, etc..), so the distribution should be one with values bonded between zero and one. Two distributions that satisfy this requirement: *Beta distribution* or the *Binomial distribution*. We are more interested in the first because, firstly, total population varies across each cohort and, secondly, because the extra parameter from *Beta distribution* allows a better estimation of variance.

However, for some cohorts, ML and LS methods somehow failed to converge or yielded estimates were not in concordance with social theory, i.e., values too large or too small. As Piccarreta Raffaella & Matthias (2019) pointed out, there is a need for coherence between Sociology and Statistics and this methodology seems to be inconsistent with the first. We need to improve the estimation process by providing some guidance in the parameter values. This can be achieved with a Bayesian approach by including prior information in the model.

In statistical inference, two clearly different approaches or perspectives can be found: frequentist and Bayesian. To illustrate the difference between these two methods, let's say our model has two parameters to be estimated: a and b. After the estimation via ML, we will also have their respective confidence intervals. It is very common to fall into the error of considering these estimations to have a probability of

95% of being within the interval but this is not correct. In classical (frequentist) theory the parameters a and b are considered fixed and, normally, of unknown quantities, so it makes no sense to assign probabilities to the parameters. The 95% confidence applies to the interval not to the parameter, so it is correct to say that there is a 95% chance that the interval contains the true value of the parameter. However, in Bayesian statistics the parameters a and b of our model are considered random, and we express their uncertainty before considering the data in terms of a priori probability by assigning a prior distribution to these parameters. We use the Bayes theorem to obtain the posterior distribution of a and b by using a prior distribution of the parameters and the likelihood of the data. However, these two perspectives have not been exempted from conflict and there has always been a certain rivalry. Frequentists criticize some aspects of Bayesian inference, mainly, the subjectivity involved in the prior distribution. It is the researcher's decision to use his knowledge in assigning a prior distribution to the parameters and this has been criticized because of the arbitrariness involved in doing so. A way to overcome this limitation is to use non-informative priors. However, current practice is to use priors which are vague or little informative; this has been the approach in this thesis.

Bayesian statistics already has many years of history, but it was not until the late eighties when it started to be taken as a practical alternative to classical theory. Moreover, it is during the beginning of this century when it has experienced its greatest growth, coinciding with the development of new methods for estimating posterior distributions and the great computational power of personal computers. These methods have evolved greatly in recent years since the first of them with the (re)discovery of Monte Carlo methods using Markov chains (MCMC) (Gelfand et al., 1990; Gelfand & Smith, 1990), to the Integrated Nested Laplace Approximation (*INLA*) proposed by (Rue et al., 2009). Another of the main reasons for the rise of Bayesian inference was the appearance of software such as *WinBUGS* or *JAGS*, both of them used in this work that allows the generation of samples from the posterior distribution of the specified model.

As a very basic example of Bayes theory, consider we have two possible events A and B, assuming that $A = A_1 \cup \dots \cup A_n$ where each $A_i \cap A_j = \theta$ for $i \neq j$, then Bayes theorem expresses the conditional probability of A_i given B with the following expression

$$P(A_i|B) = \frac{P(B|A_i)P(A_i)}{P(B)} = \frac{P(B|A_i)P(A_i)}{\sum_{i=1}^{n} P(B|A_i)P(A_i)}. \tag{3.3}$$

Or more generally,

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)} \propto P(B|A)P(A). \tag{3.4}$$

The logic behind Bayesian statistics is that it is based on Bayes's theorem presented in equations 3.3 and 3.4, offering a probabilistic learning mechanism from the data (Smith et al., 2001). After observing the data $(y_1, y_2, \dots, y_n)$ we can calculate the posterior distribution $f(\theta|y_1, \dots, y_n)$ combining the prior distribution of the parameters and the probability distribution of the observed data, i.e., likelihood (Ntzoufras, 2008).

Finally, the posterior distribution $f(\theta|y)$ of the parameters θ given the observed data is defined, following Bayes's theorem, as:

$$f(\theta|y) = \frac{f(y|\theta)f(\theta)}{f(y)} \propto f(y|\theta)f(\theta), \tag{3.5}$$

With $f(\theta)$ the prior distribution of the parameters and

$$f(y|\theta) = \prod_{i=1}^{n} f(y_i|\theta), \tag{3.6}$$

the likelihood. Using this posterior distribution, we can estimate this parameter.

Employed versus non-employed

As mentioned earlier, these models were designed to study the dynamics of diseases in a given population. Some examples are the Susceptible-infection (SI) model or the Susceptible-infection-susceptible (SIS) model. In the first of them each individual goes from susceptible to infected and they no longer become susceptible again or recovered because disease is fatal and ends in death, it is also known as the fatal infection model. The second of them, SIS, is analogous to our approach which is shown in Figure 4. The SIS model is one that has two compartments: S and I. These models differ from the previous in the fact that they do not model infections that end in death. The SIS model is often used in sexual diseases and in many bacterial infections (Keeling & Rohani, 2007b)

Figure 4 describes our general model where we have two states (employed and non-employed) and two arrows that indicate the flow between each of them. In this work we will study market labour entrance cohorts, quinquennially, from 1970 to 1990 and we will be following them until 31/12/2013 as well as comparing by sex.

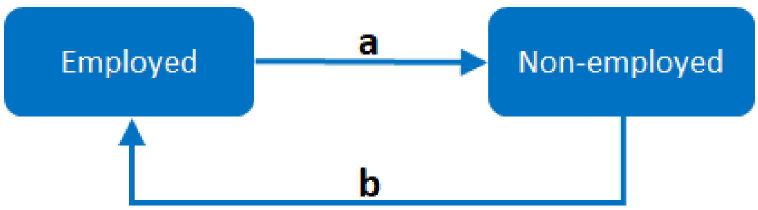

Figure 6: Compartment model for employed and non-employed

Let E_t denote the proportion of employed in a given time t and N_t the proportion of non-employed $(1 - E_t)$ in the same given time t. Then this compartment model can be described algebraically as the following system of Equations:

$$E_{t+1} = E_t - aE_t + bN_t, \tag{3.7}$$

$$N_{t+1} = I_t + aE_t - bN_t.$$

The first equation in 3.7 describes that the proportion of employed next month (E_{t+1}) is equal to the proportion in the current month (E_t) minus those who exit employment to non-employment (aE_t) plus those who enter employment (bN_t). The second equation describes that the proportion of non-employed next month (N_{t+1}) is equal to the proportion in the current month (N_t) plus those who fell into non-employment in that time t (aE_t) minus those who entered employment (bN_t).

These two equations can be rewritten as a LODE system as shown in Equation 3.8.

$$\frac{\partial E}{\partial t} = -aE + bN, \qquad (3.8)$$

$$\frac{\partial N}{\partial t} = aE - bN.$$

The two parameters that we are interested in estimating are a and b. The first one describes the speed of transition from employment to non-employment and may be a sign of job instability in case of being excessively high. The second parameter indicates the speed in reverse direction. A high value in a given population would mean that there is high flow from non-employment to employment and, therefore, could be a positive indication as people find a job quickly. In conclusion, it would be desirable to have low values of a and high values of b. That is, low transmission to non-employment and high transmission to employment. It should be considered that we work with closed populations, so that individuals can be determined in one of the two compartments. That is, there is no entry or exit of individuals from the system, therefore, for each time *t* studied, the total population is always the same -constant-. The only thing that changes is the proportion of people in each compartment. The idea of using a closed system and proportions is to be able to compare the results obtained between all cohorts, so $E + N = 1$.

In LODE systems we have the advantage that numerical methods are not required to find a solution, therefore we can solve it symbolically. To do this, we used Matlab (MATLAB, 2019) with the *dsolve* function designed to solve differential equations and differential equation systems. Therefore, since our interest is in the employed population, the general solution is:

$$\mu_{E_t} = C_2 \frac{b}{a} - C_1 e^{-t(a+b)} \qquad (3.9)$$

To substitute arbitrary constants C_1 and C_2 we must use initial values $E(0)$ and $N(0)$. However, these initial values are different in each cohort, the reader can check Appendix B for Matlab's code used.

Three methods can be used to estimate these two parameters: least squares estimation, maximum likelihood and Bayesian hierarchical modelling. Here, we present the Bayesian approach as it gave better results than the other two as in some cohorts these methods failed to converge. We suppose that generating process of the data follows a *Beta distribution* in the form

$$E_t \sim Beta(\alpha, \beta). \tag{3.10}$$

With mean ($E(P)$) and variance ($Var(P)$):

$$\mu_{E_t} = \frac{\alpha}{\alpha + \beta} = \mu, \tag{3.11}$$

$$Var(E_t) = \frac{\mu(1-\mu)}{1+\alpha+\beta}. \tag{3.12}$$

We must point out that α and β are shape parameters of the Beta distribution while a and b are parameters of interest to estimate. For whatever cohort we have that the expected proportion of employed (μ_{E_t}) and it can be linked to μ as:

$$\mu_{E_t} = \frac{\alpha}{\alpha+\beta} = C_2\frac{b}{a} - C_1 e^{-t(a+b)} \tag{3.13}$$

Following Ferrari & Cribari-Neto (2010) we can reparametrize α and β. Let $\alpha = \mu\phi$ and $\beta = (1 - \mu)\phi$ with $\phi = \alpha + \beta$ and $\mu = \alpha/(\alpha + \beta)$. From equations 3.11 and 3.12 we can de deduced that

$$\mu_{E_t} = \mu \tag{3.14}$$

$$Var_{E_t} = \frac{\mu(1-\mu)}{1+\phi} \tag{3.15}$$

Which yields the following specification of the data distribution:

$$E_t \sim Beta(\mu, \phi), \qquad t = 1, \dots, \mathrm{N}, \tag{3.16}$$

Note that $P(t)$ will vary for each of the cohorts depending on the initial values $P(0)$,$U(0)$) and $F(0)$. t is an index which describes each of the N months of follow-up of every cohort.

Following Equation 3.13 we need to specify the prior distributions of our parameters:

$$a \sim Uniform(0{,}1), \tag{3.17}$$

$$b \sim Uniform(0{,}1),$$

$$\phi \sim Gamma(0.005{,}0.005).$$

Prior distributions are the same for each cohort and almost non-informative (flat priors). Note that model is the same for males and females with the only difference in being the data used and, therefore, initial values $E(0)$ and $N(0)$.

Outsiders versus insiders: non-dynamic approach

In Chapter 2 we described how the Spanish labour market is highly dualized. Regulations in the Spanish labour market have introduced more flexibility at the margin which has caused an increase in job volatility and labour instability. In spite of government's efforts in promoting hiring on a permanent basis, there has been no reduction of the share of fixed-term contracts. Therefore, labour market is divided between insiders who have a stable job, i.e., permanent contract and low job volatility, and outsiders who have a higher job volatility and are continuously looking for a new job. Figure 7 describes a multistate model for the Spanish labour market reflecting market dualization.

As described at the beginning, we will study market labour entrance cohorts from 1991 to 2002 with gender partitioning.

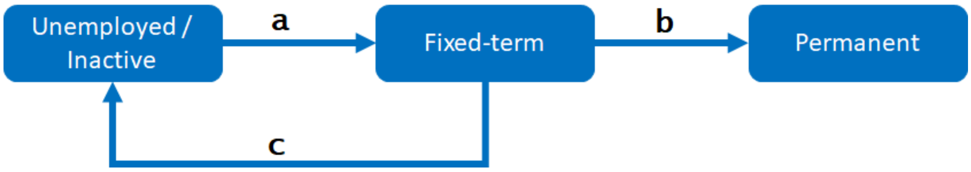

Figure 7: Outsiders versus insiders

This model can be expressed in the form of the following three interrelated equations:

$$U_{t+1} = U_t + cF_t - aU_t,$$

$$F_{t+1} = F_t - bF_t + aU_t - cF_t, \qquad (3.18)$$

$$P_{t+1} = P_t + bF_t.$$

The first equation shown in 3.18 describes that the proportion of Unemployed/Inactive in next month (U_{t+1}) is equal to the proportion in current month (U_t) plus those who lost their fixed-term contract (cF_t) minus people who got a fixed-term contract (aU_t). The second equation shows that the proportion of people with fixed-term contracts next month (F_{t+1}) is equal to the proportion with same type of contract in current month (F_t) plus those moved from unemployment/inactivity to employed as fixed-term (aU_t) minus those who achieved a permanent position - insiders - (bF_t) minus those who lost their job to fall into unemployment or inactivity (cF_t). Finally, the last equation shows that the proportion of permanent workers next month are equal to the proportion of permanent workers this month (P_t) plus the proportion of fixed-term workers that achieved a permanent contract (bF_t) One can argue that some arrows are missing from this model. However, including more arrows increased substantially the complexity of the model so it was decided to use this simpler -yet useful- modelling.

These three equations can be rewritten as a linear ordinary differential equation (LODE) system as shown on Equation 3.19.

$$\frac{\partial U}{\partial t} = bF - aU,$$

$$\frac{\partial F}{\partial t} = -bF + aU - cF, \tag{3.19}$$

$$\frac{\partial P}{\partial t} = cF.$$

As before, LODEs can be solved analytically without the need of numerical approximations as show in Equations 3.19.

$$U(t) = C_1 + C_3 e^{\frac{-t\left(a+b+c-\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}\right)}{2}} + C_2 e^{\frac{-t\left(a+b+c+\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}\right)}{2}}, \tag{3.20}$$

$$F(t) = C_3 e^{\frac{-t\left(a+b+c-\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}\right)}{2}} \left(\frac{\left(\frac{a}{2}+\frac{b}{2}+\frac{c}{2}-\frac{\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}}{2}\right)}{b} - 1 \right) + \\ + C_2 e^{\frac{-t(a+b+c+\sqrt{a^2-2ab+2ac+b^2+2bc+c^2})}{2}} \left(\frac{\frac{a}{2}+\frac{b}{2}+\frac{c}{2}+\sqrt{\frac{a^2-2ab+2ac+b^2+2bc+c^2}{2}}}{b} - 1 \right),$$

$$P(t) = -\frac{C_2 e^{\frac{-t(a+b+c+\sqrt{a^2-2ab+2ac+b^2+2bc+c^2})}{2}} \left(\frac{a}{2}+\frac{b}{2}+\frac{c}{2}+\frac{\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}}{2}\right)}{b} - \\ - \frac{C_3 e^{\frac{-t(a+b+c-\sqrt{a^2-2ab+2ac+b^2+2bc+c^2})}{2}} \left(\frac{a}{2}+\frac{b}{2}+\frac{c}{2}-\frac{\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}}{2}\right)}{b}$$

To eliminate the arbitrary constants C_1, C_2 and C_3 and obtain a specific solution for our data, we need to include initial values $U(0)$, $F(0)$ and $P(0)$. Each of these initial values are different for each cohort -from 1991 to 2003-. Appendix A shows code used to estimate the arbitrary constants in each of the studied cohorts.

We can use indistinctively any of the three equations to estimate a, b and c. We decided to use $P(t)$. Three methods can be used to estimate these three parameters: least squares estimation, maximum likelihood and Bayesian hierarchical modelling. Here, as before, we adopt the Bayesian approach as it gave better results than the other two as in some cohorts these methods failed to converge. As in the proposed two-compartment model and using re-parameterization from Ferrari & Cribari-Neto (2010) :

$$P_t \sim Beta(\mu, \phi). \tag{3.21}$$

$$\mu = \mu_{P_t} = \frac{\alpha}{\alpha+\beta} = \tag{3.22}$$

$$-\frac{C_2 e^{\frac{-t(a+b+c+\sqrt{a^2-2ab+2ac+b^2+2bc+c^2})}{2}}\left(\frac{a}{2}+\frac{b}{2}+\frac{c}{2}+\frac{\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}}{2}\right)}{b} -$$

$$-\frac{C_3 e^{\frac{-t(a+b+c-\sqrt{a^2-2ab+2ac+b^2+2bc+c^2})}{2}}\left(\frac{a}{2}+\frac{b}{2}+\frac{c}{2}-\frac{\sqrt{a^2-2ab+2ac+b^2+2bc+c^2}}{2}\right)}{b}.$$

$$Var(p) = \frac{\mu(1-\mu)}{1+\phi} \tag{3.23}$$

Which yields the following specification of the data distribution:

$$P_t \sim Beta(\mu, \phi), \qquad t = 1, \dots, 120, \tag{3.24}$$

Note that $P(t)$ will vary for each of the cohorts depending on the initial values$P(0)$, $U(0)$ and $F(0)$, t is an index which describes each of the 120 months (10 years) of follow-up of every cohort.

Moreover, we need to specify the prior distributions of our parameters for Equation 3.20:

$$a \sim Uniform(0,1), \tag{3.25}$$

$$b \sim Uniform(0,1),$$

$$c \sim Uniform(0,1),$$

$$\phi \sim Gamma(0.005,0.005).$$

Prior distributions are the same for each cohort and non-informative. Note that model is the same for males and females with the only difference in being the data used and, therefore, initial values $U(0)$, $F(0)$ and $P(0)$.

3.2.3. Dynamic approach

This novel approach rises from the need to continue developing new methods in compartment models as useful tool to understand the dynamic property of volatility in labour trajectories. With the above-mentioned method, we will have a single estimation (with its credible interval) for each cohort. This means that estimated a and b in employed versus non-employed will be unique for each cohort. One can understand this as a somehow parameter average for each cohort. However, it is well known in the literature that instability is not homogenous during ones working life in the sense that young people tend to have more instability than older people. Therefore, though having a single parameter may proof useful it can be expanded to vary during working life span.

Here we present a method to account for time-dependency. The idea behind the process is to estimate parameters in blocks of 10 months. This size was decided after various interim tests where having smaller blocks yielded problems with parameter estimation. On the contrary, increasing size of block would help estimation but these estimates would not reflect the subtle differences of small periods of time. Using 10 month-period we had the enough size to correctly estimate parameters a and b and not too big to smoothen differences. Moreover, overlapping of blocks was also considered and reader may find practical justification of 5-year overlap between blocks using 1970s cohort so that consecutive estimations of a given parameter shared part of the data. This cohort was used to visually inspect the result of using non-overlapping blocks (block 1: $t = 1 \ldots t = 10$; block 2: $t = 11 \ldots t = 20$, …), 5 year-overlapping (block 1: $t = 1 \ldots t = 10$; block 2: $t = 6 \ldots t = 15$, …) and 9 year-overlapping (block 1: $t = 1 \ldots t = 10$; block 2: $t = 2 \ldots t = 11$, …). From each block we will extract the mean of the posterior distribution of each parameter. Therefore, it is necessary to subdivide the data into k-blocks of 10 months so that in each block, Bayesian hierarchical modelling is applied. The likelihood is:

$$E_{j(k)} \sim Beta(\mu, \phi), \qquad k = 1, \dots, M, \quad j = 1, \dots, 10 \tag{3.21}$$

with

$$\mu_{E_{j(k)}} = C_2 \frac{b_k}{a_k} - C_1 e^{-j(a_k + b_k)}. \tag{3.22}$$

So k denotes each of the M blocks and j each month inside each block, i.e $j(k)$. Therefore, for each cohort me will have M posterior distributions of each parameter (a, b, ϕ). The prior distributions of these parameters are:

$$a_k \sim Uniform(0,1), \tag{3.23}$$

$$b_k \sim Uniform(0,1),$$

$$\phi_k \sim Gamma(0.005,0.005).$$

In order to validate the models, 500,000 iterations were performed for each model so that the effective number of simulations ($n.eff$) was greater than 100 in each of the distributions of a and b. Additionally, for all these models, it was also verified that the Gelman-Rubin R statistic was around 1 which is an indicator of good convergence (Brooks & Gelman, 1998) .

The means of the posterior distributions of each a_k and b_k were chosen as point estimates of these parameters and were associated with the midpoint of the moving block. For example, for a_1 we calculate its posterior distribution and selected its mean. This value is then associated with the midpoint of the series interval ($t_1 = 5$). Analogously, for a_2, the mean of the posterior distribution was selected and also the midpoint $t_2 = 10$ and so on. Appendix A has all *WinBUGS* (Lunn et al., 2000) code used for all cohorts.

The models for men and women are analogous and we will denote $E^m_{j(k)}$ for the observed proportion men who are employed and $E^w_{j(k)}$ for the observed proportion of female who are employed.

3.3. Labour trajectories and life expectancy methodologies

Using the above-described compartment models will enable us to study quantitatively labour (in)stability. However, this effect might also be observable in the WLE or ELE for each of the cohorts. Here we present a method described by (Hytti et al., 2004) to calculate working life expectancy and employment life expectancy. This approach uses Sullivan's method (Sullivan, 1971) which is based on prevalence rates. Due to its standardized feature, it is also useful for comparison of different countries or periods of time. Both concepts could also be calculated through multi-state models using transition probabilities, however longitudinal data is required (Dudel, 2018b) and this methodology is much more complex to carry out.

3.3.1. Working life expectancy and Employment life expectancy

Calculation of WLE/ELE uses the same approach of synthetic cohorts as in life expectancy. Here we will use cross-sectional lifetable and labour force data to build age specific WLE/ELE for the Spanish population between 1976 and 2014. To calculate Spanish WLE and ELE, survival figures from mortality statistics and activity rates was required. However, online databases only have information regarding activity rates in five age groups. Therefore, special petition was made to receive activity rates in single year groups (*ref*: 3/6003 and 3/5982). Although our intention was to include population aged 16 or over starting at 1970, we were notified that this was not possible and that the oldest registry that the institution had was from 1976. Rest of data required was downloaded from the Spanish National Statistics Institute.

In the case of WLE, this method provides, for each age, the expected average period of belonging to the labour force, i.e., active, adjusting by the activity and mortality rates of each year. Similarly, for ELE, this method provides the expected average employment period remaining at a given age. As it is an average computed over all adults in the country, the indicator is heavily influenced by the number of inactive persons in a country. WLE shows the combined effect of the proportion of adult population who remain in the labour market each year and their life expectancy. Therefore, results cannot be interpreted in terms of years of employment.

The methodology used for each year is the same but following and acknowledging that all credit for the development of this approach goes to (Hytti et al., 2004, pp. 20-21), they describe how to calculate WLE for the Finnish population of 2002:

> *The figures in the first column (l_x) denote the number of the original birth-year cohort of 100,000 that will attain age x, when the mortality rate of the cohort is the same as in 2002. Column L_x shows the total number of person years lived at age x. This is obtained by calculating the average of 21 those having attained age x and ($x+1$). Life expectancy is calculated by first adding up the person years lived at age x and upward, giving the sum of person years for the remaining life span of the cohort (T_x). When the total number of remaining person years of age x is divided with the number of people who attained this age (l_x), the result is the life expectancy at age x (e_x). The labour force expectancy is obtained by first multiplying the person years lived at each age (L_x) with the activity rate of the annual cohort in question (a_x). Then the labour force expectancy is calculated in the same way as life expectancy. The value for expected years outside the labour force is obtained by calculating the difference between life expectancy and labour force expectancy (e_x^a).*

To calculate ELE, the methodology is very similar with the only difference that every time activity rate is used, we use employment rate instead. Once we have constructed all tables from 1976 to 2014, we need to follow each artificial cohort. This is, done using a Lexis diagram as described by Wilhem Lexis in 1875.

The indicator is purely descriptive and show what is happening. It must be noted that this indicator does not reflect how long persons must or should work (EUROSTAT, 2019).

4. Results

In this chapter we will describe the results obtained from the application of the methodology described in Chapter 3. Recall the primary aim of this thesis is to evaluate labour (in)stability in Spain from post-Franco's regime to 2014. This (in)stability will be measured according to transitions between employment and non-employment or between outsider and insiders using two different approaches: non-dynamic and dynamic. Moreover, we also present the results of calculating working life expectancy and employment working expectancy which might also help in studying this (in)stability.

We will divide these results into three sections, in the first one we will describe Employment versus non-employment and Insiders versus non-insiders from a non-dynamic perspective. This will help understand Bayesian compartment modelling and lay the groundwork for the second section. In the next section, we will focus our attention on employment versus non-employment models on quinquennial (from 1970 to 1990) cohorts from a dynamic perspective. Finally, in a third section, will describe the working life expectancy for cohorts who were 16 years old in 1976 to 2014 for both sexes.

Let us commence with the non-dynamic approach to labour market instability (in)stability.

4.1. Non-dynamic perspective

The non-dynamic perspective is based on estimation of model parameters for a given cohort as a whole. Figures 8 and 9 serve as a reminder of both models applied in this approach.

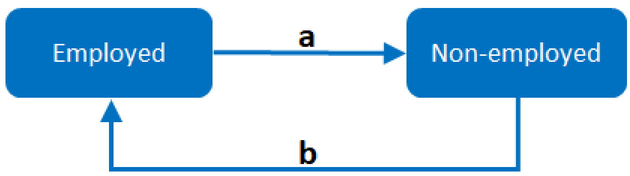

Figure 8: Employed versus non-employed (Model 1)

In Model 1 single estimation for speed of transition between employed and non-employed ($\hat{a}$) and from non-employed to employed ($\hat{b}$) is calculated. As Figure 9 shows, this is not the case for Model 2 where three parameters are estimated for each cohort; unemployed/inactive to fixed-term ($\hat{a}$), fixed-term to unemployed/inactive ($\hat{c}$) and from fixed-term to permanent ($\hat{b}$).

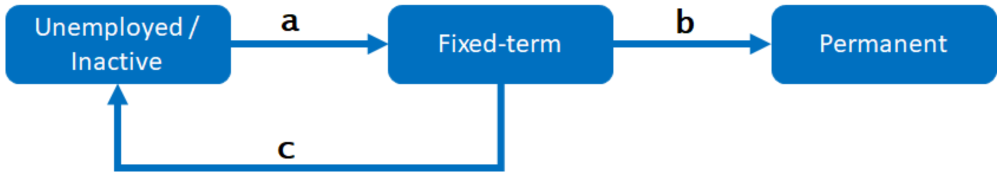

Figure 9: Outsiders vs insiders (Model 2)

As described in Chapter 5, Model 1 is applied to cohorts quinquennially from 1970 to 1990 whereas Model 2 uses annual cohorts from 1991 to 2002. Moreover, Model 1 will also be partitioned by sex.

4.1.1. Employed versus non-employed

Here we present the results for the difference in speed of transition between males and females for the estimation of a. From the Bayesian perspective it is quite simple to calculate this as one just needs to subtract posterior distribution of women from men. No differences will be found if credible interval contains zero but speed of transition to non-employment will be higher in male compared to women if posterior mean and its credible interval is positive. Analogously, if it is negative, we will conclude that speed to non-employment is higher in females. Table 1 shows posterior mean and credible interval for the difference in parameter a for each studied cohort.

Labour entrance cohort	**Posterior mean difference**	**2.5% Credible interval**	**97.5% Credible interval**
1970	-0,002746	-0,002961	-0,002568
1975	0,182149	0,051968	0,262297

1980	-0,003537	-0,004109	-0,002922
1985	-0,097602	-0,390583	-0,001290
1990	-0,035192	-0,321280	0,000318

Table 1: Posterior mean gender difference and credible interval of transition from employment to non-employment

Results show that differences were found between men and women in all cohorts except for individuals joining labour market during 1990. Both the 1970 and 1980 cohort are characterised by small credible intervals which may imply that there is also low (in)stability because of low variance when estimating transition speed for men and women separately. However, cohorts from 1975, 1985 and 1990 show higher variance. This might be due to high fluctuations in speed transitions for males, females, or both of them. The credible interval from cohort which entered labour market during 1990 includes zero so we can conclude that there were no differences in gender (in)stability; however, this cohort shows more uncertainty than 1970s or 1980. The 1985s cohort does not include 0 (95% CI: -0.391; -0.001) meaning that females who entered labour market during 1985s had higher speed transition to non-employment compared to their male counterparts. Finally, results from 1975 are unexpected as females had lower transition speed to non-employment compared to male.

The Gelman-Rubin statistic (Rhat) for all cohorts was approximately one which indicated good convergence of the Markov chains involved in the analysis. The effective sample size was higher than 100 which is also prerequisite for a correct interpretation of the posterior distribution of the parameter.

Table 2 describes posterior mean difference and credible interval between males and females for the transition from non-employment to employment (parameter b) according to labour entrance cohorts.

Labour entrance cohort	Posterior mean difference	2.5% Credible interval	97.5% Credible interval
1970	-0,003118	-0,003416	-0,002866
1975	0,683653	0,198727	0,979097
1980	0,002921	0,000738	0,005340
1985	-0,231235	-0,955045	0,007193

1990	-0,094584	-0,909245	0,007388

Table 2: Posterior mean gender difference and credible interval of transition from non-employment to employment

In the 1970 cohort we can observe a higher speed from females getting employed as posterior mean and credible intervals are negative (Posterior mean: -0.003, 95% CI: -0.003; -0.003). However, we do not observe this trend for 1975 and 1980 were males have transition quicker to employment. Finally, for the 1985 and 1990 cohorts no differences were found (95% CI: -0.955; 0.007 and 95% CI: -0.0909; 0.007). Nevertheless, we will come back to this issue in following sections as credible intervals from parameter b were found to be too wide and, therefore, unreliable.

We have studied overall effect of transition from employed to non-employed ($\hat{a}$) and from non-employed to employed ($\hat{b}$) in each cohort as well as differences between male and female. Now we proceed to use 1970 as reference market labour cohort and compare it to the rest of the studied cohorts. However, as the 1970 cohort time interval is longer than the other, we have shortened it to match the same follow-up period as the cohort to whom it is compared. The following tables are the result of subtracting the reference cohort (1970) to the studied cohort.

Table 3 shows cohort differences using 1970 as reference. Results indicate that speed from employment to non-employment is very similar between studied cohorts. However, the 1980's cohort speed was higher compared to 1970 (Posterior mean: 0.232, 95% CI: 0.082; 0.347), meaning than jobs were lost at a higher pace. Moreover, 1985s cohort also follows this trend of higher transition to non-employed compared to 1970 (Posterior mean: 0.002, 95% CI: 0.001 – 0.002). Strikingly, this pattern does not continue for the 1990s cohort as results yield lower speed of transition to non-employment compared to 1970s cohort (Posterior mean: -0.001, 95% CI: -0.002; -0.001).

Labour entrance cohort	Posterior mean difference	2.5% Credible interval	97.5% Credible interval
1975 - 1970	-0.000558	-0.000591	-0.000525
1980 - 1970	0.231721	0.082019	0.346895
1985 - 1970	0.001979	0.001381	0.002619
1990 - 1970	-0.001371	-0.001601	-0.001090

Table 3: Posterior mean cohort difference and credible interval of transition from employment to non-employment

Table 4 shows the posterior mean difference in transition between non-employment to employment using 1970 cohort as reference.

Labour entrance cohort	Posterior mean difference	2.5% Credible interval	97.5% Credible interval
1975 - 1970	0,000012	-0,000032	0,000071
1980 - 1970	0,660575	0,236212	0,986997
1985 - 1970	0,012543	0,010130	0,015170
1990 - 1970	-0,001075	-0,002209	0,000151

Table 4: Posterior mean cohort difference and credible interval of transition from non-employment to employment

Here we can observe that no differences were found in the posterior distribution of the difference between 1975 vs 1970 and 1990 vs 1970. However, transition to employment was higher in 1980 (Posterior mean: 0.661, 95% CI: 0.236; 0.987) or 1985 (Posterior mean: 0.012, 95% CI: 0.010; 0.015) compared to 1970. Nevertheless, we observe wide intervals for 1980 versus 1970; this will be furtherly discussed as some estimated posterior distributions of parameter $\hat{b}$ had unacceptable high variance.

4.1.2. Insiders versus outsiders

(In)stability can also be studied from the insiders versus outsider perspective. Here our focus is the transition from outsiders to insiders or parameter *b* as shown in Model 2 (Figure 9). We will firstly show results for gender difference in each of the studied cohorts and, secondly, differences from each cohort to 1991.

Table 5 shows posterior distribution for the difference between males and females in the context of transition speed from outsiders to insiders. All cohorts are followed for 10 years

Labour entrance cohort	Posterior mean difference	2.5% Credible interval	97.5% Credible interval
1991	0,000168	0,000004	0,000643
1992	0,000181	0,000004	0,000667

1993	0,000222	0,000006	0,000805
1994	0,000464	0,000012	0,001690
1995	0,000427	0,000012	0,001508
1996	0,000612	0,000020	0,002110
1997	0,000579	0,000016	0,002070
1998	0,000661	0,000015	0,002248
1999	0,000638	0,000020	0,002149
2000	0,001424	0,000053	0,003929
2001	0,001656	0,000057	0,005669
2002	0,002111	0,000060	0,007161

Table 5: Posterior mean gender difference and credible interval of transition from outsiders to insiders

All cohorts show that male had higher transition speed to insiders compared to females. Results show increasing posterior mean when studying younger cohorts. In 1991 difference in transition to insider was 0.00016 compared to 0.0021 in 2002. However, we cannot conclude that later cohorts have higher gender differences compared to older ones as credible intervals overlap. It should also be pointed out that credible intervals are larger in younger cohorts compared to older ones. This could mean that males, females or both of them have high instability and therefore parameter estimation reflects this with wider credible intervals.

Table 6 shows transition from fixed-term contracts to permanent (i.e., outsiders to insiders) for all studied cohorts using 1991 as reference.

Labour entrance cohort	Posterior mean difference	2.5% Credible interval	97.5% Credible interval
1992 - 1991	0,000220	0,000006	0,000815
1993 - 1991	0,000211	0,000006	0,000797
1994 - 1991	0,000419	0,000011	0,001668
1995 - 1991	0,000400	0,000010	0,001494
1996 - 1991	0,000784	0,000020	0,002906
1997 - 1991	0,000762	0,000017	0,002939
1998 - 1991	0,000727	0,000017	0,002789
1999 - 1991	0,000670	0,000015	0,002577
2000 - 1991	0,000538	0,000015	0,001917
2001 - 1991	0,000509	0,000014	0,001925
2002 - 1991	0,000585	0,000017	0,002312

Table 6: Posterior mean cohort difference and credible interval of transition from outsiders to insiders

Results show that all cohorts have higher transition speed from outsiders to insiders compared to reference (1991). Although posterior mean is higher in some comparisons, credible intervals from the different posterior distributions overlap each other. This leads to no differences between compared cohorts.

To sum up, we have studied employment vs non-employment and outsiders vs insiders from a holistic perspective. Result showed that transition to non-employment is quicker in women compared to men while there is no clear pattern between cohorts. When studying outsiders vs insiders all cohorts showed that transition to insiders benefit men compared to women. Finally, a trend in increasing speed to insiders was found as we advance to younger cohorts.

The non-dynamic approach to study (in)stability is helpful to have a summarised picture. Therefore, it can be of usefulness to researchers to use the posterior distributions of the parameters as indicators for each of the dimensions of (in)stability. For example, posterior mean of the parameter describing speed of transition from outsider to insider in a given cohort can be used as an index to compare it to other cohorts or, even, other populations. However, the non-dynamic perspective is insufficient if our focus is to study the transitions occurring during a working life period for a specific cohort as it is very variable. The following section focuses on the results of time-dependant parameters previously described during the working life of five different cohorts.

4.2. Dynamic perspective

Here we present the results from applying our developed strategy to dynamic compartment models. This section will be divided into two subsections. In the first one we will describe the reasoning for 5-month overlap moving blocks by comparing results to 0-month and 9-months overlapping in the 1970 cohort. In the second subsection we will describe all results for employed versus non-employed for each market labour entrance cohort. Here two different points of view will be studied: intra-cohort and between-cohorts. Firstly, using 1970 labour market cohort as reference, we will be comparing it against the rest of cohorts (between-cohort). Secondly, we will describe the observed proportion of employed, parameter estimation a for males, females and the difference between them in each cohort (within-cohort). Estimations for transition from non-employed to employed yielded unrealistic wide credible intervals and results are unreliable for interpretations so they will not be described here.

4.2.1. Moving blocks

Figure 10 shows parameter a estimations for 1970 labour market cohort in three different moving blocks. Figure A shows no overlapping, so parameter estimation is done in consecutive blocks ($Block_1 = t_1 \dots t_{10}; Block_2 = t_{11} \dots t_{20}$ …). Figure B shows 5-month overlapping which means that consecutive blocks share part of the data ($Block_1 = t_1 \dots t_{10}; Block_2 = t_5 \dots t_{15}$ …). Figure C overlaps 9 out of 10 months; therefore, moving block has the highest overlapping possible for a 10-month block approach ($Block_1 = t_1 \dots t_{10}; Block_2 = t_2 \dots t_{11}$ …).

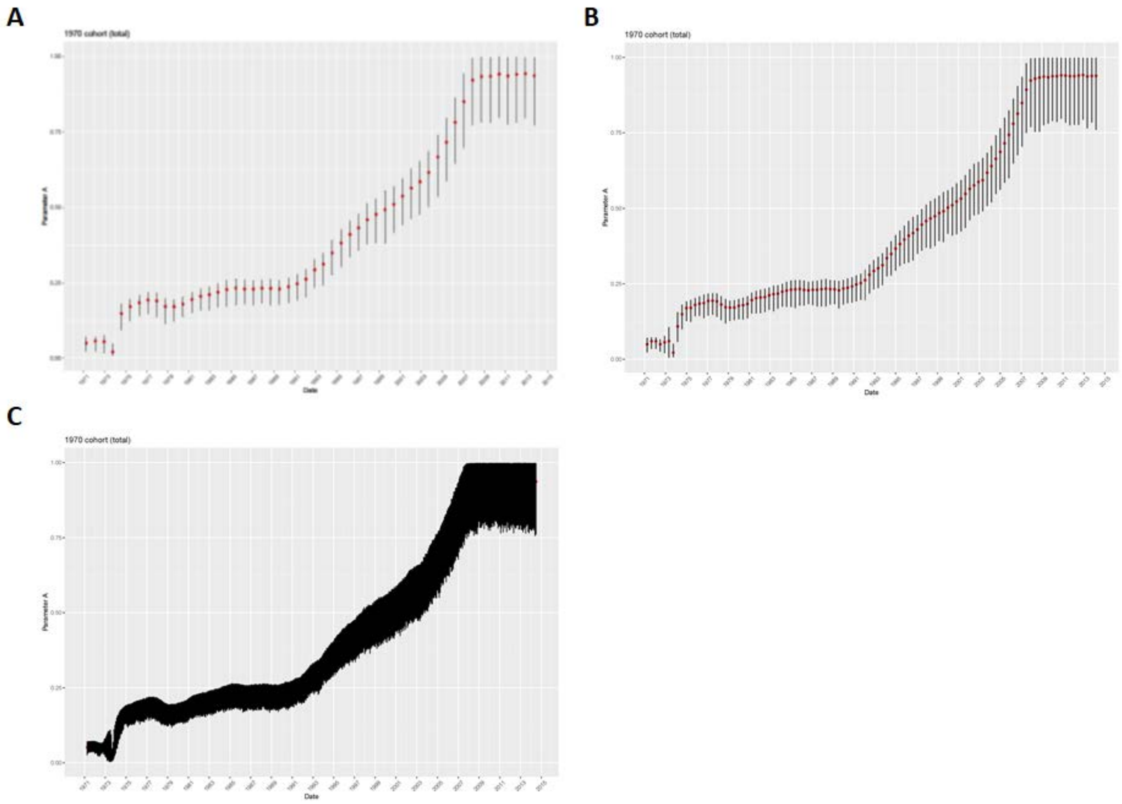

Figure 10: Different moving blocks intervals. (A) No overlapping, (B) 5-month overlapping and (C) 9-month overlapping

When comparing all three figures we see an increase of estimation points, especially for 9-month overlapping. Although it was first decided to ignore any type of overlapping, we finally decided to use a 5-month overlapping for two reasons. Firstly, if we take a closer look at interval 1973 – 1975, there is a jump in the posterior distribution which is especially noticed in Figure A but this effect is smoothed in Figure B. Figure C reflects better this transition as more blocks are evaluated between those two time points. This leads to our second argument for choosing 5-month overlapping. Inside each block there is a Bayesian parameter estimation for transition from employment to non-employment and from non-employment to employment. Computation time for a given cohort becomes an issue when we have too many blocks as it already requires around 4 hours for each cohort in a 5-month overlapping context. Moreover, only few some intervals have these abrupt changes between consecutive blocks. For instance, in this 1970 cohort no brusque jump in posterior parameter estimation can be found apart from the aforementioned interval.

4.2.2. Employed versus non-employed

We now present the results of dynamic approach for the speed of transition from employment to non-employment from a between-cohort and a within-cohort perspective. We will begin with between-cohort in which individuals who entered labour market during 1975, 1980, 1985 or 1990 are compared against people who entered during 1970. After these results we will proceed with within-cohort results. Here we will dig inside each cohort and compare differences, if any, between males and females.

Between-cohort

Figure 11 shows posterior distribution of parameter a for each of the 10-month blocks in individuals who entered labour market during 1970 and these were followed for 463 months. In order to compare it to the other cohorts, the follow-up is shortened to match the studied cohort. For instance, individuals who joined labour market cohort during 1975 were studied for 467 months while those from 1970 for 528. In order to compare both cohorts, the last 61 months from the 1970 cohort are ignored.

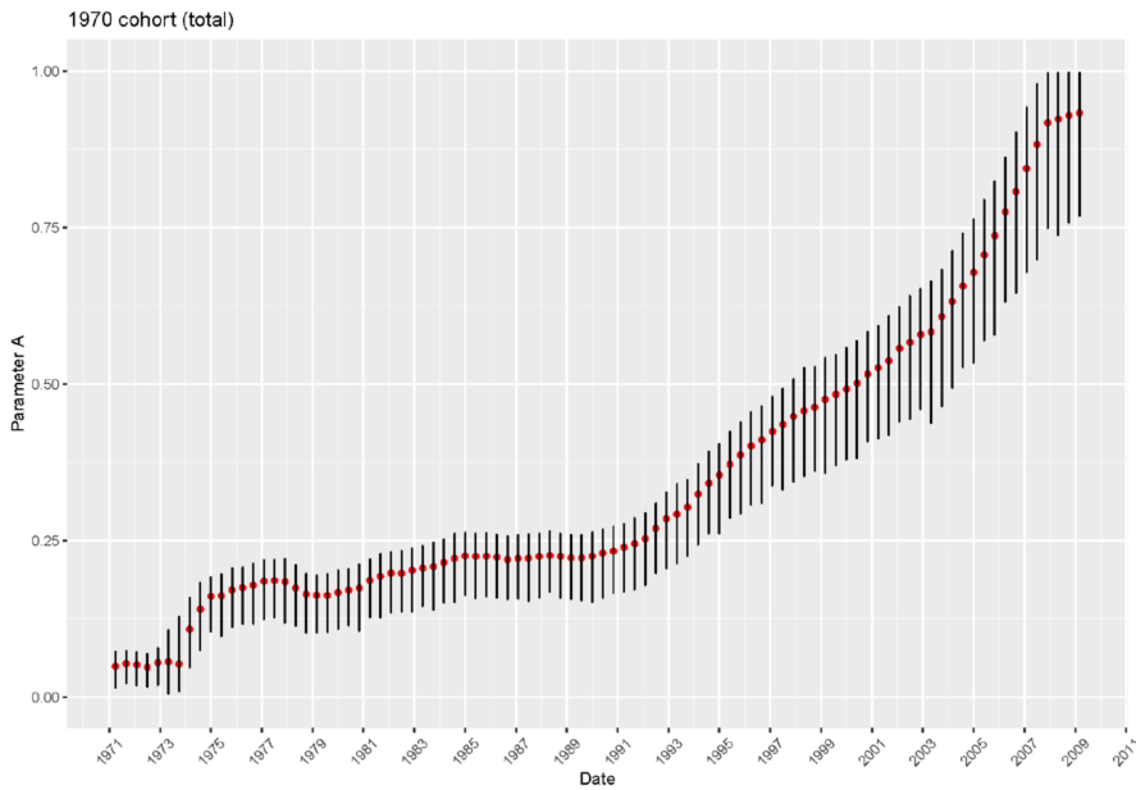

Figure 11: Transition from employment to non-employment (1970).

Results show that individuals who entered labour market during 1970 experienced no increase in speed to non-employment in the first 4 years. However, starting in 1974, there is an increase in the transition to non-employment which is particularly high for 3 years. The pace then decreases for the following 20 years and then increases again until the end of the follow-up. As said before, follow-up is restricted to total of 467 months which is equal to follow-up time of the 1975 cohort. Instability is low at the beginning of the labour trajectory because parameter credible intervals are narrow. This instability increases at the start of 2000 which is reflected by the high variability of the parameter estimation.

Figure 12 shows observed proportion of employed stratified by cohort. In blue we have individuals who entered labour market during 1970 and, in red, those who entered during 1975. It should be noted that x-axis has two labels, the upper one describes the reference cohort (1970) cohort and the lower one the compared cohort (1975).

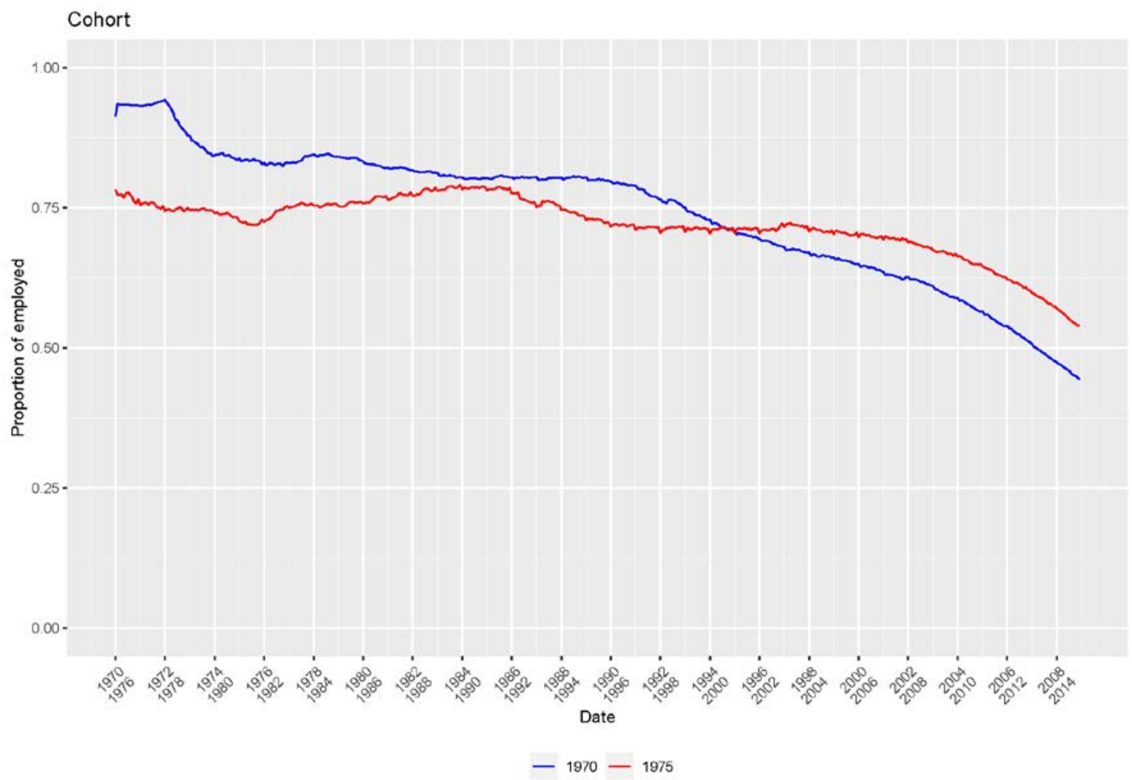

Figure 12: Proportion of employed (1970 and 1975).

This figure shows that initial proportion is higher in 1970 compared to 1975 but it decreases at a higher pace. It is around 24 years after individuals start their labour trajectory when proportion of employed in 1975 is higher compared to 1970.

Figure 13 shows transition from employment to non-employment for individuals who entered labour market in 1975.

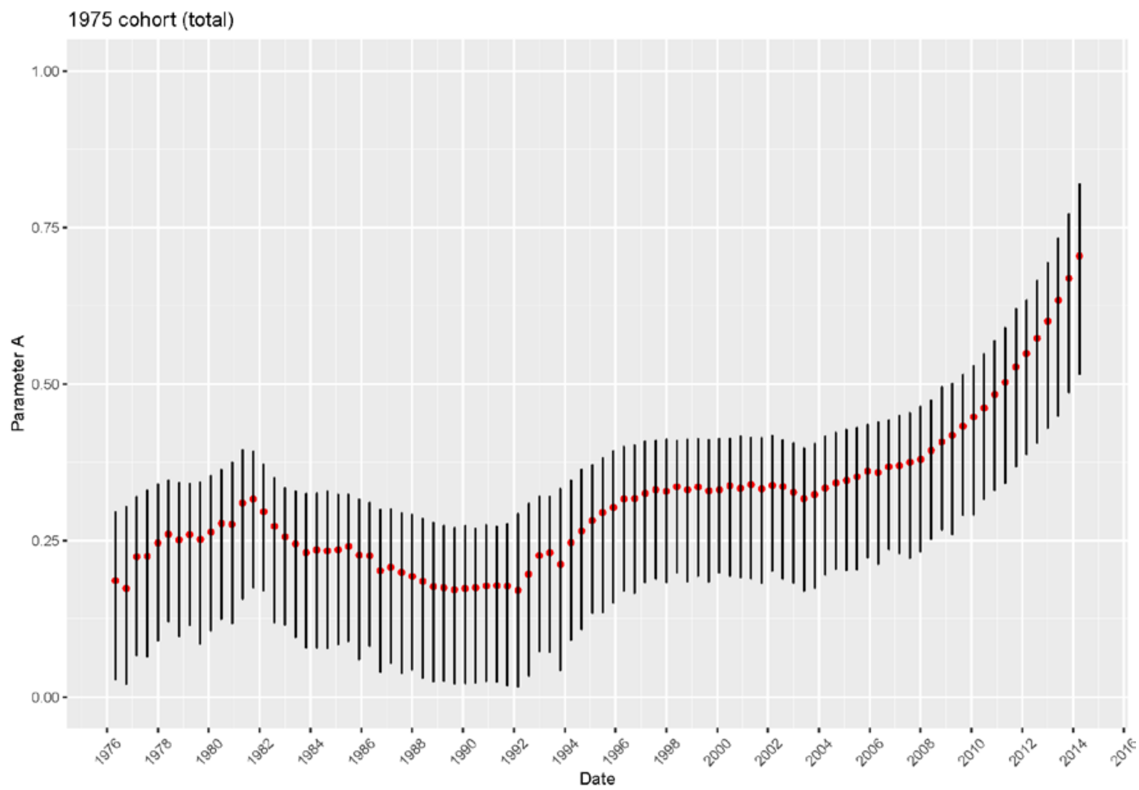

Figure 13: Transition from employment to non-employment (1975).

Results for the 1975 cohort show a constant speed of transition to non-employment of about 0.25 with a quick increase around 2008 peaking to 0.70. Moreover, credible intervals are wider compared to 1970 indicating a higher instability. Here instability is present from the start and slowly decreases during working life trajectory.

Figure 14 shows difference in transition speed from employment to non-employment between the 1975 cohort and the 1970. In Bayesian analysis the term statistically different is not used because there is no contrast test involved. However, there is a way to describe if there are differences between transition speed to non-employment between 1970 and 1975. The idea behind is to subtract both posterior distributions in a given block and if this new distribution does not include zero inside its credible interval it will then mean that there are differences in transition speed between both cohorts for that block. The x axis in the Figure 13 represents time elapsed from the entrance in labour market.

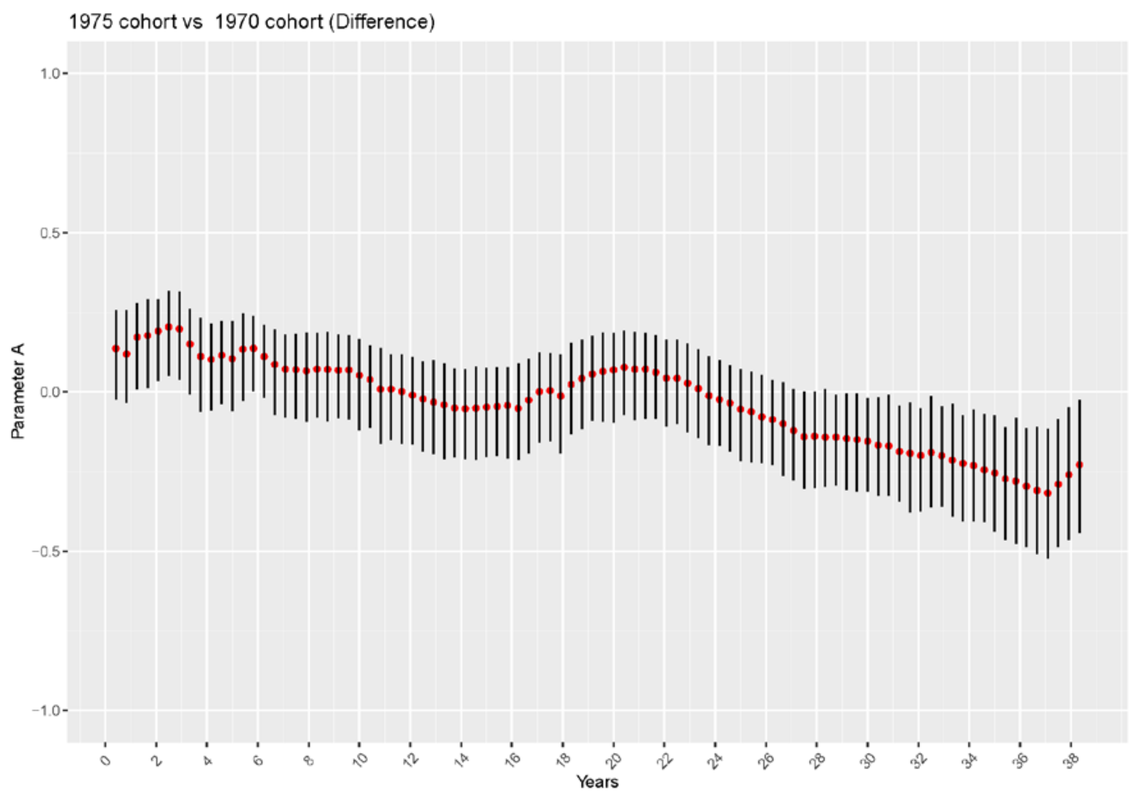

Figure 14: Difference in transition from employment to non-employment (1975 - 1970).

During the vast majority of follow-up, no differences between 1975 and 1970 can be found. After the first year and for the next two years, transition from employment to non-employment is higher in 1975 compared to 1970. More differences can be found 30 years after entering labour market in which speed to non-employment is higher in 1970 compared to 1975, meaning that the generation from 1970 started to retire earlier than those from 1975.

Figure 15 shows observed proportion of employed stratified by cohort. Blue describes reference (1970) while red is used for 1980.

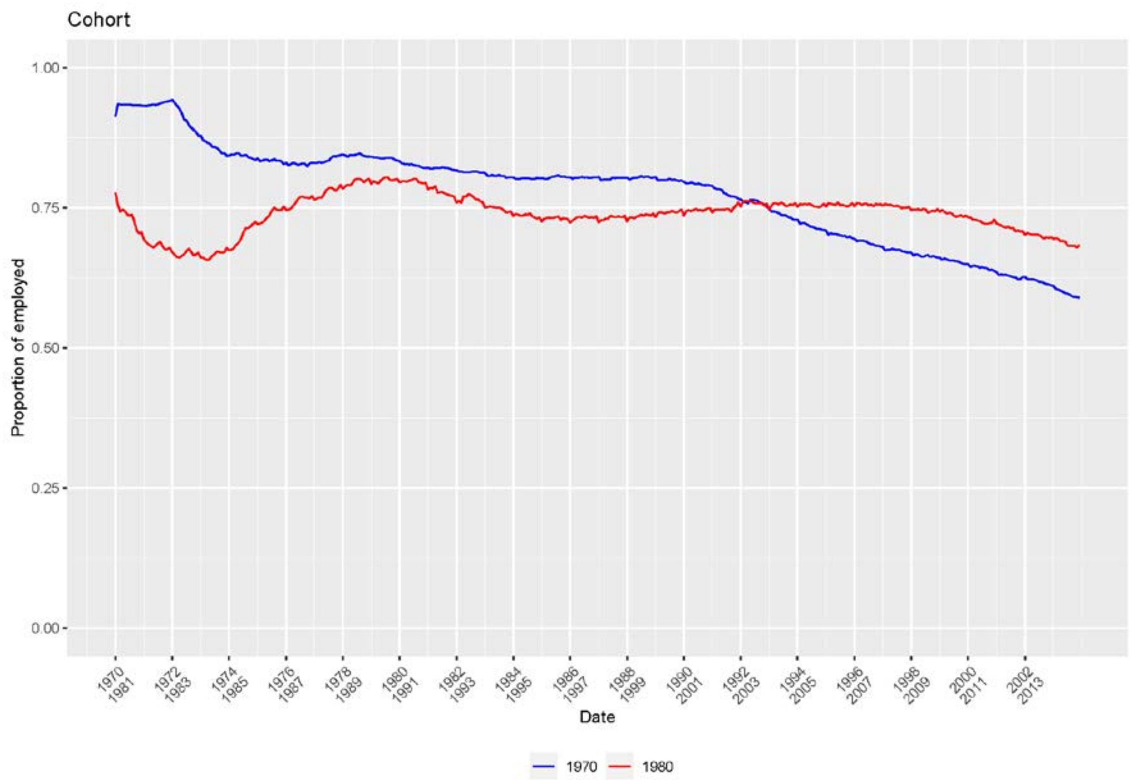

Figure 15: Proportion of employed (1970 and 1980).

Similar to 1975, proportion of employed is constant during all observed period at around 0.75. There is, however, a strong decrease during early years which is then followed by a recovery in employment. Here, observed proportion es higher in 1975 for the first 22 years but then the 1980 cohort has higher proportion of employment.

Figure 16 describes posterior distribution in each 10-month block for parameter a in individuals who entered labour market during 1980.

Figure 16: Transition from employment to non-employment (1980).

Transition speed to non-employment increases during the first two years but then decreases to 0.25. It then remains constant for all follow-up period with a trend to increase in the last few years. This trend might be due to the transition to retirement. Instability is higher compared to 1970 as credible intervals are wider.

Figure 17 shows difference in transition speed to non-employment between 1970 and 1980.

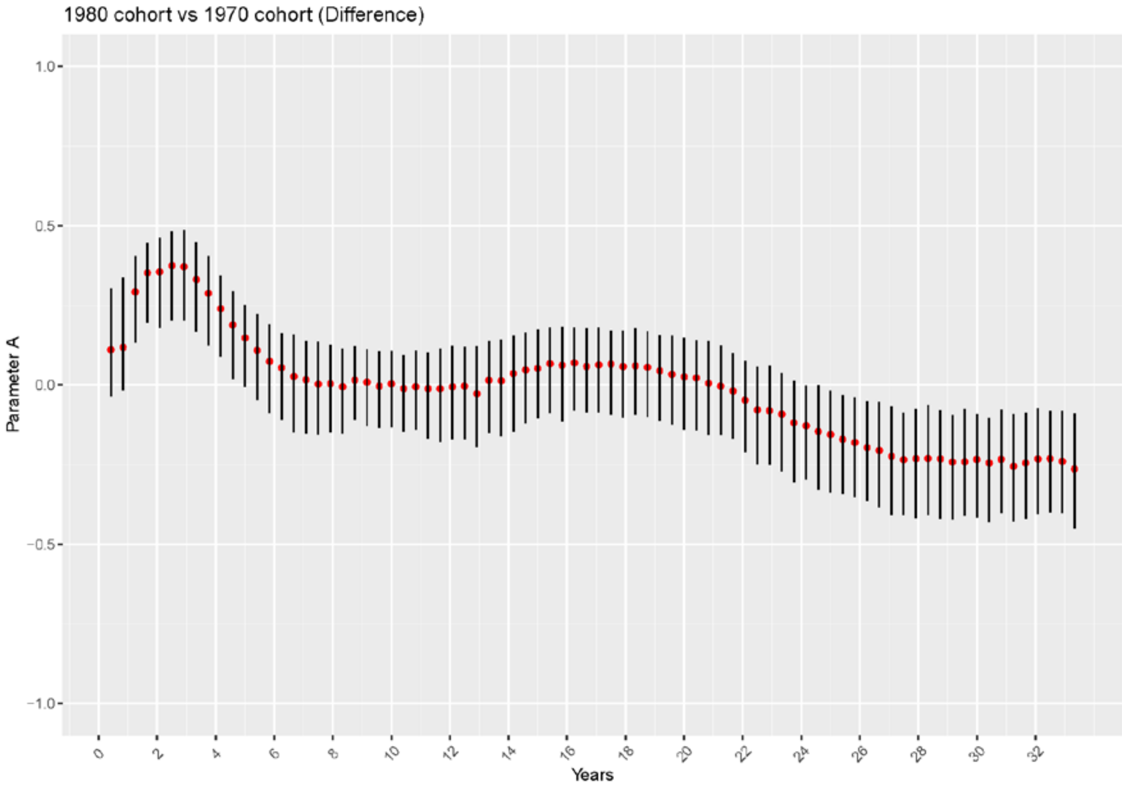

Figure 17: Difference in transition from employment to non-employment (1980 - 1970).

Three stages can be found in the difference in transition to non-employment between 1980 and 1970. During early years in labour market transition speed is higher in 1980. After 5 years and for the next 20 years, no differences can be found between both cohorts. However, during late years of labour trajectory, speed to non-employment is higher in 1970. This means that transition to retirement might happened before in the 1970 cohort compared to 1980. Moreover, giving the fact that speed to non-employment was lower in 1970 at the start of labour trajectory it is plausible that, on average, individuals from 1970 had higher time spent in labour market and, therefore, retire earlier than individuals from 1980.

Figure 18 shows observed proportion of employed in people who entered labour market during 1970 or during 1985.

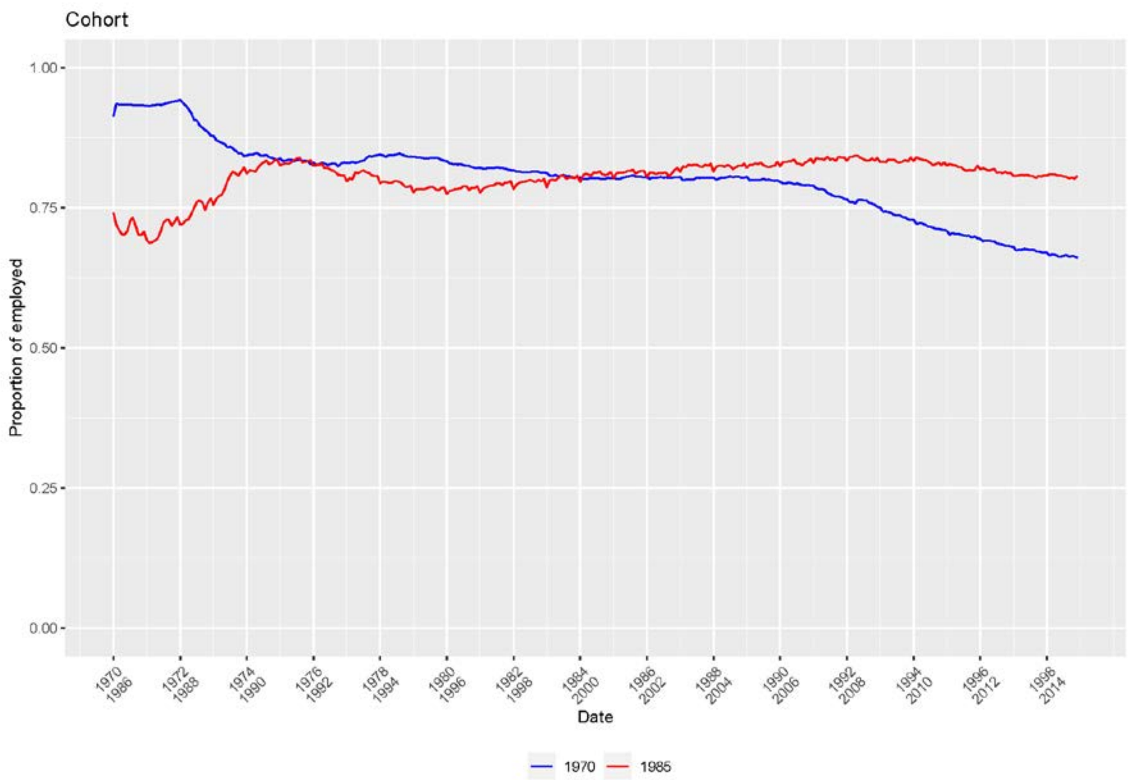

Figure 18: Proportion of employed (1970 and 1985).

In early years, proportion of employment is lower in 1985 compared to 1970. However, after around four years of follow-up, both cohorts have similar proportion for the next twenty years. It is then when cohort from 1970 starts decreasing their proportion, probably due to retirement.

Figure 19 shows 1985 cohort's transition speed to non-employment by 10-month blocks with a 5-month overlapping.

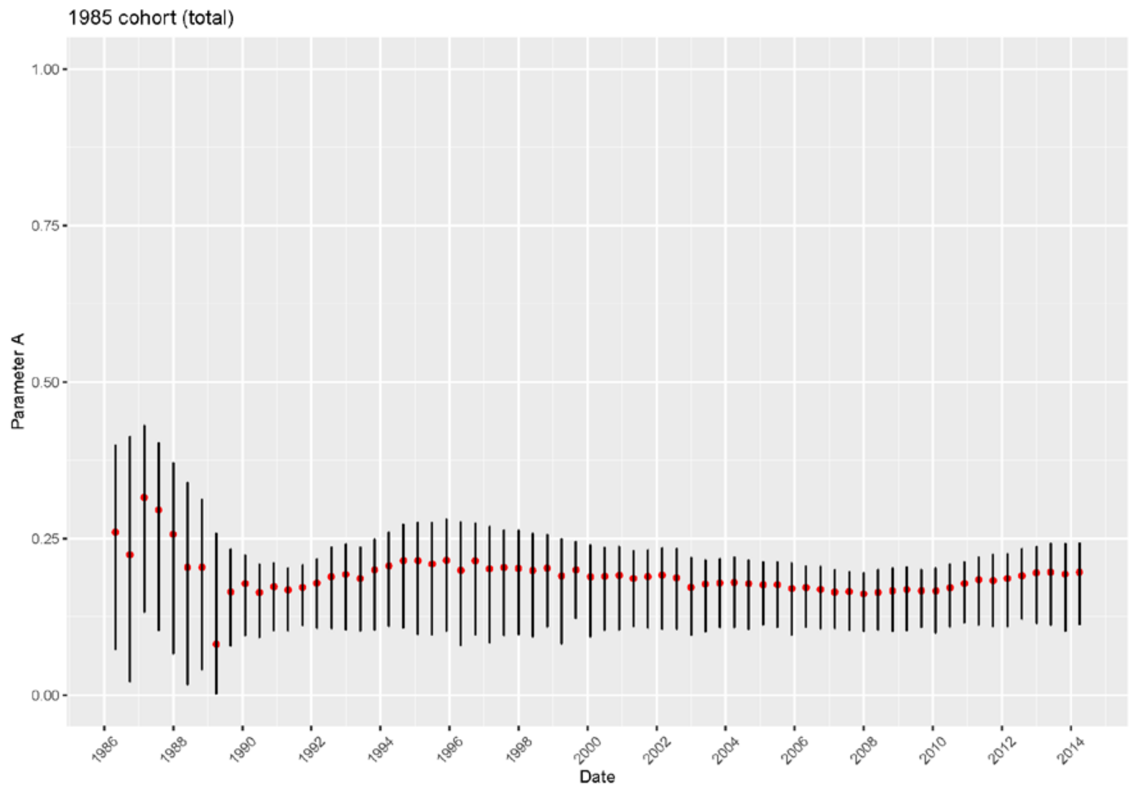

Figure 19: Transition from employment to non-employment (1985).

Here transition speed to non-employment is constant during all observed period. Nevertheless, it is worth mentioning that there is high instability at the start of labour market trajectory due to wider credible intervals compared to later stages.

Figure 20 shows difference in transition speed to non-employment between 1985 and 1970 cohorts.

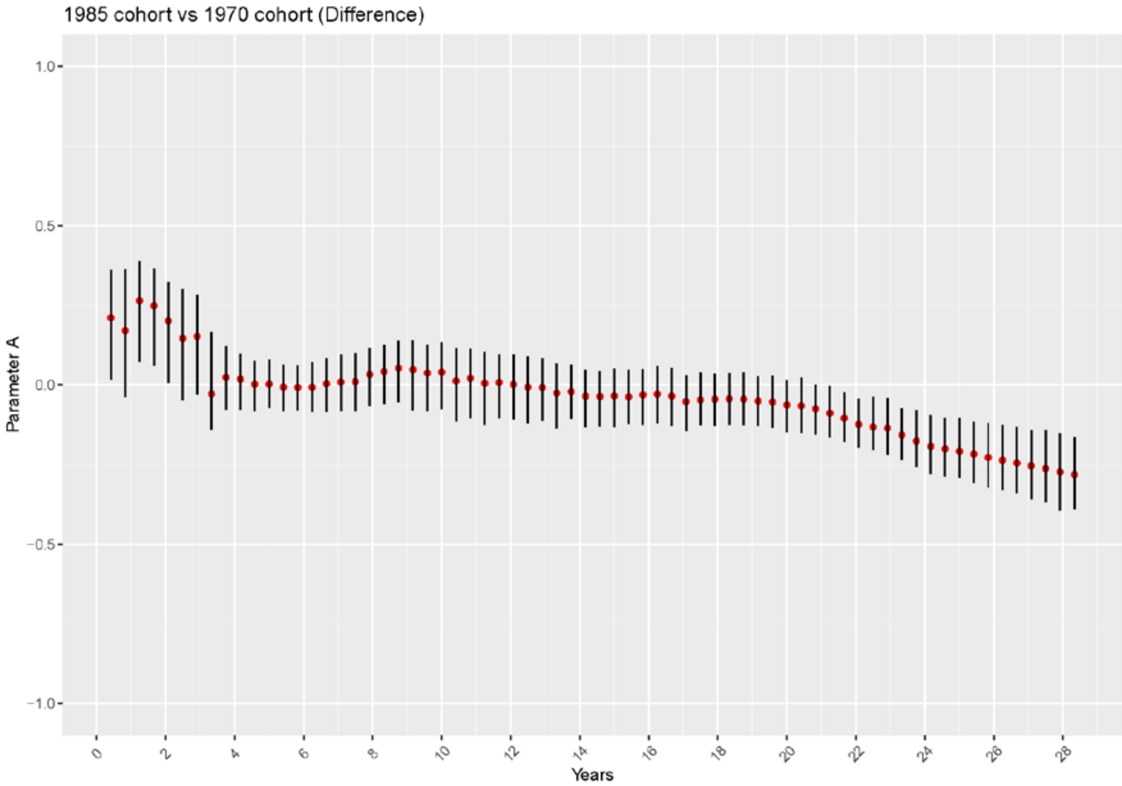

Figure 20: Difference in transition from employment to non-employment (1985 - 1970).

A similar pattern can be found in the comparison between 1980 and 1970. The main distinction can be found in that early difference between cohorts is not as obvious when comparing 1985 to 1970 versus 1980 and 1970. Nevertheless, transition speed to non-employment is higher in 1970 in the late years of follow-up probably indicating earlier shift into retirement.

Figure 21 shows proportion of employed in each time point for cohorts who entered labour market during 1970 or during 1990.

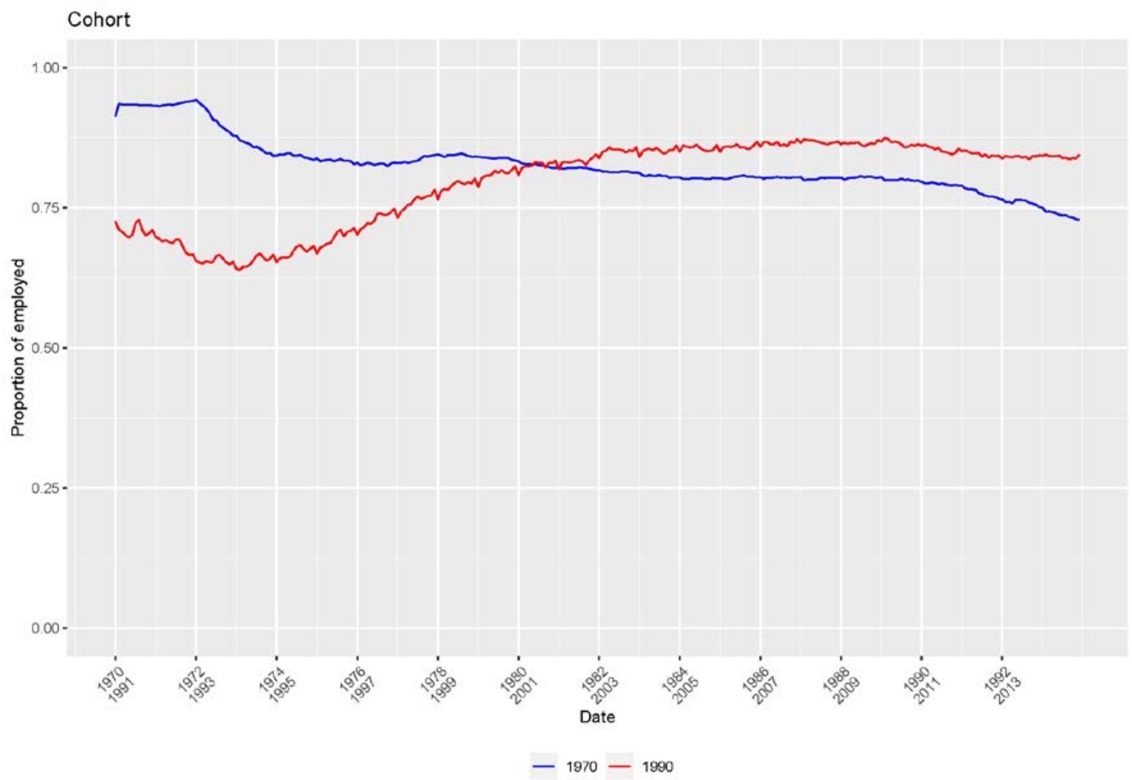

Figure 21: Proportion of employed (1970 and 1990).

Here proportion of employed is lower in the 1990 cohort compared the 1970. This lasts ten years in which there is an inflexion point and, from this point on, proportion of employment is then higher in the 1990 cohort compared to the 1970.

Figure 22 shows estimations of parameter a in each of the studied blocks for individuals who entered labour market during 1990.

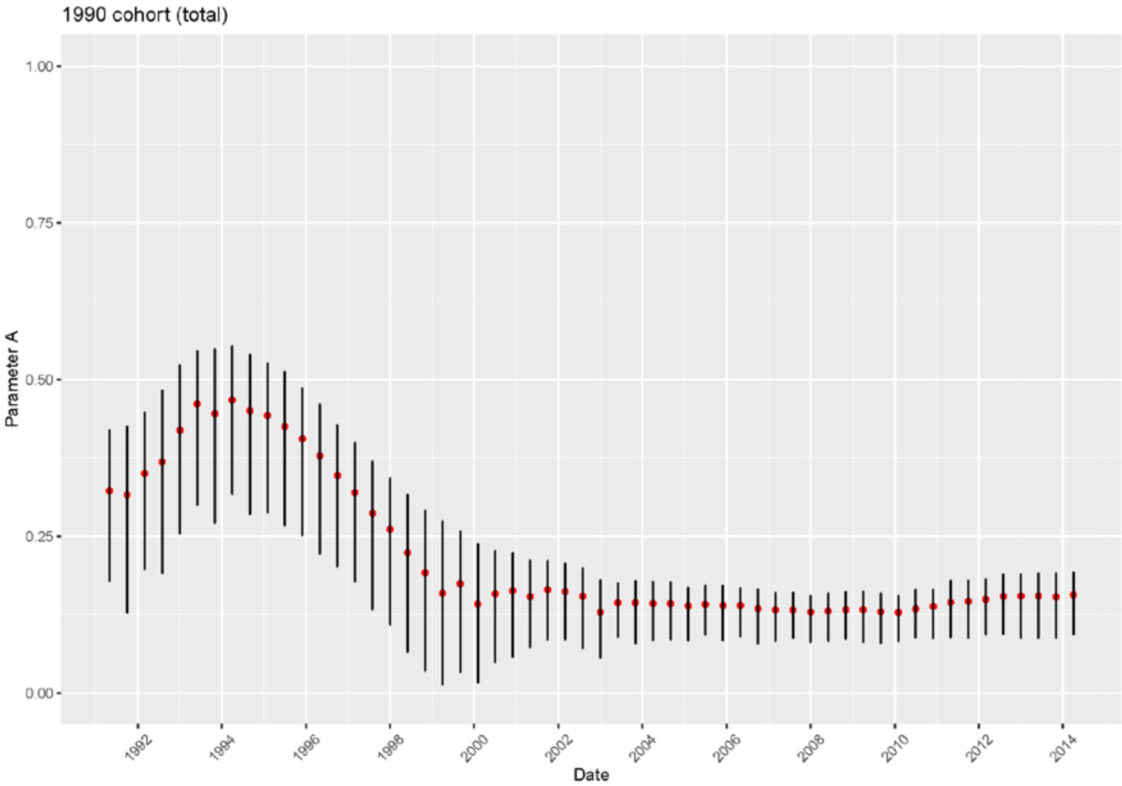

Figure 22: Transition from employment to non-employment (1990).

The 1990 cohort show high instability during their first 8 years. Moreover, early years show an increase in speed to non-employment which decreases after two years. This decrease is maintained for the next six years. From the year 2000 and onward, parameter a is always below 0 and credible intervals are narrower.

Figure 23 shows difference in transition speed to non-employment between individuals who entered labour market during 1990 and 1970.

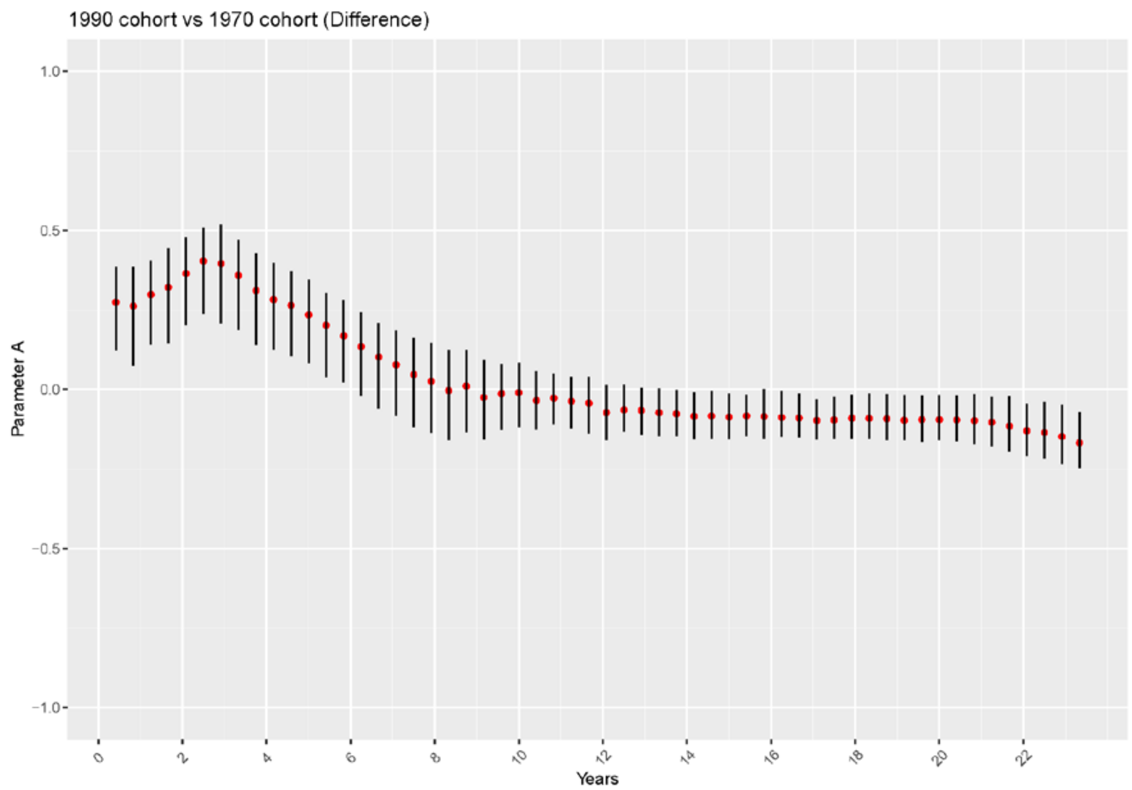

Figure 23: Difference in transition from employment to non-employment (1990 - 1970).

Transition speed to non-employment is higher during the first years after joining labour market. After this initial stage, no differences can be found between transition speed to non-employment between individuals who entered labour market in 1970 and those who entered during 1990. As in other cohorts, transition speed is higher in 1970 at the end follow-up due to earlier retirement.

We have studied results between cohorts using the oldest cohort as reference. The following results show analysis done inside each cohort. In this within-cohort study we compare differences in gender transition speed to non-employment and (in)stability.

Within-cohort

Figure 24 shows proportion of women and men employed each month who entered labour market during 1970.

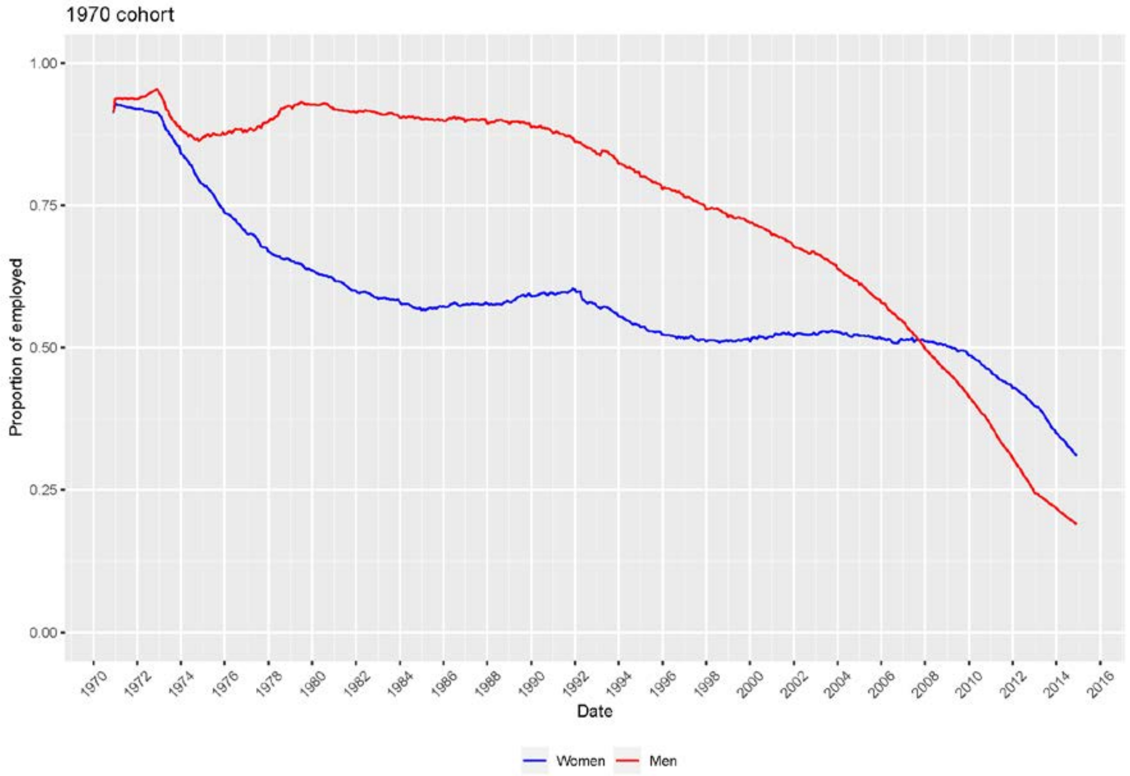

Figure 24: Proportion of observed employed by sex for individuals who entered market labour during 1970

Patters in occupation vary greatly according to gender. We can observe that there is a strong decrease in the proportion of employed starting around 1973. This decrease greatly affected women as their decrease was maintained in time for ten years compared to the two years of male individuals. Following this decrease, women have troubles in increasing their employment they, instead, maintain levels of employment. On the other hand, men increase their proportion of employment and slowly decrease during all their working life cycle.

Figure 25 shows parameter a estimation for a 5-month overlapping 10-month moving block in women who entered labour market labour during 1970.

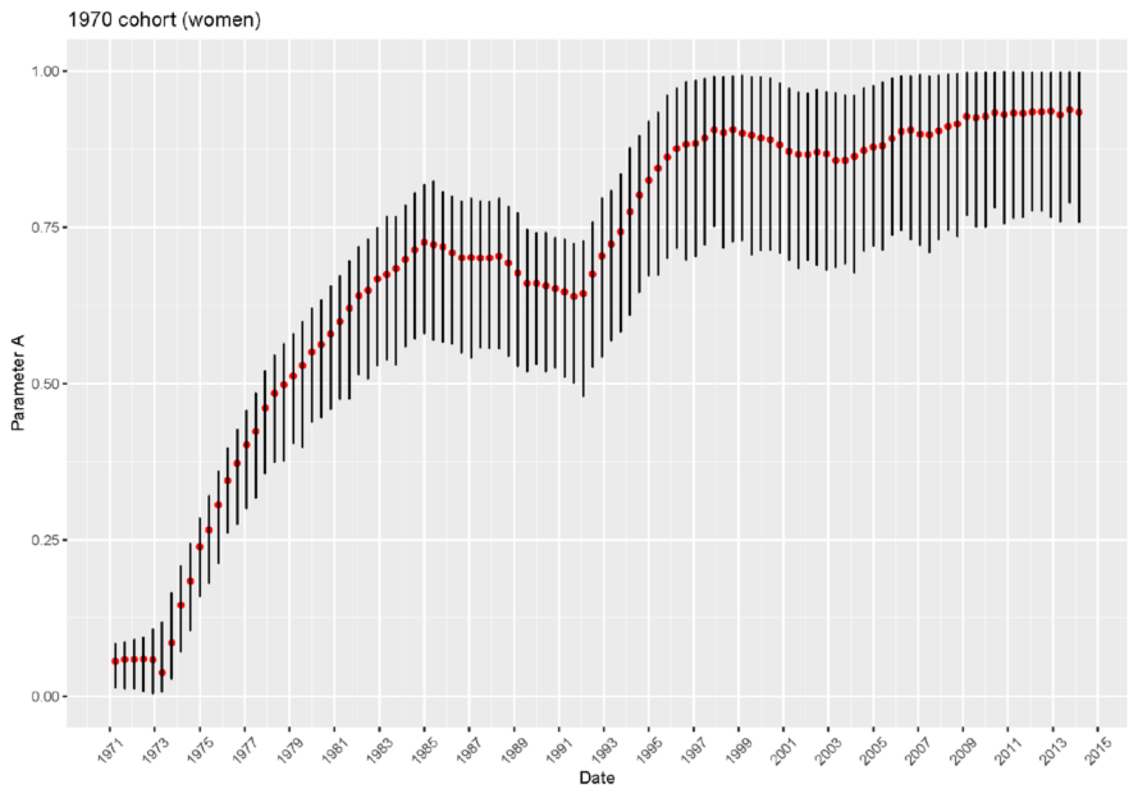

Figure 25: Women transition from employment to non-employment (1970).

Here women show a strong increase in speed of transition from employment to non-employment from 1973 to 1985. Following this increase there is a seven-year period where parameter a slightly decreases but then rapidly increases again and stays constant for the rest of the studied interval. Regarding credible intervals we can observe that they increase during follow-up showing high instability at the end of working life trajectory which may be result of high variability in retirement.

Figure 26 shows transition from employment to non-employment for males who entered labour market during 1970.

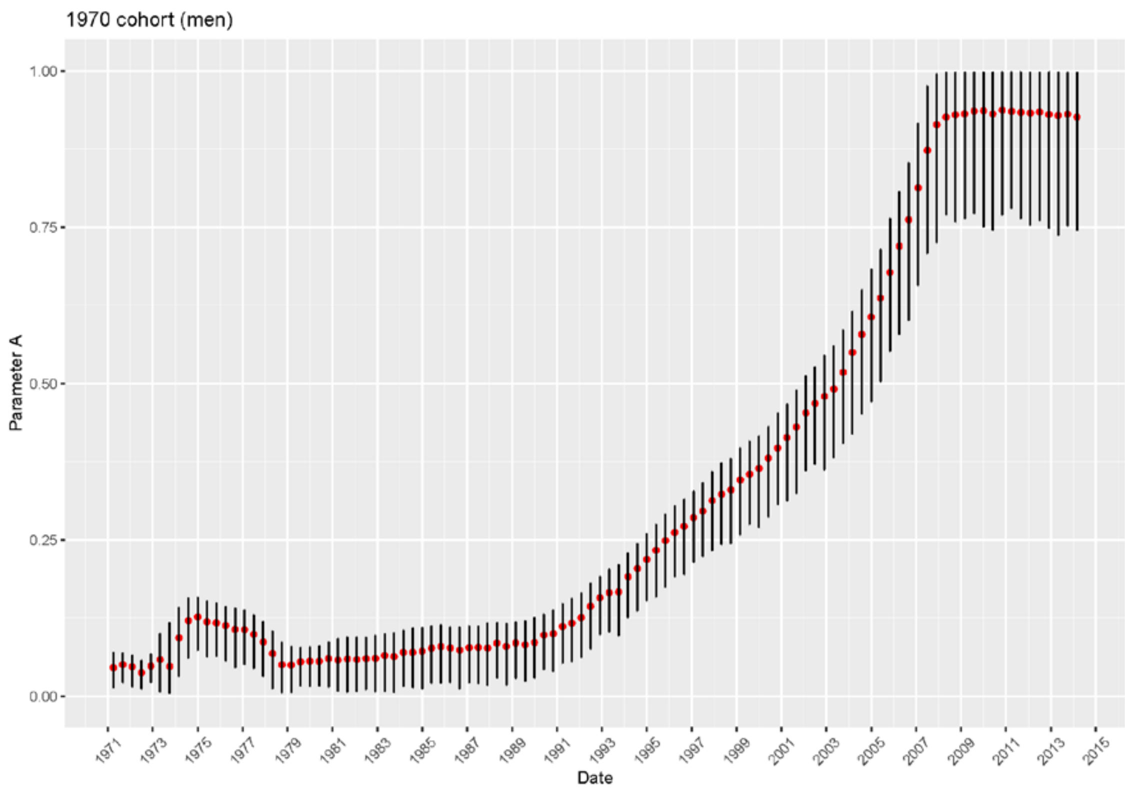

Figure 26: Men transition from employment to non-employment (1970).

Here the results are very different from Figure 25. Transition to non-employment is very low except for a small peak around 1974. Around 1995 there is an increase in transition to non-employment probably as reflection of retirement.

Figure 27 shows the gender difference in speed from employment to non-employment for individuals who entered labour market during 1970. From a Bayesian point of view the implementation of the difference of two distributions is intuitive as we can subtract both (male and female) posterior distributions. As in the non-dynamic section, if posterior credible intervals do not include zero, we will conclude that there are differences in speed between male and females. Moreover, if credible interval is below zero transition to non-employment is higher in women compared to men and the other way round if credible interval is higher than zero.

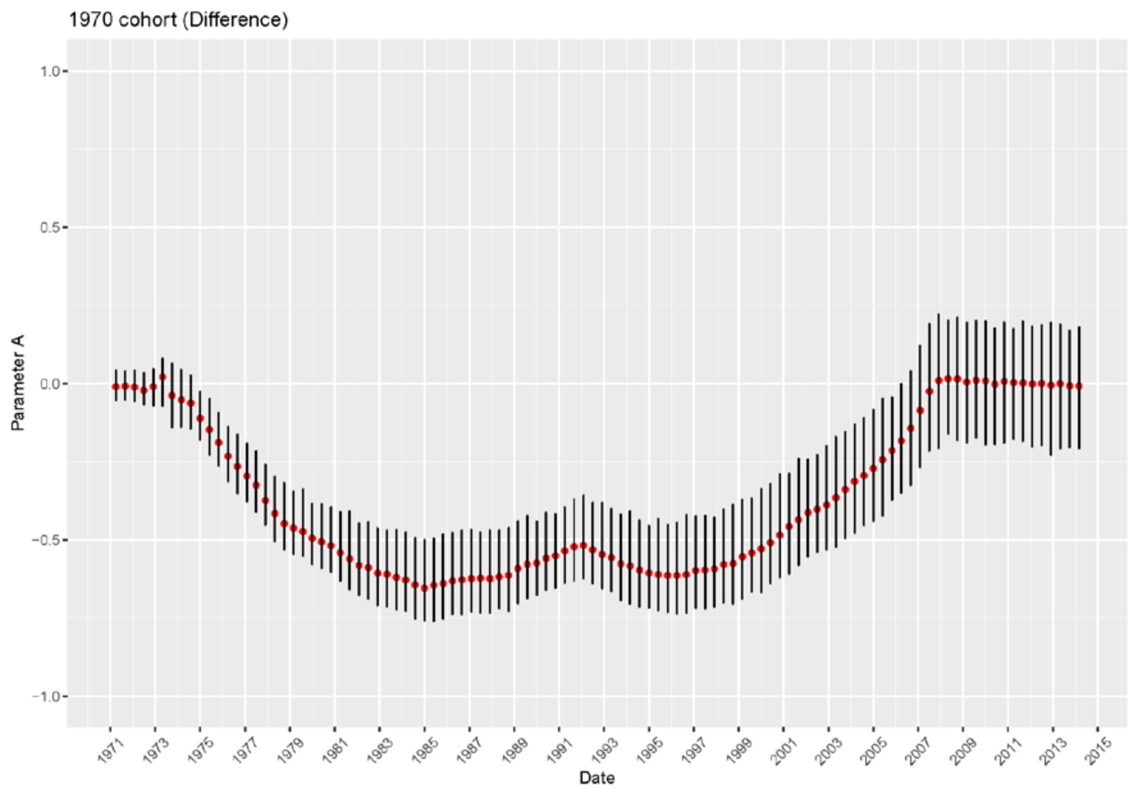

Figure 27: Gender difference in transition from employment to non-employment (1970).

No differences are found in early and late years of the market labour trajectories. However, differences in transition to non-employment can be found during the vast majority of working life period peaking to around -0.6 in 1985. Women have higher speed to non-employment and, although there is a small decrease in difference compared to their male counterparts between 1985-1992, it is not enough for gender differences to fade away.

Following with the results for 1970, Figure 28 shows proportion of occupation for males and females that entered labour market during 1975.

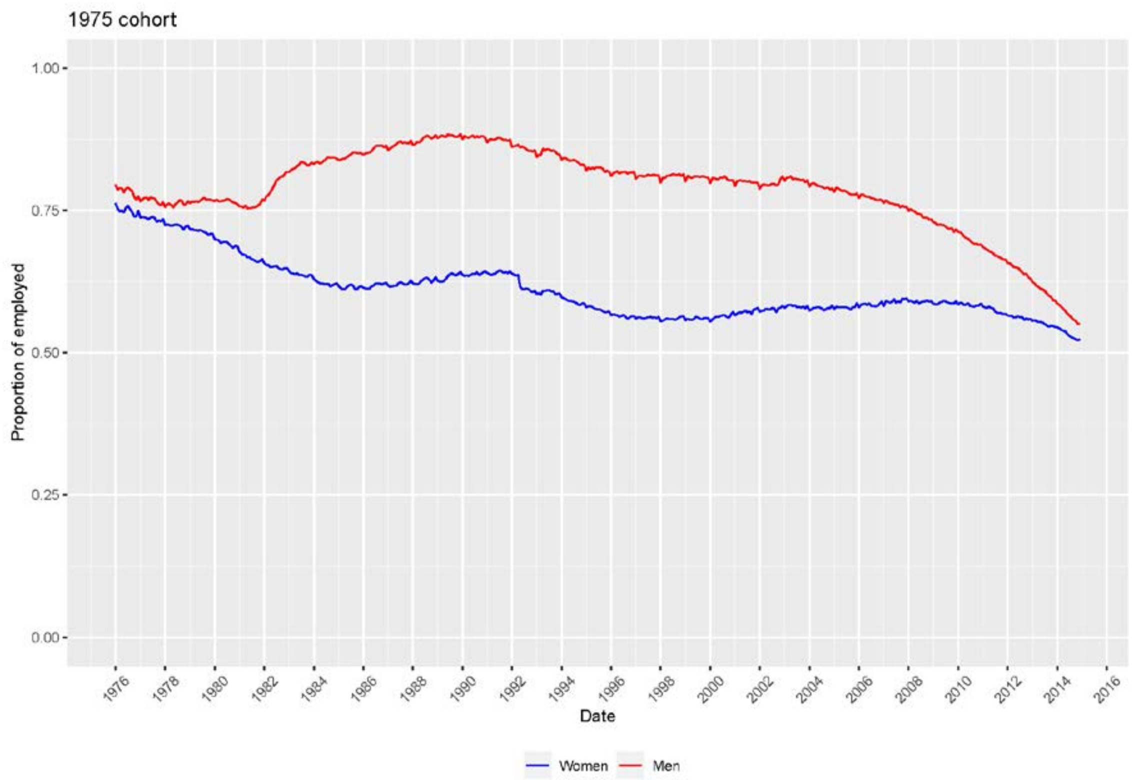

Figure 28: Proportion of observed employed by sex for individuals who entered market labour during 1975

The proportion of women employed by the end of 1975 was 0.75 while men had a slightly higher proportion. During working life cycle women decrease their proportion of employment. On the contrary, men maintained their proportion for the first six year and an abrupt increase followed in 1992 peaking around 0.85 in 1990. After this, there is a steady decrease in employment for males and have similar values compared to females by 2014.

Figure 28 shows posterior distribution of parameter a in each of 10-month intervals for women.

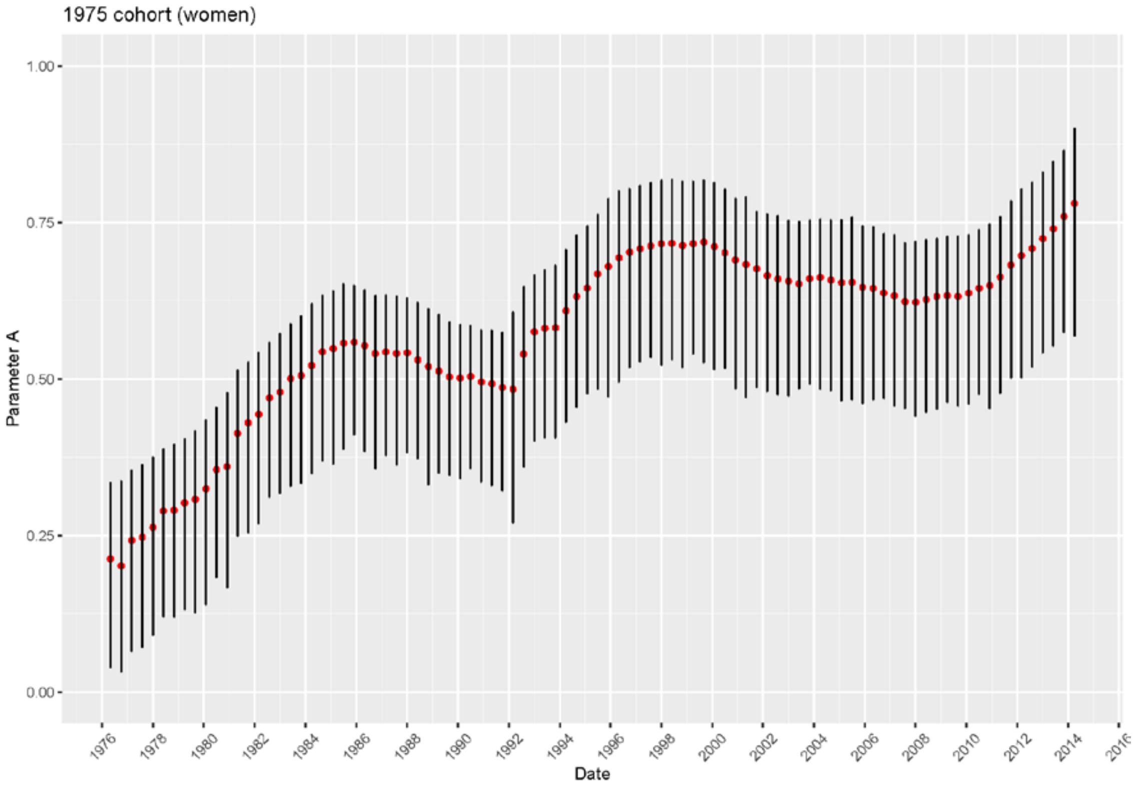

Figure 29: Women transition from employment to non-employment (1975).

Here we can see two different stages. In the first there is a steady increase of speed to non-employment that peaks in 1986 and it is then followed by a decrease in this speed. The second stage shows an increase in transition to non-employment for the period 1992 to 1999, slight decrease from 1999 to 2008 and a final increase until 2016.

Figure 30 shows transition from employment to non-employment for men who entered labour market during 1970.

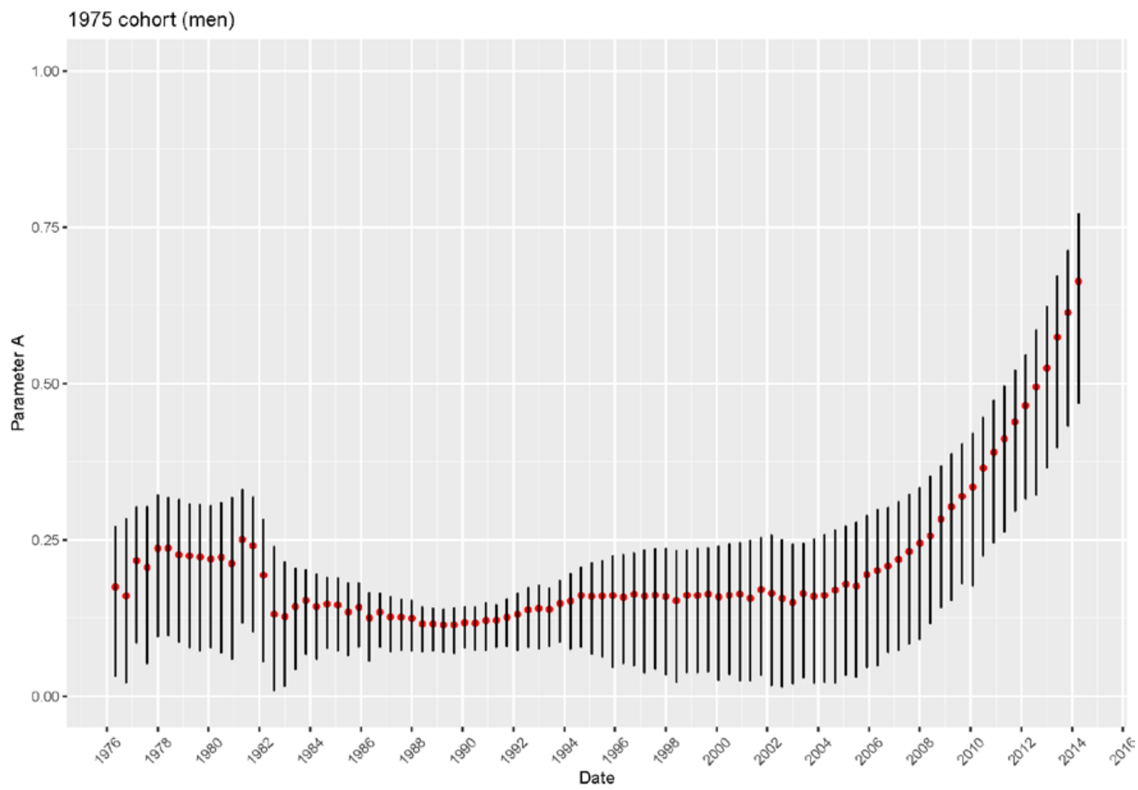

Figure 30: Men transition from employment to non-employment (1975).

Here transition to non-employment remains constant during all period until 2004 when it quickly increases showing the probable effect of retirement. It also worth pointing out that credible intervals are smaller than in Figure 29, especially from 1984 to 1995. Therefore, we could conclude that instability is higher in women compared to men.

Figure 31 shows difference in parameter estimation between women and men who entered labour market during 1975.

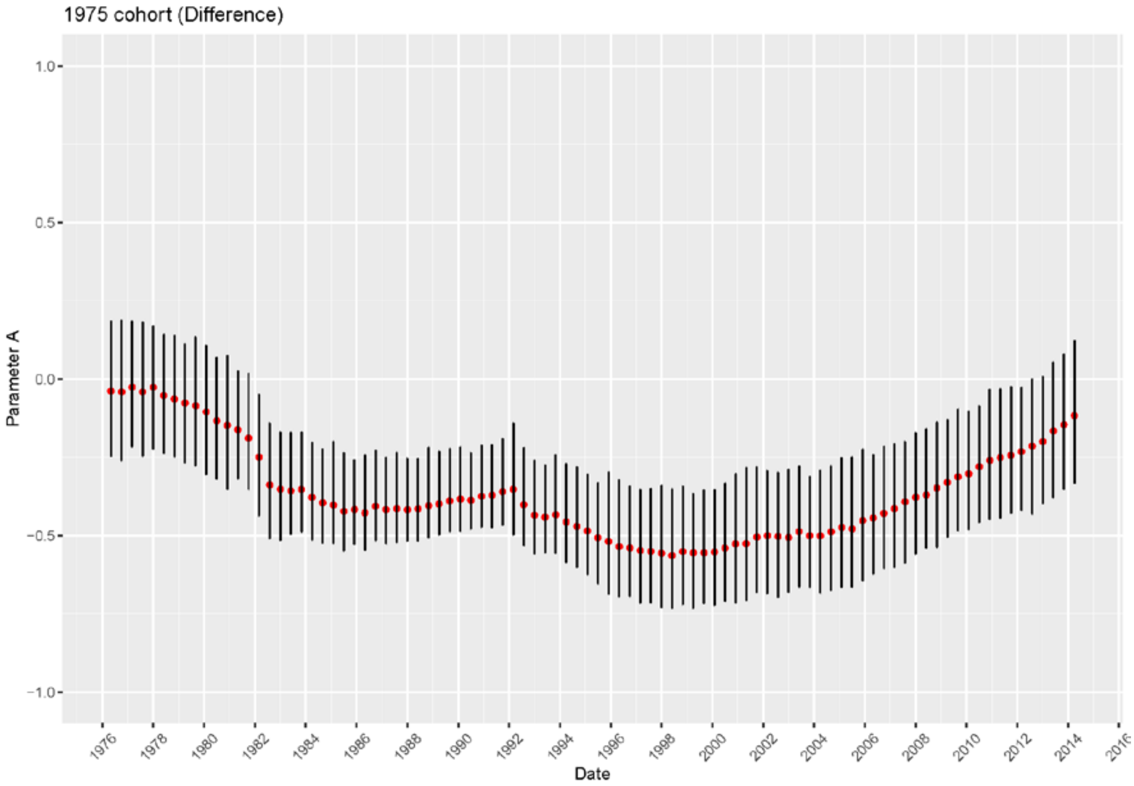

Figure 31: Gender difference in transition from employment to non-employment (1975).

Here we can observe that there are no differences between males and females at the beginning of labour trajectory and at the end of it. However, there are differences in transition from employment between 1992 to 2011 which show that males have lower speed of transition to non-employed compared to females. The peak of maximum difference is in 1996 with an approximately posterior mean of -0.55.

Moving on to individuals who entered labour market in 1980, Figure 32 shows proportion of employed stratified by sex.

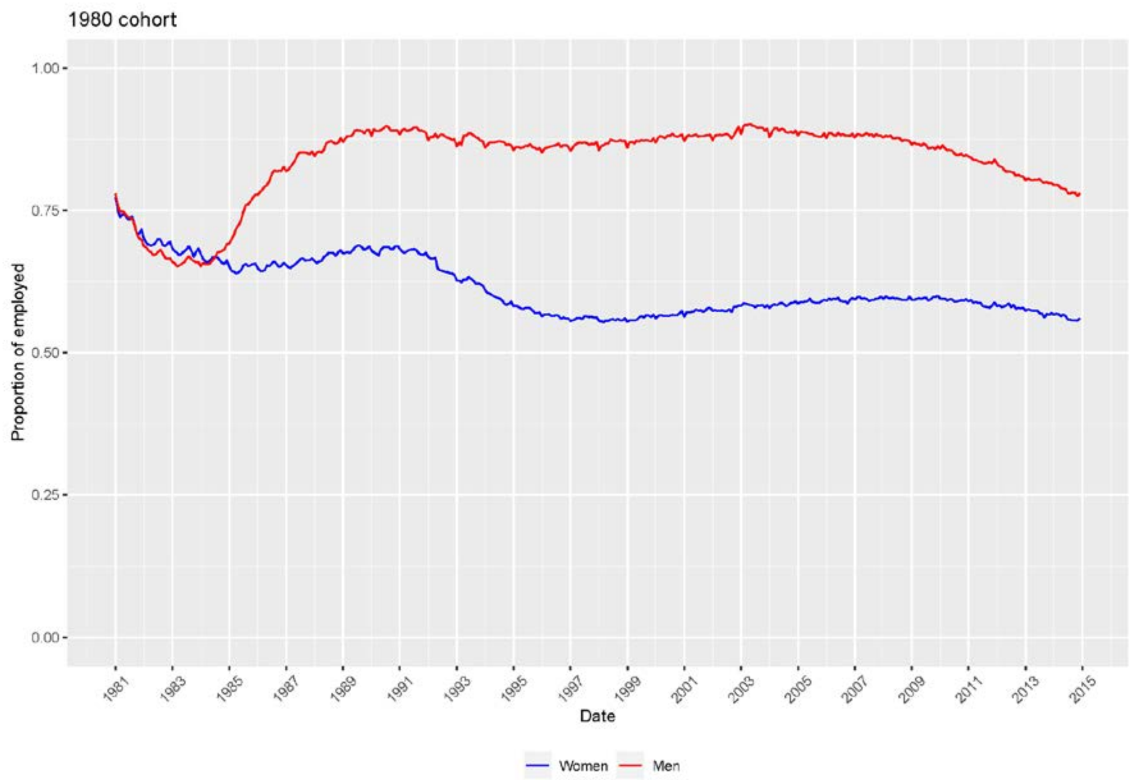

Figure 32: Proportion of observed employed by sex for individuals who entered market labour during 1980.

Similar to 1975 we can observe that proportion of occupation for both men and women decreases in the first two years after entrance to labour market. However, around 1984, there is an increase of this proportion for males which is not followed by females. Moreover, around 1992 females experienced a strong drop in occupation loosing around ten percent of proportion of employment compared to men who were not affected by this event. As seen before, by the end of the follow, both groups start decreasing their respective proportions as a reflection of retirement.

Figure 32 shows estimations for posterior distributions of parameter a in 10-month blocks for women who entered labour market during 1980.

Figure 33: Women transition from employment to non-employment (1980).

Transition to non-employment in females show similar results compared to the labour market cohort from 1975. Speed of transition increases to 0.5, then decreases for around 8 years and then drastically increases to 0.75 in 1999. Moreover, credible intervals are approximately 0.25 wide for the full duration of the follow-up.

Figure 34 shows transition from employment non-employment for men that joined labour market during 1980.

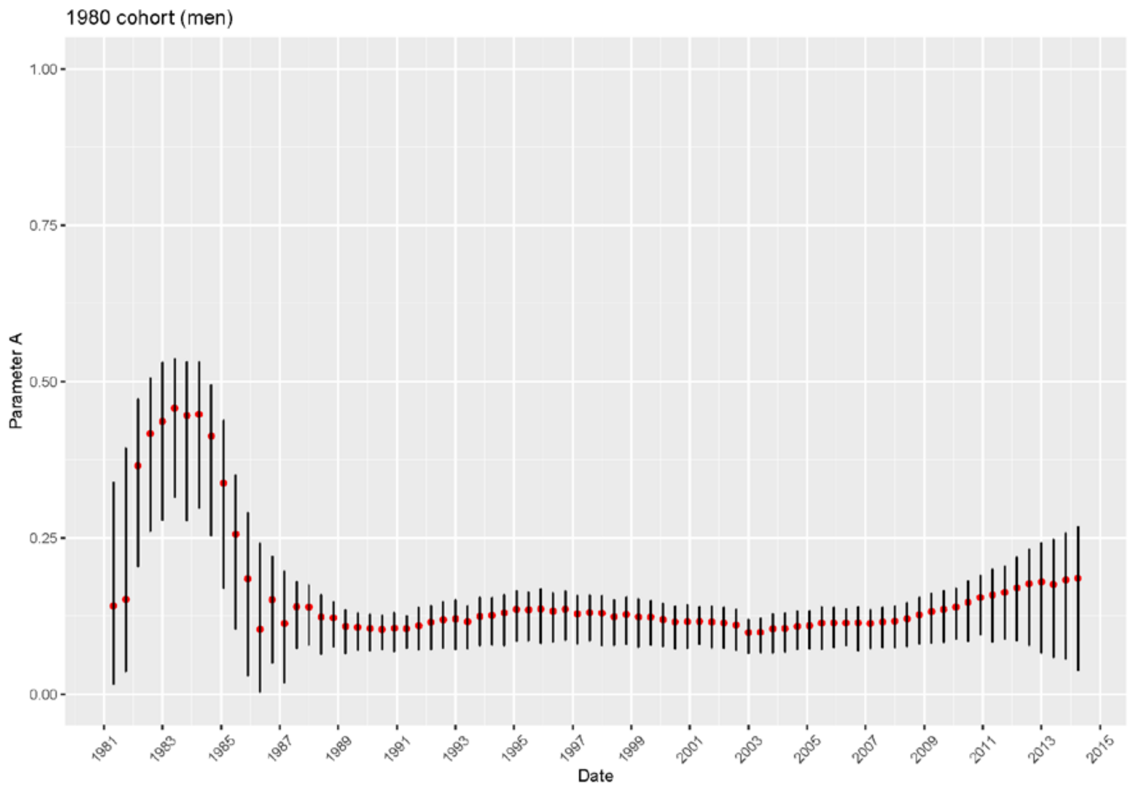

Figure 34: Men transition from employment to non-employment (1980).

Here we can observe a quick increase of speed to non-employment in the first two years followed by a decrease of the same magnitude. It should be noticed that credible intervals are wider in this first 7 years but then they shrink for the vast majority of the analysed period. This shows how young men have high instability at the start of their labour trajectory, but it then decreases until retirement age. On the contrary, our results show that instability in women is high during all working life cycle.

Figure 35 shows gender difference in parameter a estimations for individuals who entered labour market during 1980

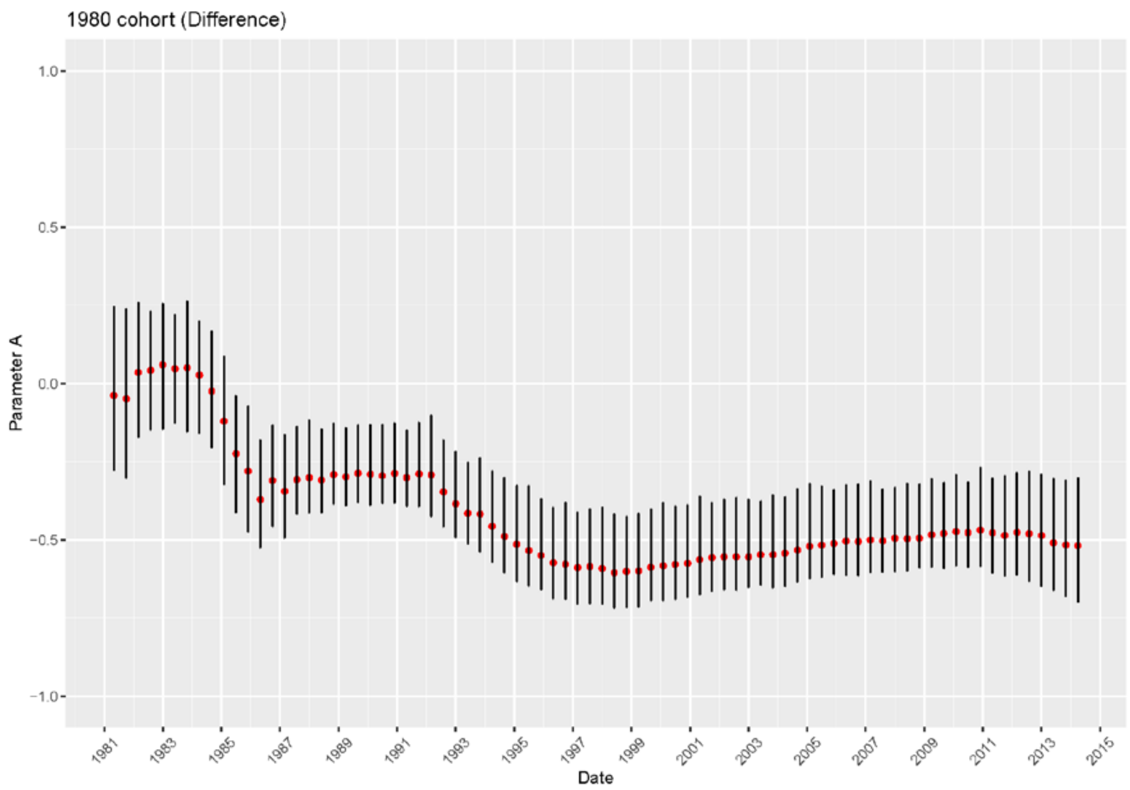

Figure 35: Gender difference in transition from employment to non-employment (1980).

In the early years of working life cycle there are no differences between women and men in transition speed to non-employment. However, starting in 1984, gender gap increases up to a maximum of 0.5 in 1999. This gap is held constant during all follow-up probably because this cohort follow-up is no long enough to reflect retirement.

Figure 36 shows proportion of employed both for males and females who joined labour market during 1985.

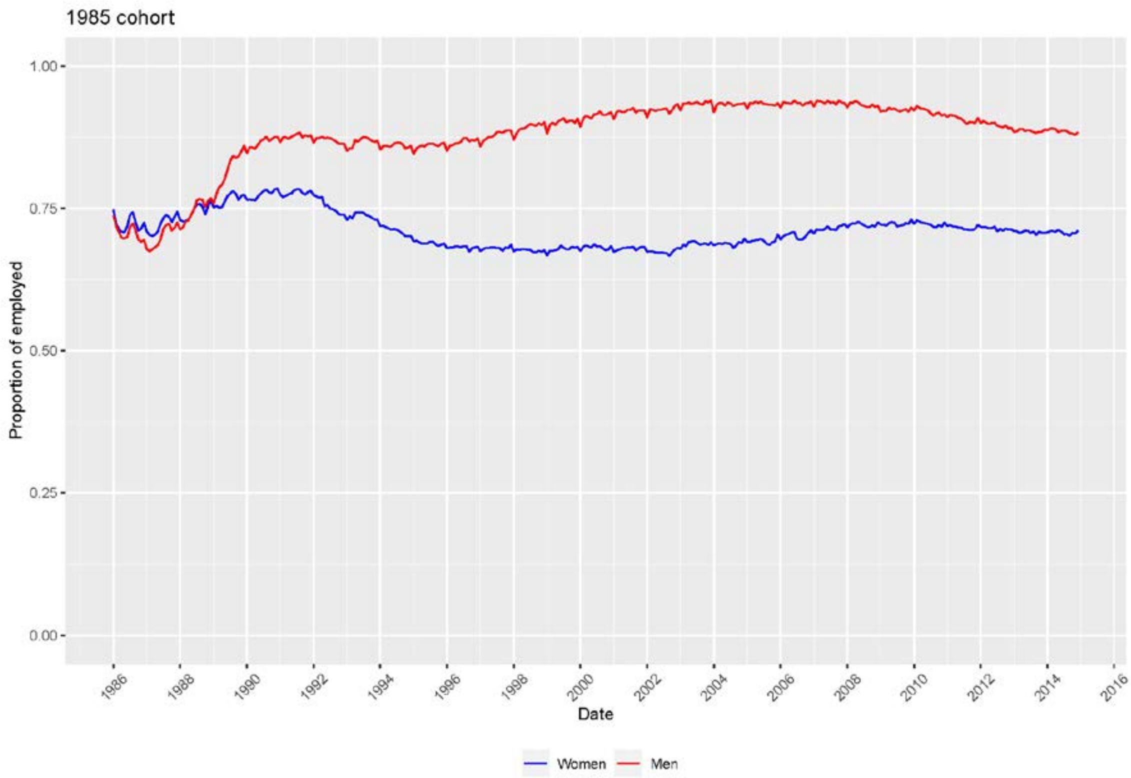

Figure 36: Proportion of observed employed by sex for individuals who entered market labour during 1985.

Observed proportion of employed shows no differences between males and females at the start of labour market cycle but after 4 years a gap can be observed. This gap is smaller than in past cohorts indicating some progress towards reducing the breach in employment.

Figure 37 describes posterior distribution of parameter α in 10-month blocks for women who entered labour market during 1985.

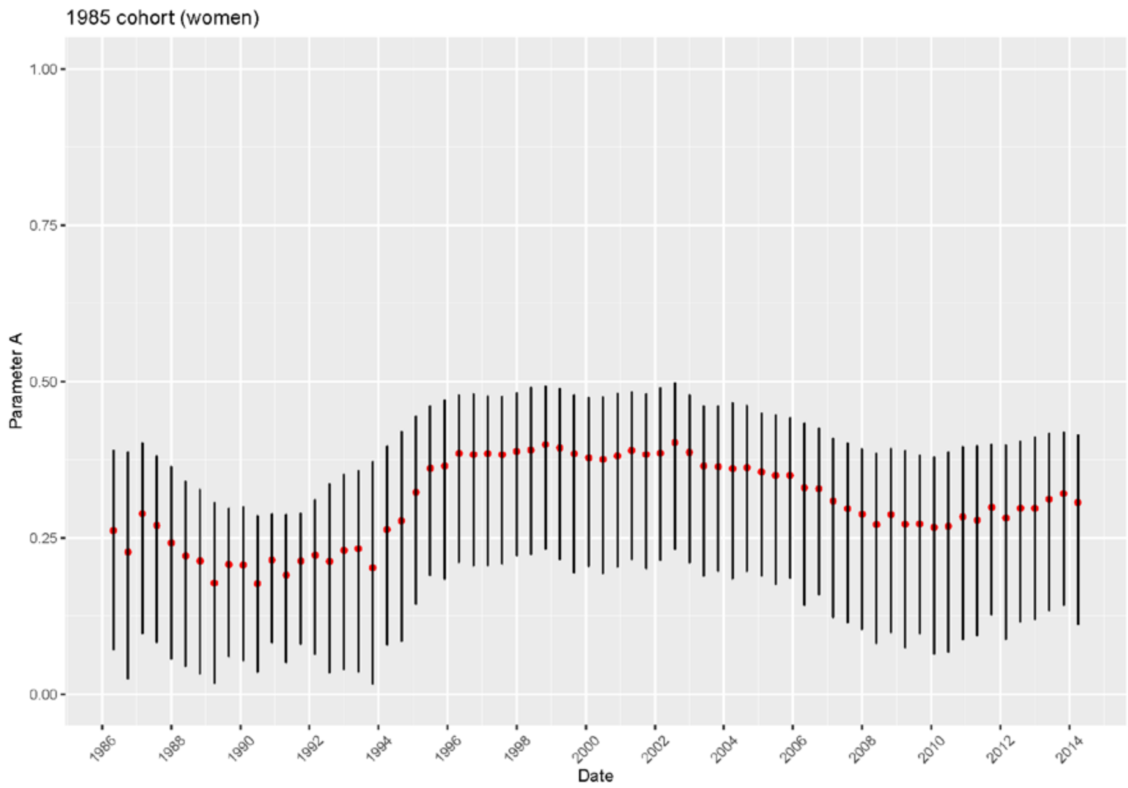

Figure 37: Women transition from employment to non-employment (1985).

Here a different dynamic can be observed compared to the rest of cohorts described. Transition speed to non-employment is lower compared to them. However, credible intervals are still around the same width and constant during all working life cycle. Therefore, although job loss is not as high as in other cohorts, instability is still of a similar magnitude.

Figure 38 shows transition from employment to non-employment for men who entered labour market during 1985.

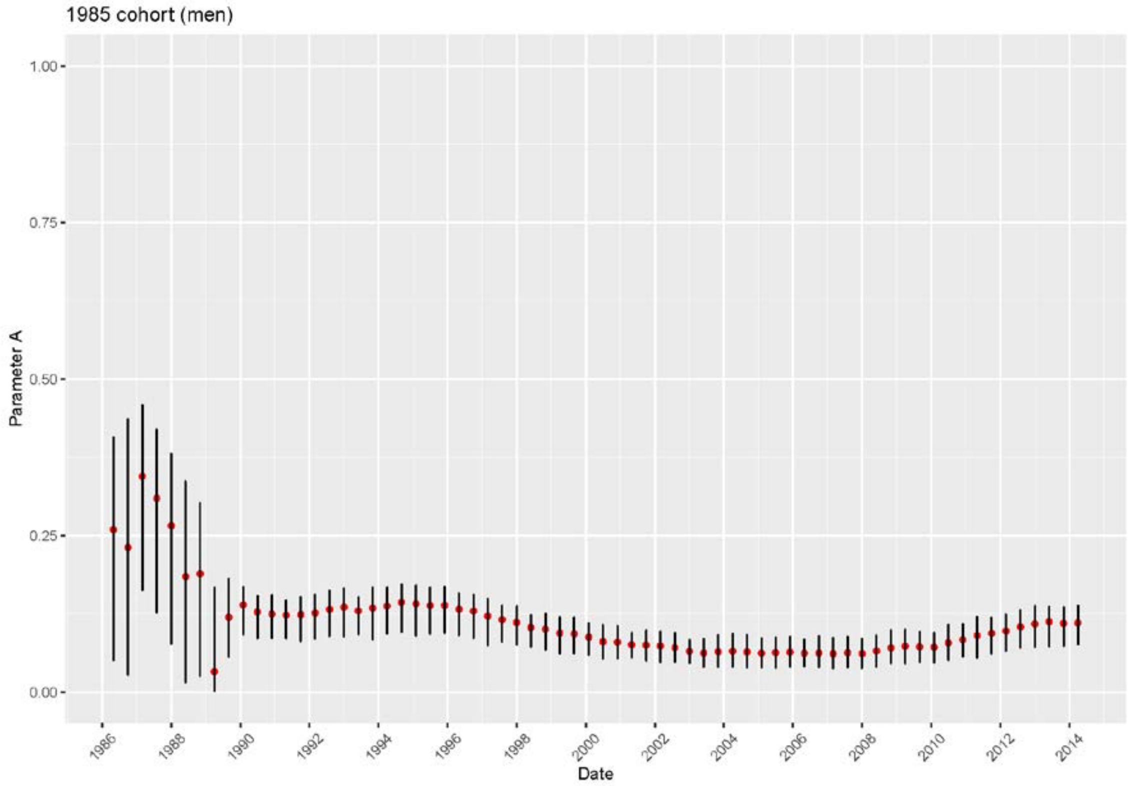

Figure 38: Men transition from employment to non-employment (1985).

Similar results compared to 1980 can be observed in transition from employment to non-employment for men who entered labour market during 1985. High instability for the first 5 years followed by stability for the rest of the period. This stability is not shared by female counterparts that, even though reduced their speed of transition to non-employment, still suffer from high instability during all follow-up period.

Figure 39 shows difference in transition from employment to non-employment between males and females for the studied period.

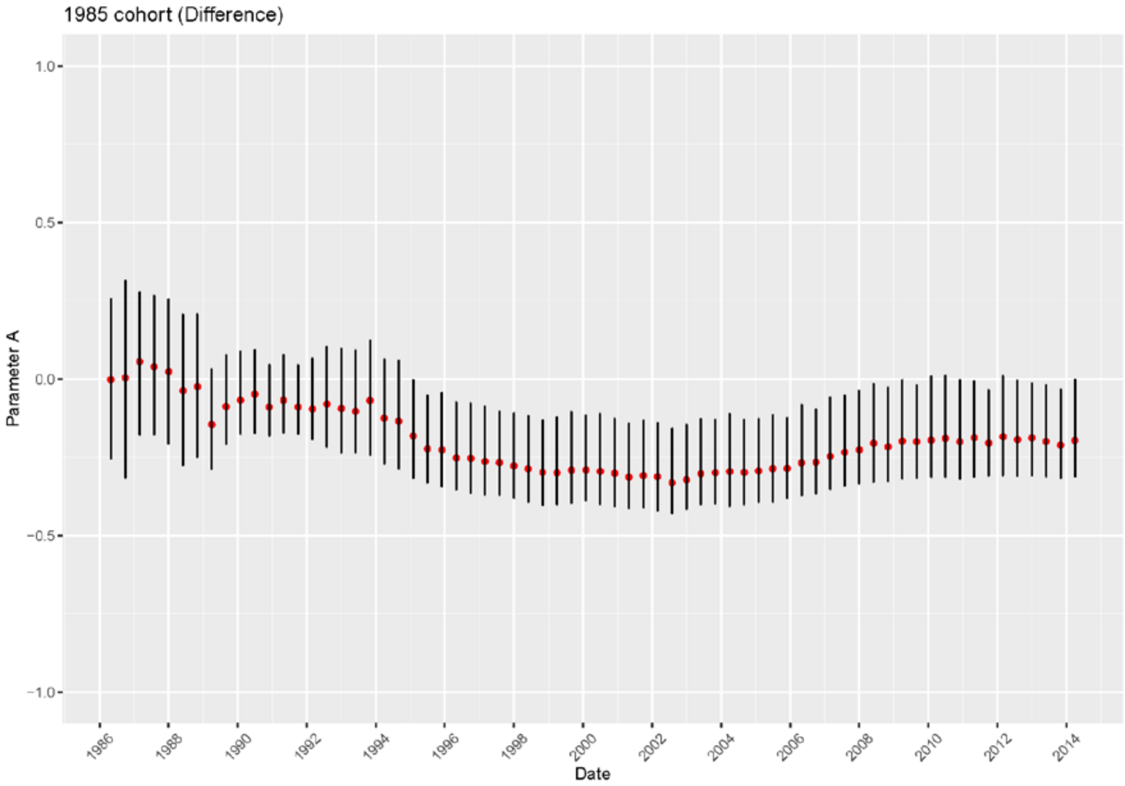

Figure 39: Gender difference in transition from employment to non-employment (1985).

As expected, when studying Figure 38 and Figure 37 our results show a decrease in the gender gap. However, we do find that males have lower speed of transition from employment to non-employment between 1996 and 2008.

Figure 40 shows proportion of employed stratified by sex for individuals who entered labour market in 1990.

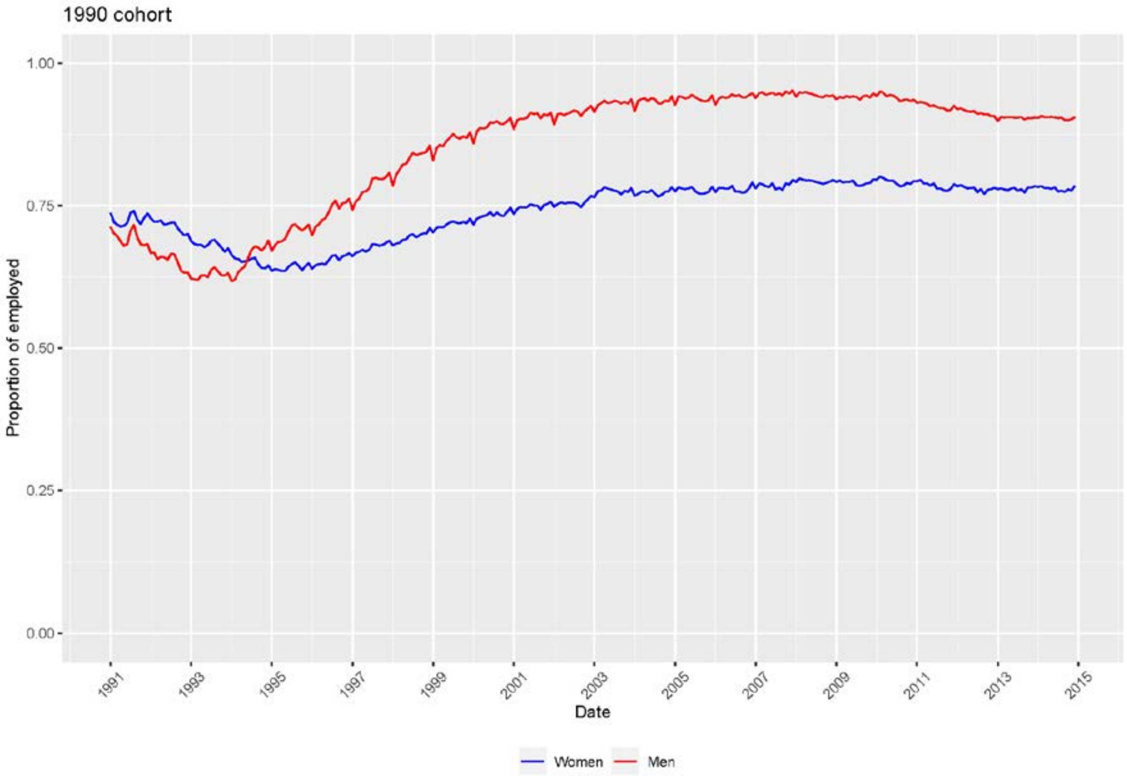

Figure 40: Proportion of observed employed by sex for individuals who entered market labour during 1990.

Interestingly we can observe that the proportion of employed in our sample is higher in women compared to men for the first 4 years. This phenomenon did not occur in previous cohorts. Nevertheless, the proportion of employed in men rapidly increases and, after these initial four years, they surpass women. This gender difference is carried on until the end of follow-up.

Figure 41 shows speed of transition from employed to non-employed for females who entered labour market in 1990 and are followed until 2014.

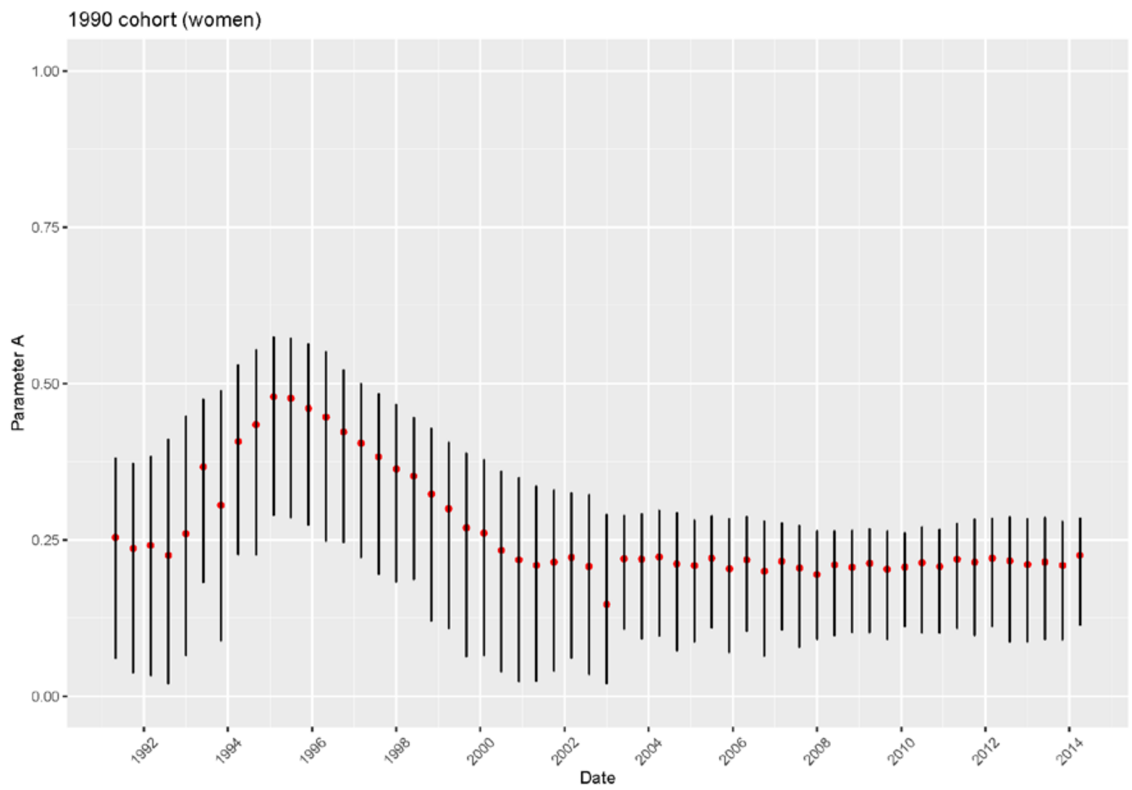

Figure 41: Women transition from employment to non-employment (1990).

Results show that credible interval are still large during all follow-ups. However, from 2004 onward, these intervals decrease in width. Moreover, transition to non-employment remains constant except for an increase during the period between 1994 and 1999.

Figure 42 shows posterior distribution of parameter a in 10-month blocks for males who entered labour market during 1990.

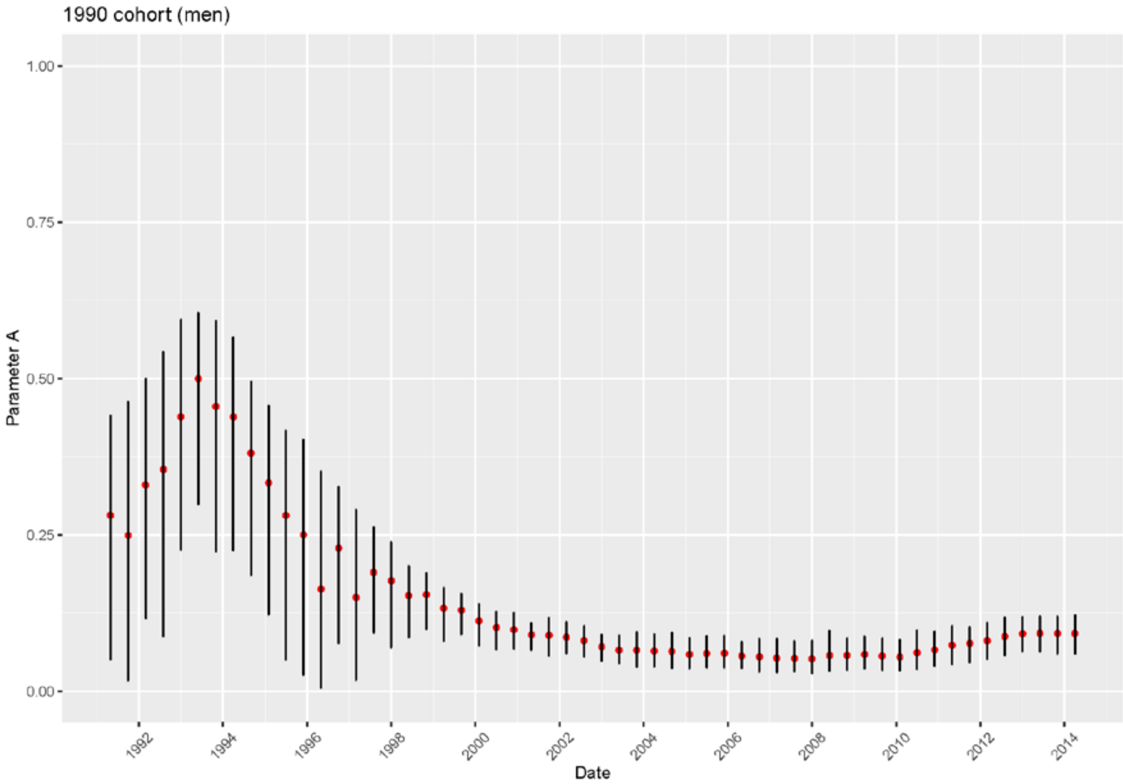

Figure 42: Men transition from employment to non-employment (1990).

Transition from employment to non-employment increases to 0.5 around 1993 and then decreases to 0.05 in 2005. Interestingly, as previous cohorts, only the first years of the labour trajectory show high instability compared to the following years where credible intervals are narrow.

Figure 43 shows the posterior distribution of the difference between males and females in parameter a.

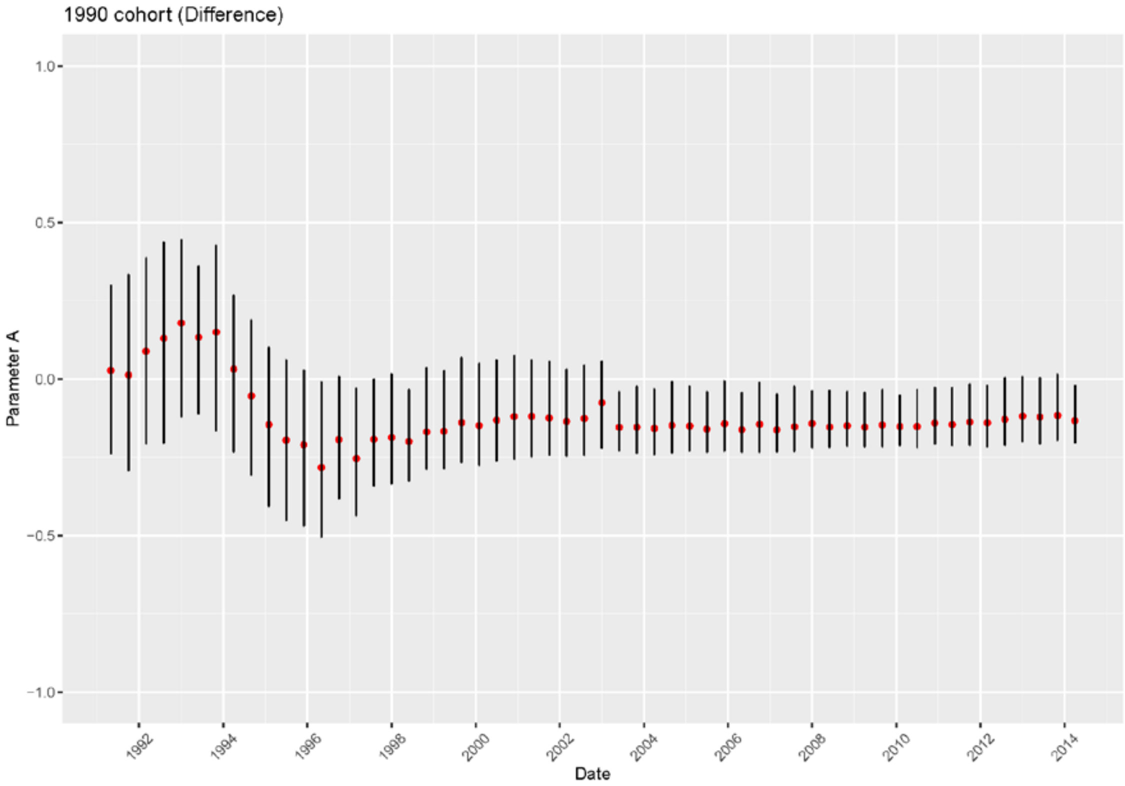

Figure 43: Gender difference in transition from employment to non-employment (1990).

Results show no difference in transition from employment to non-employment between males and females during the follow-up period. Sometimes points do show differences but the majority of posterior distributions do include zero. Moreover, variability is higher at the start of the labour trajectory compared to mid-end term.

4.3. Working life expectancy and Employment life expectancy

Using data from the Spanish National Statistics Institute we study the effect of working life expectancy and employment life expectancy on entrance to market labour cohorts from 1976 to 2014. Appendix 11 shows all calculations as described by (Hytti et al., 2004).

We will start describing the results obtained for the working life expectancy and we will follow then with employment life expectancy.

4.3.1. Working life expectancy

From a cross sectional point of view, we can study the relation between age and year. For individuals who were sixteen, the initial age of incorporation into the labour market, differences can be found according to the studied year. During the decade of 1970s people had an average working life expectancy of 27.6 years which is increased to 28.4 for those who were sixteen in 1989. This trend continues for the following years peaking 34.7 in 2014. When studying expected working life, that is, at 16 years, two paradigms can be found. WLE increased at a slow pace from 1974 to 1998 but, from 1999 to 2014, working life expectancy increases from 30.2 to 34.7. A similar pattern can be found at the age of 40, with stagnation of values from 1976 to mid-1990s followed by a slight increase for a decade. Then, from 2005 onwards, the expected years in market labour at the age of 40 strongly increase from 15.7 to 18. However, at the age of 55 no trend can be found and working life expectancy between all studied years and values oscillate around 3.7 and 5 with highest values at the beginning and at the end of the studied period. All these results can be found in Appendix C.4.

Figure 16 shows fictional labour market entrance cohorts from 1976 to 2014 grouped by decade. Therefore, age is represented in the x-axis and expected years in the labour market in the y-axis which is synonym for working life expectancy. As there are many cohorts, we decided to group them by decades so we have a graph for each decade resulting in 5 graphs. It must be noted that last graph has few observations due to limitation in follow up.

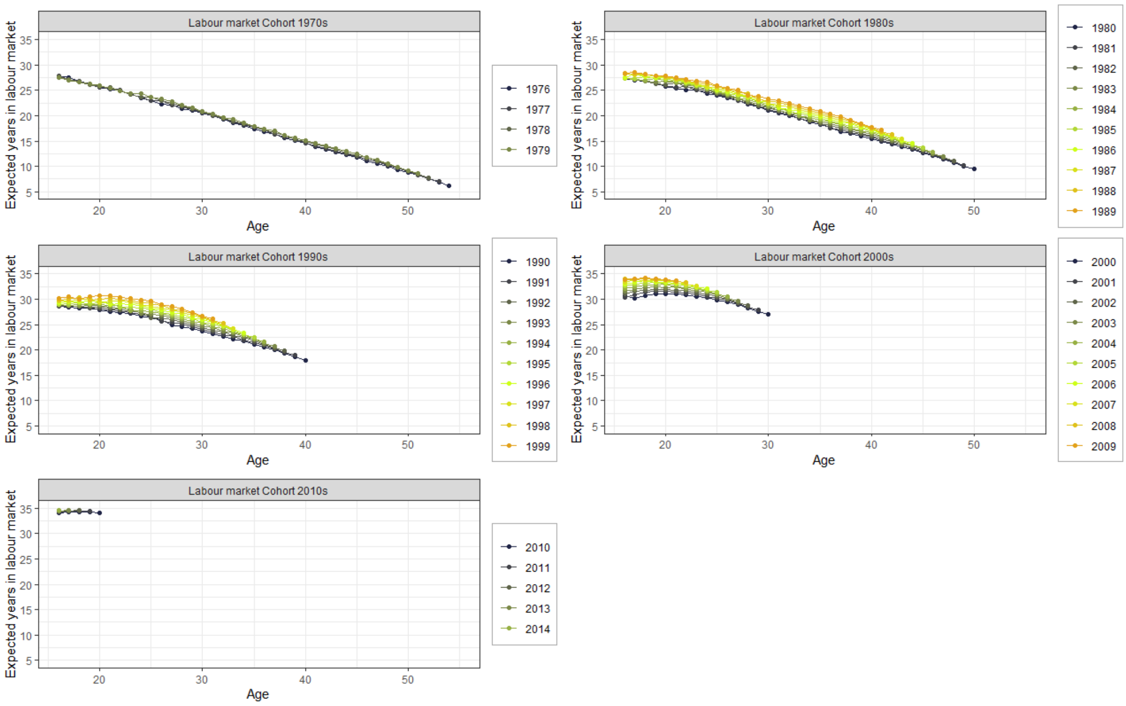

Figure 44: Decade specific Working life expectancy.

Another aspect worth mentioning is the differences in variability and therefore instability across each decade. Cohorts which entered labour market during the 1970s showed less variability than other decades as all four series seem to overlap each other. Cohorts of entrance for the 1980s decade show higher instability in all ages except for those older than 45. This instability shifts to early ages for cohorts of entrance in the 1990s and instability is obvious for young people in the 2000s cohort. Moreover, looking at results from this cohort, it seems that there is an increase of the working life expectancy with the age. This might be a reflection of labour instability as individuals suffer from high instability when joining labour market at early ages which translates into a stagnation or even an increase (such as this case) of working life expectancy. Finally, there is not enough information to describe results from 2010s as we have very few time points.

4.3.2. Employment life expectancy

Appendix C.3 describes employment life expectancy by age and year from a cross sectional perspective. Results from ELE at 16 show a different dynamic compared to WLE. Here, higher values can be observed during the 1970s, as a consequence the crisis and industrial restructuring in Spain from 1975-1990 that caused important job losses and a sharp rise in unemployment, and in early 2000s, just before world financial crisis. Contrary to working life expectancy, in 1970 people at 16 had high employment life expectancy. For people who were 40 years old, ELE was around 13 years but it decreases during the decades of 1980 and 1990. It is at the start of the new century when values start increasing peaking 15.7 in 2007. For individuals who were 55 in each year, results show two different stages. During the decade of 1970s values are the highest of all the observed years with values around 4.0 to 4.5. In the decades of 1980 and 1990, values oscillate between 3.5 to 4.0. Finally, decade of 2000 shows the same trend as the 1970s with values from 4.0 to 4.5.

Figure 45 shows decade specific employment life expectancy using fictional cohorts.

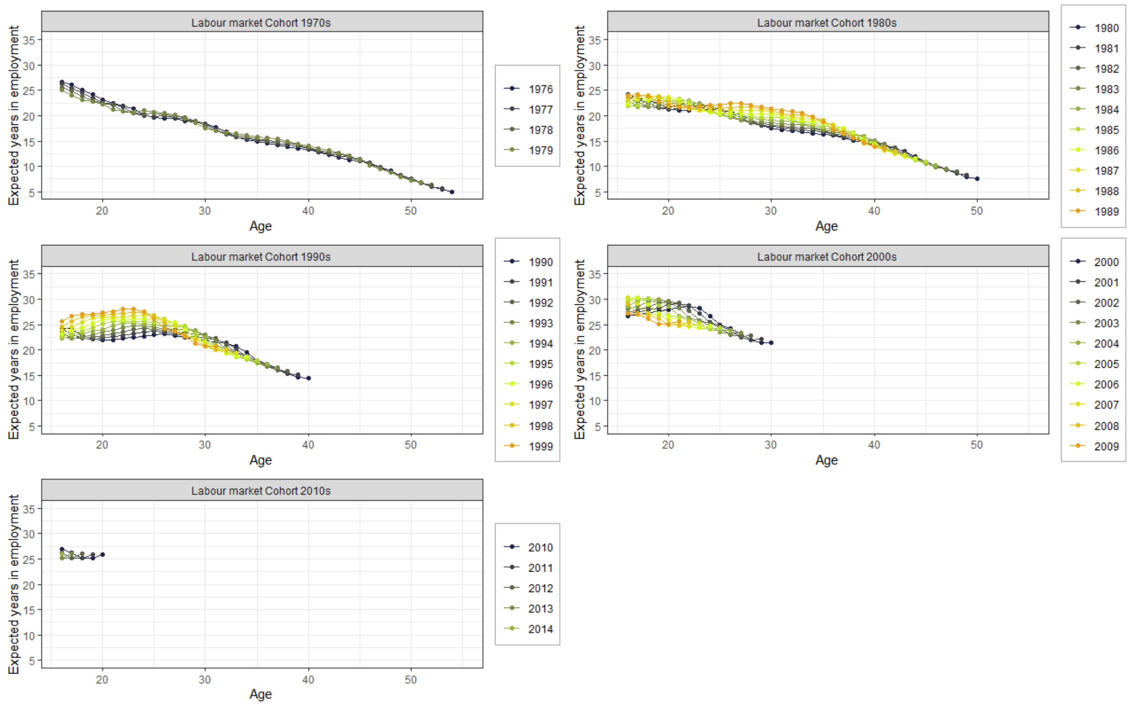

Figure 45: Decade specific employment life expectancy.

Results show that cohorts from the early 2000 had higher starting expected years in employment, some of them even higher than 30. Is this decade and the 1990s where highest variability in starting ELE can be found. On the contrary, individuals who entered during 1970 all experience similar starting ELE and this low variance is maintained during all studied period. Coming back to cohorts from 1990s and 2000s, although there is high variability in ELE at the start of their working career, variability gradually decreases and, when individuals are around 30 years old, no apparent differences can be found between cohorts of the same decade. A different dynamic can be found in the cohorts from the 1990s where only slight differences in ELE can be found in early years but these increase peaking at the age 30. For this decade we can find three stages, an early stage with slight differences in ELE; mid stage with high variability and a final stage with no differences between cohorts.

It is also worth noting that some labour market cohorts present noticeable trends. For instance, the cohort from 1989 showed the highest employment life expectancy at the age of sixteen compared to the rest of cohorts of that decade. However, a few years later –around the age of 23- the experienced the lowest ELE meaning that it strongly decreased in only 7 years. Nevertheless, it quickly increased and by the age of 27 this cohort had the highest ELE of all 1980s cohorts for the next ten years. Similarly, the 1999 cohort had the highest ELE for the first 10 years but it quickly declined to be the lowest ELE of the 1990s cohort.

5. Discussion

The primary aim of this thesis was to develop a novel methodological framework for the study of labour (in)stability. As our method focuses on transitions from one state (or compartment) to another, this could also be applied to other areas of Social Science. Whenever we got longitudinal data and want to study speed transition between states, we can use compartment models. Moreover, if this speed could be very different depending on the selected time point interval, one could use dynamic compartment models to analyse the time-varying trends of transition speed. However, our methodology presents various limitations which will also be discussed and are the starting point for future works.

Bayesian compartment modelling has been applied to study differences between and within market labour cohorts from the perspective of transitions between employed and non-employed as well as between insiders and outsiders. Results showed that the 1990s cohort was the only one without differences between males and females regarding to the transition speed to non-employment. However, when analysing transition speed from outsider to insider we did find that men transition was quicker compared to females in all studied cohorts. This may happen because, although there has been some effort in narrowing the gender gap in the context of labour market, there is still a long way to go, and females still suffer from gender segregation which is observed in the transition speed to a more stable labour position. Although, the non-dynamic approach to study (in)stability is helpful to have a summarised picture, the different stages that occur inside labour trajectories limits this approach that could be overcome using a dynamic approach. Moreover, the use of dynamic compartment model helps us understand each of the stages that happen inside a labour trajectory enabling a more precise explanation of this gender gap as well as differences between labour market cohorts. Our results show that the application of dynamic compartment models opens a new way of studying (in)stability as here our focus is on transition speed and not in time spent in a state or factors explaining a transition such as other authors have studied. Indeed, two key features of the Spanish labour market emerge from our analyses: differentiated gender (in)stability patterns and Spain as a country with high susceptibility to economic shocks.

Focusing on the sociological aspects of this thesis there is a key point for discussion that arises from the notable differences in labour (in)stability between males and females. Arber & Ginn (1995) argue that, during late twentieth century, there is a progress towards equality between women and men in relation to labour market. Our results show a trend in the decrease of the gender gap when studying the speed of transition to non-employment. This trend can be observed as the difference in speed transition between male and females is smaller with each market labour entrance cohort studied. Those who entered during 1970, 1975 or 1980 experienced a peak gap of around 0.5 while gender difference for those who joined labour market in 1985 or 1990 never reached that value. Moreover, labour cohort from 1990 had -nearly- no differences between males and females in transition speed to non-employment. Fagan & Rubery (1999) argue that segregation has not decreased significantly even though specific public policies have been introduced to reduce it. As described during our theoretical framework, segregation goes beyond differences between transition speeds to non-employment and, although our results show a decrease, this does not necessary mean that segregation has lowered. Nevertheless, the gradual decrease in the transition speed to non-employment might be an indication that some kind transformation is happening in the Spanish labour market.

Although housework division and traditional gender labour division are not the main focus of this thesis, they are key factors in explaining differences in transition speed between males and females. Bianchi (2011) points out that the gap in housework has been declining between the 1960s and the 1990s; our results could be a reflection of this as it is undeniable that labour market dynamics and household work -public and private spheres- are related. Despite this, authors also describe that during 2000s and onwards housework gender gap has increased but, unfortunately, we do not have data to support this.

A trend was observed in all cohorts in which only slight differences in transition speed between males and females was found at early and late stages of the labour trajectory however, these differences were at their highest during midlife. Results showed that for the first years of follow-up no differences were found between males and females but all labour market labour cohorts experienced an increased in gender gap after around 8 years of joining labour market. This result aligns with several empirical studies in which authors point out how household work and caring might be related to women leaving labour market during midlife. Sanchez & Thomson (1997) examine the transition to parenthood on the division of market labour and they point out this event is related to women leaving labour market. Moreover, Horne et al., (2018) found that during midlife the gender gap in household work scores were higher compared to other studied time periods. Grunow et al. (2012) used event-history analysis to study housework division over the course of marriage and they found out that couples showed more traditional housework patterns as their relation advanced which may explain why we find those differences in labour transition to non-employment during midlife. Finally, the lack of differences between males and females in transition speed at later stages of labour trajectories in our results has nothing to do with older individuals being more egalitarian. We believe that no differences were found during late stages of labour market trajectory because, as males retire, their speed to non-employment increases and ends up intersecting with females' because the last have not yet started retiring. In conclusion, our results show that during midlife gender gap in the transition from employed to non-employed (inactive and unemployed) was at its highest and no apparent differences were found at the start or at the end of labour trajectories.

In this work we have linked the statistical concept of credible interval to social theory as it can be understood as a measure of (in)stability with wide intervals associated to instability while small or narrow intervals can be understood as stability. Continuing with labour market gender segregation, results show strong differences in labour (in)stability between males and females especially in later cohorts. Men and women who entered labour market during 1970 show similar patterns as credible intervals are similar between them and are narrow, indicating low instability for both sexes. However, starting in the 1975s women show wide credible intervals during all labour trajectories indicating high instability. On the contrary, men's characterization changed from 1975 to 1990 with high instability during all labour trajectory in the 1975's cohort to a two-staged (in)stability profile. Males from 1980s cohort and onward presented high instability at the start of the labour trajectory but, after around 8 years, credible intervals narrow substantially indicating high stability. This male-two-staged pattern might be due to the uncertainty and low experience when entering labour market which translates into high instability. However, when these individuals gain more seniority, their instability is reduced to a more stable trajectory. The fact that this two-staged pattern is not present in females is, at the least, alarming and responds to gender inequality in the context of labour market. The "doctrine of separated spheres" (Reskin & Padavic, 1994) backed-up by some scholars that defend the male as breadwinner and female as household worker is at the very heart of -vertical and horizontal- sex segregation (Kreimer, 2004).

We have discussed the results of applying dynamic compartment models within each cohort, but our method was also used to study differences between cohorts using 1970 as the reference cohort. Our results show the effect of world economic shocks in the Spanish labour market. The effects of world economic shocks might be reflected in our results when comparing transition speed to non-employment of individuals who joined labour market cohort during 1980 to those who joined during 1970. Our results show how the 1980s cohort might be influenced by the oil crisis of 1973. This oil crisis had second wave with a strong increase in prices in 1979 and the productive activity did not recover until 1983 according to data from the European commission (Luque Aranda & Pellejero Martínez, 2015). The effects of this crisis might be described in the 1980s cohort as its profile is different to the previous (1975) and posterior cohorts (1985) and both of them are similar between each other. According to Bentolila & Blanchard (1990) Franco's dictatorial regime left us an archaic production system which was prone to suffer from higher severity economic shocks compared to other European countries. According to the authors the increase in inflation during the 1970s decade as well as the high unemployment rates of the 1980s pictured Spain as very weak economic system and, therefore, this might be the reason behind our results regarding the market labour cohort from 1980. Moreover, as our model uses proportion of employed and non-employment and economic shocks greatly affect these proportions, it seems plausible that transition speeds and (in)stability will also be affected. Nevertheless, differences in transition speed to non-employment between the 1990's and 1970's cohort show a similar patter to those of 1980. However, we are not aware of structural changes that are similar between both market labour cohorts and that differ from the 1985 labour entrance cohort.

We agree with the solutions proposed by Kreimer (2004) and Cockburn (1991). Both of them argue that a short and long agenda is required to tackle vertical and horizontal segregation. According to them, the short agenda refers to the actions that are being carried out by the main political and social actors to reduce labour market segregation while the long agenda refers to substantial changes that need to be applied but are ignore by the vast majority of men and are only supported by equality activist. Kreimer (2004) proposes a new division of labour that should arise in order to tackle gender and functional hierarchy in which men change their "normal" careers and both males and females need to take over half of reproductive work; is in this context that gender hierarchy loses its significance. Dividing equally market and family work will help lower the burden of "double-shift" which is present mainly in women. Various models are proposed to accomplish this; for instance, the welfare state has the possibility to weaken or to strengthen the division of labour through social policy, family policy, and tax policy. However, Spain has suffered a particular path in the development of equality policies. After Franco's dictatorship and with the transition to democracy, equality policies experienced a quick development which had some consolidation during 2004 to 2008. However, austerity policies to stop economic recession due to the 2008 crisis greatly affected these and other social and more weight was given to other economic policies (Lombardo et al., 2014). Some authors argue that the ideological roots of Spain still greatly affect equality polices because the familiarist traditionalism of Spanish society undermines gender equality (Torns & Recio, 2012). Others, however, do observe that Span is changing to a more egalitarian society (Dominguez-Folgueras, 2015) and link their results to second demographic transition (Van De Kaa, 1987) or to the change of values (Inglehart & Welzel, 2005).

As expected, various limitations of this methodology arise but many of them can be seen positively as new challenges for future work. As described at the beginning of the results section regarding dynamic compartment models, we used moving blocks in which we estimate transition speed to employment or to non-employment. We used five-month overlapping but this number is, in essence, subjective - why not 4, 6 or 5.5? -. However, two directions of work might be developed to improve moving blocks. Firstly, the use of "adaptive moving blocks" in which the number of overlapping months varies according to original data. This means that when a strong change is detected (i.e., quick increase or decrease of unemployment) the number of overlapping measurements is increased in order to smoothing this sudden change. In our opinion "adaptive moving blocks" methodology might enable lowering computation power due to the reduction of overlapping when it is not necessary. A second line of research which is complementary to the previous could be named as "adaptive weighted moving block" The idea behind this might be to give more weight to the data in the centre of the block and less weight to the extremes as parameter estimation is assigned to the median time point of the studied block. Another limitation which has arisen from this thesis was the estimation of the parameter associated to transition speed from non-employment to employment. Credible intervals associated to this parameter were consistently too wide to draw any relevant conclusion. Unfortunately, we have little to offer as we are not sure why this is happening; however, the starting point of this research line might be the use of other prior distributions to model the variance of the *Beta* distribution. Nevertheless, such wide credible intervals might be a true reflection of high instability in transition to employment, but more data and other methods must be explored in order to validate this assumption. Other limitations that arise from the theoretical framework is the oversimplification of both proposed models. It is well known that labour (in)stability is affected by gender, but it is not limited to it and other factors may be affecting it.

However, this is takes us to a strong limitation of our study: data source. Firstly, some important variables were missing and therefore their effect on labour (in)stability could not be studied. We must recall that the Continuous samples of labour trajectories is not a statistical database but an administrative one and, as described in Chapter 3, strong limitations arise from administrative sources. Moreover, other variables were collected late[6], which lead to a short follow-up. This is the main reason why we were unable to draw solid conclusions when applying dynamic compartment modelling to outsiders versus insiders; to illustrate this, Appendix A.3 shows the result from the 1990's labour entrance cohort. No differences were found between males and females in the transition speed to insiders due to extremely wide credible intervals.

[6] See Chapter 3 regarding data importation and availability of the variable "type of contract".

6. Conclusions

We studied (in)stability from two perspectives. Firstly, as transitions from employment to non-employment and vice-versa in a two-compartment model and, secondly, transitions between insiders and outsiders of the labour market in a three-compartment model. Given that there could be differences in (in)stability from a gender perspective, as the patterns between men and women may vary differently, the effect of the gender was also included in this study. Additionally, changes in (in)stability between different market labour cohorts was also analysed. Patterns in age-specific working life expectancy and age-specific employment life expectancy from 1976 to 2014 were also investigated.

The conclusion of applying dynamic compartment models to study labour market between females and males goes in line to what other authors have already observed: the presence of strong gender labour segregation. Our results show a trend in the decrease of the gender gap when studying the speed of transition to non-employment. This trend can be observed as the differences in speed transition between male and females are smaller with each market labour entrance cohort studied. Those women who entered during 1970, 1975 or 1980 experienced high speed to non-employment compared to men and the gap was at its highest compared to the rest of cohorts. Indeed, gender differences for those who joined labour market in 1985 or 1990 were lower. Moreover, labour cohort from 1990 had -nearly- no differences between males and females in transition speed to non-employment. Although we point out that the gap in transition speed between females and males to non-employment is narrowing, (in)stability patterns differ substantially between them. Men and women who entered labour market during 1970 show similar patterns with low instability for both sexes. However, starting in the 1975s women show wide credible intervals during all labour trajectories indicating high instability. On the contrary, men's characterization changed from 1975 to 1990 with high instability during all labour trajectory in the 1975's cohort to a two-staged (in)stability profile. Males from 1980s cohort and onward presented high instability at the start of the labour trajectory but, after around 8 years, credible intervals narrow substantially indicating high stability. Another key conclusion from this thesis is that no differences in speed transition were found in early years of labour trajectory. However, not all cohorts presented the same profile; results show that, in cohorts from 1970s and early 1980s, gender gap emerges around 4 years after joining market labour. On the contrary, individuals who entered labour market in 1985, had no gap in transition speed to non-employment for around 10 years. Furthermore, individuals who entered labour market during 1990 showed 14 years of no differences in transition speed to non-employment. However, this delay may not respond to an increase in equality but the decision to postpone motherhood.

Another aspect worth mentioning results from the study of working life expectancy in which the differences in variability and therefore instability across each decade was found. Cohorts which entered labour market during the 1970s showed less variability than other decades indicating more labour stability. Cohorts of entrance for the 1980s decade show higher instability in all ages except for those older than 45. This instability shifts to early ages for cohorts of entrance in the 1990s and instability is obvious for young people in the 2000s cohort indicating high instability for young adults. Moreover, looking at results from this cohort, it seems that there is an increase of the working life expectancy with the age. This might be a reflection of labour instability as individuals suffer from high instability when joining labour market at early ages which translates into a stagnation or even an increase (such as this case) of working life expectancy. Similarly, in employment life expectancy, results show that cohorts from the early 2000 had higher starting expected years in employment, some of them even higher than 30. Is this decade and the 1990s where highest variability in starting ELE can be found. On the contrary, individuals who entered during 1970 all experience similar starting ELE and this low variance is maintained during all studied period. Coming back to cohorts from 1990s and 2000s, although there is high variability in ELE at the start of their working career, variability gradually decreases and, when individuals are around 30 years old, no apparent differences can be found between cohorts of the same decade. A different dynamic can be found in the cohorts from the 1990s where only slight differences in ELE can be found in early years but these increase peaking at the age 30. For this decade we can find three stages, an early stage with slight differences in ELE; mid stage with high variability and a final stage with no differences between cohorts.

Our proposed models must be seen as the starting point to study of (in)stability. We are interested in increasing follow-up time as the latest version at the time of writing this chapter is 2020. Therefore, it might be possible that follow-up is long enough to re-apply dynamic compartment models to study (in)stability between insiders and outsiders. A new research line that may help in deeper understanding of labour (in)stability from a transition speed perspective is the extension of models to incorporate nationality, education or region among others. For instance, education is a key factor that interacts with gender in which adults with low levels of qualification might suffer the most from labour precariousness (Bentolila & Dolado, 1994; Dolado et al., 2001; Simó et al., 2006; Toharia et al., 1997). Moreover, more educated individuals may achieve better job matches as they have greater search capital (Mincer, 1991; Spence, 1978). Education is not the only factor that should studied, other authors have pointed out that the region in which an individual works might have an important effect on job (in)stability (Martínez & Simó-Noguera, 2016) or nationality as migrant women have more difficulties compared to their native counterparts (Torns & Recio, 2012).

We have critically discussed the results and limitations of this thesis but, as a final word, it is necessary to consider that nature of this thesis. The main idea behind it was the development and application of a novel quantitative method that uses labour market trajectories as example of application but that it is not limited to it and that could be applied to other sociological studies or even other disciplines. This thesis lacks a qualitative perspective and this can be seen as the greatest limitation of this work. However, from our perspective, this is not a limitation but a call for higher specialization in social science. The methods developed here require a strong formation in statistics and/or mathematics which can be hardly attained when diversifying education into both qualitative and quantitative perspectives. It is undeniable that this methodological thesis is strongly embed in the quantitate perspective and it should be seen as an example of the increasing need of specialization and, also, transdisciplinary in social science. New quantitative methods in labour trajectories are increasing in complexity as seen in Chapter 2 when describing multi-state models such as the *hidden Markov model*, *mixture hidden Markov models* or Dudel's approach to working life expectancy (Dudel, 2018c) which require social scientist to have a deeper understanding of statistics and/or mathematic. This complexity increase will undeniably lead to a higher specialization of sociologists, or even the inclusion of other disciplines when studying social life. This transdisciplinary was also a key perspective in this thesis as its progress could not have been possible without the collaboration of sociologists, mathematicians, statisticians and agricultural scientists. All of them were quantitative experts in their disciplines but had different opinions of how a dynamic compartment model should look like. Therefore, the methodological development also needs a transdisciplinary approach.

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A. Appendix: Insiders-Outsiders

A.1 Matlab

```
%Solving LODE SIR model.

%1991
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.952;
cond2 = p(0) == 0.0355;
cond3 = f(0) == 0.012;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)


%1992
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.939;
cond2 = p(0) == 0.0461;
cond3 = f(0) == 0.0152;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%1993
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.932;
cond2 = p(0) == 0.0536;
cond3 = f(0) == 0.0142;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)


%1994
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.868;
cond2 = p(0) == 0.121;
cond3 = f(0) == 0.011;
conds = [cond1; cond2; cond3];
```

```
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)


%1995
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.870;
cond2 = p(0) == 0.118;
cond3 = f(0) == 0.0119;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%1996
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.809;
cond2 = p(0) == 0.173;
cond3 = f(0) == 0.0177;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%1997
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.8;
cond2 = p(0) == 0.173;
cond3 = f(0) == 0.0239;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%1998
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.799;
cond2 = p(0) == 0.173;
cond3 = f(0) == 0.0213;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%1999
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
```

```
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.802;
cond2 = p(0) == 0.17;
cond3 = f(0) == 0.0279;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%2000
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.81;
cond2 = p(0) == 0.152;
cond3 = f(0) == 0.038;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%2001
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.802;
cond2 = p(0) == 0.15;
cond3 = f(0) == 0.0485;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)


%2002
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.789;
cond2 = p(0) == 0.16;
cond3 = f(0) == 0.0514;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%Total
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.893;
```

```
cond2 = p(0) == 0.0412;
cond3 = f(0) == 0.0662;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%Total Mujeres
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.873;
cond2 = p(0) == 0.0776;
cond3 = f(0) == 0.0491;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)

%HTotal Hombres
syms i(t) p(t) f(t) a b c
ode1 = diff(i) == -a*i + c*p
ode2 = diff(p) == a*i - c*p - b*p
ode3 = diff(f) == b*p
odes = [ode1; ode2; ode3]

cond1 = i(0) == 0.905;
cond2 = p(0) == 0.0181;
cond3 = f(0) == 0.0771;
conds = [cond1; cond2; cond3];
[iSol(t), pSol(t), fSol(t)] = dsolve(odes,conds)
```

A.2 Jags

```
Sys.setenv(JAGS_HOME="C:/RStudio/JAGS")
library(R2jags)
library(ggplot2)

setwd("C:/Users/Raistlol/Nextcloud/Puerto Rico/Tesis")
##1991
tabla <- read.table("tabla_tesis_m_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1991-06-01") & meses
<= as.Date("2002-01-01"))
```

```
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1977*a + 1799*b + 1977*c + 1977*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1977*a + 1799*b + 1977*c -
1977*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(1975*a_v + 1869*b_v + 1975*c_v + 1975*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(4000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)) - (exp(-(t*(a_v + b_v + c_v + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 +
b_v/2 + c_v/2 + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(1975*a_v + 1869*b_v + 1975*c_v - 1975*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(4000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2))

   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}
```

```
datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
              working.directory = "C:/RStudio/JAGS",n.iter=250000)


##1992
tabla <- read.table("tabla_tesis_m_1992.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1992-06-01") & meses <=
as.Date("2003-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1992.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1992-06-01") & meses
<= as.Date("2003-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(9819*a + 8621*b + 9819*c + 9819*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(20000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(9819*a + 8621*b + 9819*c -
9819*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(20000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
```

```
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(4937*a_v + 4613*b_v + 4937*c_v + 4937*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(10000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)) - (exp(-(t*(a_v + b_v + c_v + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 +
b_v/2 + c_v/2 + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(4937*a_v + 4613*b_v + 4937*c_v - 4937*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(10000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2))

   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1992_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)


##1993
tabla <- read.table("tabla_tesis_m_1993.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1993-06-01") & meses <=
as.Date("2004-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
```

```
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1993.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1993-06-01") & meses
<= as.Date("2004-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(4937*a + 4263*b + 4937*c + 4937*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(10000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(4937*a + 4263*b + 4937*c -
4937*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(10000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (9*exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(547*a_v + 503*b_v + 547*c_v + 547*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(10000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (9*exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(547*a_v +
503*b_v + 547*c_v - 547*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(10000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))

   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
```

```
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1993_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1994
tabla <- read.table("tabla_tesis_m_1994.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1994-06-01") & meses <=
as.Date("2005-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1994.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1994-06-01") & meses
<= as.Date("2005-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(989*a + 767*b + 989*c + 989*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
```

```
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(989*a + 767*b + 989*c - 989*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))


      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(989*a_v + 727*b_v + 989*c_v + 989*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(989*a_v +
727*b_v + 989*c_v - 989*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))

   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1994_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1995
tabla <- read.table("tabla_tesis_m_1995.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1995-06-01") & meses <=
as.Date("2006-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
```

```
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1995.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1995-06-01") & meses
<= as.Date("2006-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(989*a + 753*b + 989*c + 989*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(989*a + 753*b + 989*c - 989*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))


      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(247*a_v + 188*b_v + 247*c_v + 247*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(247*a_v +
188*b_v + 247*c_v - 247*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))

   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
```

```
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1995_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1996
tabla <- read.table("tabla_tesis_m_1996.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1996-06-01") & meses <=
as.Date("2007-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1996.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1996-06-01") & meses
<= as.Date("2007-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
```

```
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(983*a + 629*b + 983*c + 983*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(983*a + 629*b + 983*c - 983*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))


      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(491*a_v + 321*b_v + 491*c_v + 491*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(491*a_v +
321*b_v + 491*c_v - 491*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))

   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1996_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)



##1997
tabla <- read.table("tabla_tesis_m_1997.txt", sep="|", header=T)
```

```
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1997-06-01") & meses <=
as.Date("2008-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1997.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1997-06-01") & meses
<= as.Date("2008-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(488*a + 321*b + 488*c + 488*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(488*a + 321*b + 488*c - 488*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))


      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(61*a_v + 38*b_v + 61*c_v + 61*(a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(125*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(61*a_v +
38*b_v + 61*c_v - 61*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
```

```
2*b_v*c_v + c_v^2)^(1/2)))/(125*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))


   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1997_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1998
tabla <- read.table("tabla_tesis_m_1998.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1998-06-01") & meses <=
as.Date("2009-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1998.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1998-06-01") & meses
<= as.Date("2009-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
```

```
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(245*a + 162*b + 245*c + 245*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)/2)*(245*a + 162*b + 245*c - 245*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(977*a_v + 593*b_v + 977*c_v + 977*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(977*a_v +
593*b_v + 977*c_v - 977*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))


   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
```

```
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1998_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1999
tabla <- read.table("tabla_tesis_m_1999.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1999-06-01") & meses <=
as.Date("2010-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_1999.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1999-06-01") & meses
<= as.Date("2010-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (81*exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2))))/2)*(3*a + 2*b + 3*c + 3*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2))*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)/2))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c
+ c^2)^(1/2)) - (81*exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2))))/2)*(3*a + 2*b + 3*c - 3*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2))*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)/2))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c
+ c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
```

```
c_v^2)^(1/2)/2)*(243*a_v + 154*b_v + 243*c_v + 243*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(243*a_v +
154*b_v + 243*c_v - 243*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))


   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1999_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##2000
tabla <- read.table("tabla_tesis_m_2000.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2000-06-01") & meses <=
as.Date("2011-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_2000.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("2000-06-01") & meses
<= as.Date("2011-01-01"))
```

```
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(481*a + 334*b + 481*c + 481*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(481*a + 334*b + 481*c - 481*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(481*a_v + 323*b_v + 481*c_v + 481*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(481*a_v +
323*b_v + 481*c_v - 481*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))


   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}
```

```
datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin2000_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##2001
tabla <- read.table("tabla_tesis_m_2001.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2001-06-01") & meses <=
as.Date("2012-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_2001.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("2001-06-01") & meses
<= as.Date("2012-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(951*a + 667*b + 951*c + 951*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(951*a + 667*b + 951*c - 951*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
```

```
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(8423*a_v + 7457*b_v + 8423*c_v + 8423*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(20000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)) - (exp(-(t*(a_v + b_v + c_v + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 +
b_v/2 + c_v/2 + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(8423*a_v + 7457*b_v + 8423*c_v - 8423*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(20000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2))


   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin2001_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)


##2002
tabla <- read.table("tabla_tesis_m_2002.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2002-06-01") & meses <=
as.Date("2013-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
```

```
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_v_2002.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("2002-06-01") & meses
<= as.Date("2013-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(951*a + 673*b + 951*c + 951*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(951*a + 673*b + 951*c - 951*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))

      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (9*exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(21*a_v + 13*b_v + 21*c_v + 21*(a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(400*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (9*exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(21*a_v +
13*b_v + 21*c_v - 21*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(400*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))


   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
```

```
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin2002_vm<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

#Total
##1991
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}
```

```
datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1991<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1992
tabla <- read.table("tabla_tesis_t_1992.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1992-06-01") & meses <=
as.Date("2003-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(9851*a + 8929*b + 9851*c + 9851*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(20000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(9851*a + 8929*b + 9851*c -
9851*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(20000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1992<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 1993
tabla <- read.table("tabla_tesis_t_1993.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1993-06-01") & meses <=
as.Date("2004-01-01"))
```

```
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(616*a + 549*b + 616*c + 616*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1250*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(616*a + 549*b + 616*c - 616*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1250*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1993<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 1994
tabla <- read.table("tabla_tesis_t_1994.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1994-06-01") & meses <=
as.Date("2005-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
```

```
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(989*a + 747*b + 989*c + 989*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(989*a + 747*b + 989*c - 989*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1994<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 1995
tabla <- read.table("tabla_tesis_t_1995.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1995-06-01") & meses <=
as.Date("2006-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(989*a + 747*b + 989*c + 989*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(989*a + 747*b + 989*c - 989*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
```

```
    a~dunif(0,1)
    b~dunif(0,1)
    c~dunif(0,1)
    phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1995<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 1996
tabla <- read.table("tabla_tesis_t_1996.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1996-06-01") & meses <=
as.Date("2007-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
    for( t in 1:N)
    {
        res[t] ~ dbeta(alpha[t], beta[t])
        alpha[t] <- mu[t] * phi
        beta[t]  <- (1-mu[t]) * phi
        mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(491*a + 318*b + 491*c + 491*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(491*a + 318*b + 491*c - 491*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
    }
    a~dunif(0,1)
    b~dunif(0,1)
    c~dunif(0,1)
    phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1996<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)
```

```
## 1997
tabla <- read.table("tabla_tesis_t_1997.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1997-06-01") & meses <=
as.Date("2008-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(973*a + 627*b + 973*c + 973*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(973*a + 627*b + 973*c - 973*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1997<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 1998
tabla <- read.table("tabla_tesis_t_1998.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1998-06-01") & meses <=
as.Date("2009-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
```

```
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(486*a + 313*b + 486*c + 486*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(486*a + 313*b + 486*c - 486*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1998<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 1999
tabla <- read.table("tabla_tesis_t_1999.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1999-06-01") & meses <=
as.Date("2010-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(243*a + 158*b + 243*c + 243*(a^2 - 2*a*b +
```

```
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)/2)*(243*a + 158*b + 243*c - 243*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin1999<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 2000
tabla <- read.table("tabla_tesis_t_2000.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2000-06-01") & meses <=
as.Date("2011-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(481*a + 329*b + 481*c + 481*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(481*a + 329*b + 481*c - 481*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(1000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }

   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}
```

```
datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin2000<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 2001
tabla <- read.table("tabla_tesis_t_2001.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2001-06-01") & meses <=
as.Date("2012-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(238*a + 163*b + 238*c + 238*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)/2)*(238*a + 163*b + 238*c - 238*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(500*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2))
   }

   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin2001<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

## 2002
tabla <- read.table("tabla_tesis_t_2002.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
```

```
tabla_fin <- subset(tabla, meses >=  as.Date("2002-06-01") & meses <=
as.Date("2013-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(949*a + 629*b + 949*c + 949*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)/2)*(949*a + 629*b + 949*c - 949*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(2000*b*(a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2))
   }

   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)
}

datos1 <- list(res=tabla_fin$FIJOpor , N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi")
sin2002<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
working.directory = "C:/RStudio/JAGS",n.iter=250000)

 #####
 # 1991
 # Hombres - Mujeres

tabla <- read.table("tabla_tesis_m_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)

tabla_fin <- subset(tabla, meses >=  as.Date("1992-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
```

```
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
FIJOpor <- tabla_fin$FIJOpor

tabla <- read.table("tabla_tesis_v_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)

tabla_fin_v <- subset(tabla, meses >=  as.Date("1992-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
FIJOpor_v <- tabla_fin_v$FIJOpor

paramfull_s<-matrix(rep(NA,10000),ncol=16,byrow = T)

 m<-1

 for (t in seq(10,nrow(tabla_fin_v),5))
 {

    j<-t-9
    sin1 <- function(){
       for( t in k:N)
       {
          res[t] ~ dbeta(alpha[t], beta[t])
          alpha[t] <- mu[t] * phi
          beta[t]  <- (1-mu[t]) * phi
          mu[t] <-(exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(2428*a + 2137*b + 2428*c + 2428*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(5000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(2428*a + 2137*b + 2428*c -
2428*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(5000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))

          res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
          alpha_v[t] <- mu_v[t] * phi_v
          beta_v[t]  <- (1-mu_v[t]) * phi_v
          mu_v[t] <-(exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(9671*a_v + 7589*b_v + 9671*c_v + 9671*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(20000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)) - (exp(-(t*(a_v + b_v + c_v + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 +
b_v/2 + c_v/2 + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(9671*a_v + 7589*b_v + 9671*c_v - 9671*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
```

```
c_v^2)^(1/2)))/(20000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2))

       }

       a~dunif(0,1)
       b~dunif(0,1)
       c~dunif(0,1)
       phi~dgamma(0.0001,0.0001)

       a_v~dunif(0,1)
       b_v~dunif(0,1)
       c_v~dunif(0,1)
       phi_v~dgamma(0.0001,0.0001)

       diff_a <- a_v - a
       diff_b <- b_v - b
       diff_c <- c_v - c
    }

    FIJOpor1<- FIJOpor[j:t]
    FIJOpor1_v<-  FIJOpor[j:t]

    datos1 <- list(res=FIJOpor1,res_v=FIJOpor1_v, k=1, N=10)
    iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                              a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
    parametros <- c("a", "b", "c", "phi", "a_v", "b_v", "c_v",
"phi_v", "diff_a", "diff_b", "diff_c")
    sinfull_s<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                    working.directory =
"C:/RStudio/JAGS",n.iter=250000)

    print(j)
    print(t)
    print(sinfull_s$BUGSoutput$summary[9,1])

    paramfull_s[m,1]<-round((t+j-1)/2,2)
    paramfull_s[m,2]<- mean(sinfull_s$BUGSoutput$sims.list$b)
    paramfull_s[m,3]<-
unname(quantile(sinfull_s$BUGSoutput$sims.list$b, 0.025))
    paramfull_s[m,4]<-
unname(quantile(sinfull_s$BUGSoutput$sims.list$b, 0.975))
    paramfull_s[m,5]<- mean(sinfull_s$BUGSoutput$sims.list$a)
    paramfull_s[m,6]<- mean(sinfull_s$BUGSoutput$sims.list$c)
    paramfull_s[m,7]<- mean(sinfull_s$BUGSoutput$sims.list$b_v)
    paramfull_s[m,8]<-
unname(quantile(sinfull_s$BUGSoutput$sims.list$b_v, 0.025))
    paramfull_s[m,9]<-
unname(quantile(sinfull_s$BUGSoutput$sims.list$b_v, 0.975))
    paramfull_s[m,10]<- mean(sinfull_s$BUGSoutput$sims.list$a_v)
    paramfull_s[m,11]<- mean(sinfull_s$BUGSoutput$sims.list$c_v)
    paramfull_s[m,12]<- sinfull_s$BUGSoutput$summary[9,1]
    paramfull_s[m,13]<- sinfull_s$BUGSoutput$summary[9,3]
    paramfull_s[m,14]<- sinfull_s$BUGSoutput$summary[9,7]
    paramfull_s[m,15]<- sinfull_s$BUGSoutput$summary[9,8]
```

```
    paramfull_s[m,16]<- sinfull_s$BUGSoutput$summary[9,9]
    print(sinfull_s$BUGSoutput$summary[9,3])
    print(sinfull_s$BUGSoutput$summary[9,7])
    m<-m+1

 }

 paramfull_s <- paramfull_s[complete.cases(paramfull_s),]
 gg <- as.data.frame(paramfull_s)

 m<-0
 gg$V17 <- NA
 gg$V17 <- as.Date(gg$V17, "%Y-%m-%d")
 for (i in seq(10,length(FIJOpor_v),5))
 {
    m<-m+1
    j<-i-9
    gg$V17[m]<-as.Date(tabla_fin$meses[j+4], "Y%-%m-%d")
 }
 gg <- gg[complete.cases(gg),]

 write.table(paramfull, "paramfull_totales.txt", sep="|", dec=".")

 ggplot()+ geom_point(data=gg, aes(x=V17, y=V12, group=1),
color="blue")+
    labs(x="Year of entrance to labour market", y="From outsider to
insider")+
    geom_errorbar(data=gg, aes(x=V17, ymin=V13, ymax=V14, group=1),
width=0.1) +
    geom_hline(yintercept=0, linetype="dashed", color = "red")



+ ####

 cohort <- seq(1991,2002,1)
 cohort<-as.factor(cohort)

 meana<-c(sin1991$BUGSoutput$summary[1,1],
          sin1992$BUGSoutput$summary[1,1],
          sin1993$BUGSoutput$summary[1,1],
          sin1994$BUGSoutput$summary[1,1],
          sin1995$BUGSoutput$summary[1,1],
          sin1996$BUGSoutput$summary[1,1],
          sin1997$BUGSoutput$summary[1,1],
          sin1998$BUGSoutput$summary[1,1],
          sin1999$BUGSoutput$summary[1,1],
          sin2000$BUGSoutput$summary[1,1],
          sin2001$BUGSoutput$summary[1,1],
          sin2002$BUGSoutput$summary[1,1])

 mina<-c(sin1991$BUGSoutput$summary[1,3],
        sin1992$BUGSoutput$summary[1,3],
        sin1993$BUGSoutput$summary[1,3],
        sin1994$BUGSoutput$summary[1,3],
        sin1995$BUGSoutput$summary[1,3],
        sin1996$BUGSoutput$summary[1,3],
        sin1997$BUGSoutput$summary[1,3],
```

```
          sin1998$BUGSoutput$summary[1,3],
          sin1999$BUGSoutput$summary[1,3],
          sin2000$BUGSoutput$summary[1,3],
          sin2001$BUGSoutput$summary[1,3],
          sin2002$BUGSoutput$summary[1,3])

 maxa<-c(sin1991$BUGSoutput$summary[1,7],
          sin1992$BUGSoutput$summary[1,7],
          sin1993$BUGSoutput$summary[1,7],
          sin1994$BUGSoutput$summary[1,7],
          sin1995$BUGSoutput$summary[1,7],
          sin1996$BUGSoutput$summary[1,7],
          sin1997$BUGSoutput$summary[1,7],
          sin1998$BUGSoutput$summary[1,7],
          sin1999$BUGSoutput$summary[1,7],
          sin2000$BUGSoutput$summary[1,7],
          sin2001$BUGSoutput$summary[1,7],
          sin2002$BUGSoutput$summary[1,7])

 rhata <- c(sin1991$BUGSoutput$summary[1,8],
             sin1992$BUGSoutput$summary[1,8],
             sin1993$BUGSoutput$summary[1,8],
             sin1994$BUGSoutput$summary[1,8],
             sin1995$BUGSoutput$summary[1,8],
             sin1996$BUGSoutput$summary[1,8],
             sin1997$BUGSoutput$summary[1,8],
             sin1998$BUGSoutput$summary[1,8],
             sin1999$BUGSoutput$summary[1,8],
             sin2000$BUGSoutput$summary[1,8],
             sin2001$BUGSoutput$summary[1,8],
             sin2002$BUGSoutput$summary[1,8])

neffa <- c(sin1991$BUGSoutput$summary[1,9],
             sin1992$BUGSoutput$summary[1,9],
             sin1993$BUGSoutput$summary[1,9],
             sin1994$BUGSoutput$summary[1,9],
             sin1995$BUGSoutput$summary[1,9],
             sin1996$BUGSoutput$summary[1,9],
             sin1997$BUGSoutput$summary[1,9],
             sin1998$BUGSoutput$summary[1,9],
             sin1999$BUGSoutput$summary[1,9],
             sin2000$BUGSoutput$summary[1,9],
             sin2001$BUGSoutput$summary[1,9],
             sin2002$BUGSoutput$summary[1,9])

meanb<-c(sin1991$BUGSoutput$summary[2,1],
          sin1992$BUGSoutput$summary[2,1],
          sin1993$BUGSoutput$summary[2,1],
          sin1994$BUGSoutput$summary[2,1],
          sin1995$BUGSoutput$summary[2,1],
          sin1996$BUGSoutput$summary[2,1],
          sin1997$BUGSoutput$summary[2,1],
          sin1998$BUGSoutput$summary[2,1],
          sin1999$BUGSoutput$summary[2,1],
          sin2000$BUGSoutput$summary[2,1],
          sin2001$BUGSoutput$summary[2,1],
          sin2002$BUGSoutput$summary[2,1])
```

```
minb<-c(sin1991$BUGSoutput$summary[2,3],
        sin1992$BUGSoutput$summary[2,3],
        sin1993$BUGSoutput$summary[2,3],
        sin1994$BUGSoutput$summary[2,3],
        sin1995$BUGSoutput$summary[2,3],
        sin1996$BUGSoutput$summary[2,3],
        sin1997$BUGSoutput$summary[2,3],
        sin1998$BUGSoutput$summary[2,3],
        sin1999$BUGSoutput$summary[2,3],
        sin2000$BUGSoutput$summary[2,3],
        sin2001$BUGSoutput$summary[2,3],
        sin2002$BUGSoutput$summary[2,3])

maxb<-c(sin1991$BUGSoutput$summary[2,7],
        sin1992$BUGSoutput$summary[2,7],
        sin1993$BUGSoutput$summary[2,7],
        sin1994$BUGSoutput$summary[2,7],
        sin1995$BUGSoutput$summary[2,7],
        sin1996$BUGSoutput$summary[2,7],
        sin1997$BUGSoutput$summary[2,7],
        sin1998$BUGSoutput$summary[2,7],
        sin1999$BUGSoutput$summary[2,7],
        sin2000$BUGSoutput$summary[2,7],
        sin2001$BUGSoutput$summary[2,7],
        sin2002$BUGSoutput$summary[2,7])

rhatb <- c(sin1991$BUGSoutput$summary[2,8],
           sin1992$BUGSoutput$summary[2,8],
           sin1993$BUGSoutput$summary[2,8],
           sin1994$BUGSoutput$summary[2,8],
           sin1995$BUGSoutput$summary[2,8],
           sin1996$BUGSoutput$summary[2,8],
           sin1997$BUGSoutput$summary[2,8],
           sin1998$BUGSoutput$summary[2,8],
           sin1999$BUGSoutput$summary[2,8],
           sin2000$BUGSoutput$summary[2,8],
           sin2001$BUGSoutput$summary[2,8],
           sin2002$BUGSoutput$summary[2,8])

neffb <- c(sin1991$BUGSoutput$summary[2,9],
           sin1992$BUGSoutput$summary[2,9],
           sin1993$BUGSoutput$summary[2,9],
           sin1994$BUGSoutput$summary[2,9],
           sin1995$BUGSoutput$summary[2,9],
           sin1996$BUGSoutput$summary[2,9],
           sin1997$BUGSoutput$summary[2,9],
           sin1998$BUGSoutput$summary[2,9],
           sin1999$BUGSoutput$summary[2,9],
           sin2000$BUGSoutput$summary[2,9],
           sin2001$BUGSoutput$summary[2,9],
           sin2002$BUGSoutput$summary[2,9])

meanc<-c(sin1991$BUGSoutput$summary[3,1],
         sin1992$BUGSoutput$summary[3,1],
         sin1993$BUGSoutput$summary[3,1],
         sin1994$BUGSoutput$summary[3,1],
         sin1995$BUGSoutput$summary[3,1],
         sin1996$BUGSoutput$summary[3,1],
```

```
         sin1997$BUGSoutput$summary[3,1],
         sin1998$BUGSoutput$summary[3,1],
         sin1999$BUGSoutput$summary[3,1],
         sin2000$BUGSoutput$summary[3,1],
         sin2001$BUGSoutput$summary[3,1],
         sin2002$BUGSoutput$summary[3,1])

minc<-c(sin1991$BUGSoutput$summary[3,3],
        sin1992$BUGSoutput$summary[3,3],
        sin1993$BUGSoutput$summary[3,3],
        sin1994$BUGSoutput$summary[3,3],
        sin1995$BUGSoutput$summary[3,3],
        sin1996$BUGSoutput$summary[3,3],
        sin1997$BUGSoutput$summary[3,3],
        sin1998$BUGSoutput$summary[3,3],
        sin1999$BUGSoutput$summary[3,3],
        sin2000$BUGSoutput$summary[3,3],
        sin2001$BUGSoutput$summary[3,3],
        sin2002$BUGSoutput$summary[3,3])

maxc<-c(sin1991$BUGSoutput$summary[3,7],
        sin1992$BUGSoutput$summary[3,7],
        sin1993$BUGSoutput$summary[3,7],
        sin1994$BUGSoutput$summary[3,7],
        sin1995$BUGSoutput$summary[3,7],
        sin1996$BUGSoutput$summary[3,7],
        sin1997$BUGSoutput$summary[3,7],
        sin1998$BUGSoutput$summary[3,7],
        sin1999$BUGSoutput$summary[3,7],
        sin2000$BUGSoutput$summary[3,7],
        sin2001$BUGSoutput$summary[3,7],
        sin2002$BUGSoutput$summary[3,7])

rhatc <- c(sin1991$BUGSoutput$summary[3,8],
           sin1992$BUGSoutput$summary[3,8],
           sin1993$BUGSoutput$summary[3,8],
           sin1994$BUGSoutput$summary[3,8],
           sin1995$BUGSoutput$summary[3,8],
           sin1996$BUGSoutput$summary[3,8],
           sin1997$BUGSoutput$summary[3,8],
           sin1998$BUGSoutput$summary[3,8],
           sin1999$BUGSoutput$summary[3,8],
           sin2000$BUGSoutput$summary[3,8],
           sin2001$BUGSoutput$summary[3,8],
           sin2002$BUGSoutput$summary[3,8])

neffc <- c(sin1991$BUGSoutput$summary[3,9],
           sin1992$BUGSoutput$summary[3,9],
           sin1993$BUGSoutput$summary[3,9],
           sin1994$BUGSoutput$summary[3,9],
           sin1995$BUGSoutput$summary[3,9],
           sin1996$BUGSoutput$summary[3,9],
           sin1997$BUGSoutput$summary[3,9],
           sin1998$BUGSoutput$summary[3,9],
           sin1999$BUGSoutput$summary[3,9],
           sin2000$BUGSoutput$summary[3,9],
           sin2001$BUGSoutput$summary[3,9],
           sin2002$BUGSoutput$summary[3,9])
```

```
resultados <- data.frame(cohort=cohort,meana=meana, mina=mina,
maxa=maxa, rhata=rhata, neffa=neffa,
                         meanb=meanb, minb=minb, maxb=maxb,
rhatb=rhatb, neffb=neffb,
                         meanc=meanc, minc=minc, maxc=maxc,
rhatc=rhatc, neffc=neffc)

limites <- data.frame(cohort=cohort, minimob=minb, maximob =maxb,
                      minimoa=mina, maximoa =maxa,
                      minimoc=minc, maximoc =maxc)

pdf("outsiders_insiders.pdf", width=10)

ggplot()+ geom_point(data=resultados, aes(x=cohort, y=meana, group=1),
color="red")+
   labs(x="Year of entrance to labour market", y="From Non-employed to
Fixed-term employment")+
   geom_errorbar(data=limites, aes(x=cohort,ymin=minimoa,
ymax=maximoa, group=1), width=0.1)


ggplot()+ geom_point(data=resultados, aes(x=cohort, y=meanb, group=1),
color="red")+
   labs(x="Year of entrance to labour market", y="From outsider to
insider")+
   geom_errorbar(data=limites, aes(x=cohort,ymin=minimob,
ymax=maximob, group=1), width=0.1)


ggplot()+ geom_point(data=resultados, aes(x=cohort, y=meanc, group=1),
color="red")+
   labs(x="Year of entrance to labour market", y="Fixed-term
employment to Non-employed")+
   geom_errorbar(data=limites, aes(x=cohort,ymin=minimoc,
ymax=maximoc, group=1), width=0.1)

colors <- c("Parameter A" = "blue", "Parameter B" = "red", "Parameter
C"="purple")

ggplot(data=resultados, aes(x=cohort))+
   geom_line(aes(y=meana, group=1, color="Parameter A"))+
   geom_line(aes(y=meanb, group=1, color="Parameter B"))+
   geom_line(aes(y=meanc, group=1, color="Parameter C"))+
   labs(x="Trend", y="Estimation")+
   scale_color_manual(values = colors)+
   theme(legend.title = element_blank(), legend.position="bottom")

dev.off()


##1991 vs 1992


tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
```

```
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1992.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin_v <- subset(tabla, meses >=  as.Date("1992-06-01") & meses
<= as.Date("2003-01-01"))
tabla_fin_v$TEMPORALpor <-
tabla_fin_v$TEMPORALt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$FIJOpor <-
tabla_fin_v$FIJOt/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)
tabla_fin_v$INACTIVOfullporc <-
tabla_fin_v$INACTIVOfull/(tabla_fin_v$FIJOt+tabla_fin_v$TEMPORALt
+tabla_fin_v$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(9851*a_v + 8929*b_v + 9851*c_v + 9851*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(20000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)) - (exp(-(t*(a_v + b_v + c_v + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 +
b_v/2 + c_v/2 + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(9851*a_v + 8929*b_v + 9851*c_v - 9851*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)))/(20000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
```

```
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_92<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 1993

tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1993.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1993-06-01") & meses <=
as.Date("2004-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
```

```
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(616*a_v + 549*b_v + 616*c_v + 616*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(1250*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(616*a_v +
549*b_v + 616*c_v - 616*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(1250*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_93<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 1994

tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
```

```
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1994.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1994-06-01") & meses <=
as.Date("2005-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(989*a_v + 747*b_v + 989*c_v + 989*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(989*a_v +
747*b_v + 989*c_v - 989*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
```

```
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_94<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)


##1991 vs 1995

tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1995.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1995-06-01") & meses <=
as.Date("2006-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
```

```
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(989*a_v + 747*b_v + 989*c_v + 989*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(989*a_v +
747*b_v + 989*c_v - 989*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_95<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 1996
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
```

```
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1996.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1996-06-01") & meses <=
as.Date("2007-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(491*a_v + 318*b_v + 491*c_v + 491*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(491*a_v +
318*b_v + 491*c_v - 491*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
```

```
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_96<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 1997
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1997.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1997-06-01") & meses <=
as.Date("2008-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
```

```
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(973*a_v + 627*b_v + 973*c_v + 973*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(973*a_v +
627*b_v + 973*c_v - 973*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_97<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 1998
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
```

```
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1998.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1998-06-01") & meses <=
as.Date("2009-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(486*a_v + 313*b_v + 486*c_v + 486*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(486*a_v +
313*b_v + 486*c_v - 486*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
```

```
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_98<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 1999
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_1999.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1999-06-01") & meses <=
as.Date("2010-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
```

```
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(243*a_v + 158*b_v + 243*c_v + 243*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(243*a_v +
158*b_v + 243*c_v - 243*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_99<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 2000
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
```

```
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_2000.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2000-06-01") & meses <=
as.Date("2011-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(481*a_v + 329*b_v + 481*c_v + 481*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(481*a_v +
329*b_v + 481*c_v - 481*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(1000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
```

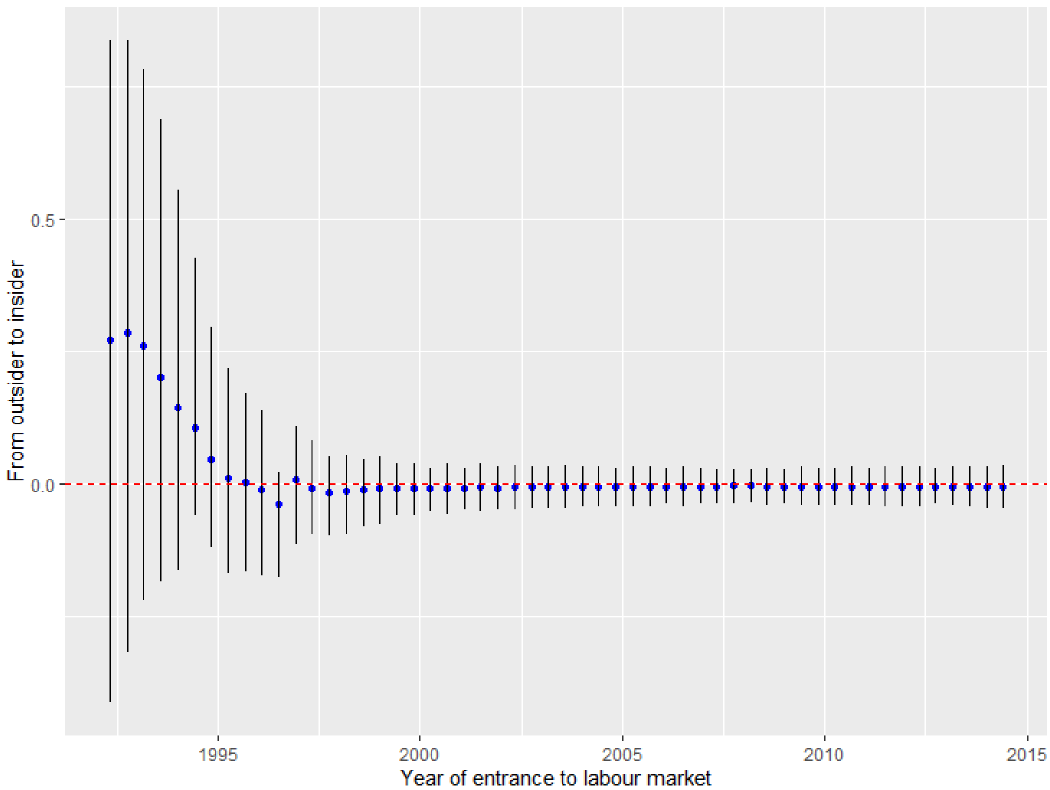
```
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_00<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 2001
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_2001.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2001-06-01") & meses <=
as.Date("2012-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
```

```
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <- (exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(238*a_v + 163*b_v + 238*c_v + 238*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(238*a_v +
163*b_v + 238*c_v - 238*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(500*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
   phi~dgamma(0.005,0.005)

   a_v~dunif(0,1)
   b_v~dunif(0,1)
   c_v~dunif(0,1)
   phi_v~dgamma(0.005,0.005)

   dif_a <- a_v - a
   dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_01<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

##1991 vs 2002
tabla <- read.table("tabla_tesis_t_1991.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("1991-06-01") & meses <=
as.Date("2002-01-01"))
```

```
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

tabla <- read.table("tabla_tesis_t_2002.txt", sep="|", header=T)
tabla$meses<-as.Date(tabla$meses)
tabla_fin <- subset(tabla, meses >=  as.Date("2002-06-01") & meses <=
as.Date("2013-01-01"))
tabla_fin$TEMPORALpor <-
tabla_fin$TEMPORALt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$FIJOpor <-
tabla_fin$FIJOt/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)
tabla_fin$INACTIVOfullporc <-
tabla_fin$INACTIVOfull/(tabla_fin$FIJOt+tabla_fin$TEMPORALt
+tabla_fin$INACTIVOfull)

sin1 <- function(){
   for( t in 1:N)
   {
      res[t] ~ dbeta(alpha[t], beta[t])
      alpha[t] <- mu[t] * phi
      beta[t]  <- (1-mu[t]) * phi
      mu[t] <- (exp(-(t*(a + b + c - (a^2 - 2*a*b + 2*a*c + b^2 +
2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 - (a^2 - 2*a*b + 2*a*c + b^2
+ 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c + 1975*(a^2 - 2*a*b
+ 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 - 2*a*b + 2*a*c +
b^2 + 2*b*c + c^2)^(1/2)) - (exp(-(t*(a + b + c + (a^2 - 2*a*b + 2*a*c
+ b^2 + 2*b*c + c^2)^(1/2)))/2)*(a/2 + b/2 + c/2 + (a^2 - 2*a*b +
2*a*c + b^2 + 2*b*c + c^2)^(1/2)/2)*(1975*a + 1833*b + 1975*c -
1975*(a^2 - 2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2)))/(4000*b*(a^2 -
2*a*b + 2*a*c + b^2 + 2*b*c + c^2)^(1/2))
      res_v[t] ~ dbeta(alpha_v[t], beta_v[t])
      alpha_v[t] <- mu_v[t] * phi
      beta_v[t]  <- (1-mu_v[t]) * phi
      mu_v[t] <-(exp(-(t*(a_v + b_v + c_v - (a_v^2 - 2*a_v*b_v +
2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 +
c_v/2 - (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v +
c_v^2)^(1/2)/2)*(949*a_v + 629*b_v + 949*c_v + 949*(a_v^2 - 2*a_v*b_v
+ 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)) - (exp(-
(t*(a_v + b_v + c_v + (a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/2)*(a_v/2 + b_v/2 + c_v/2 + (a_v^2 -
2*a_v*b_v + 2*a_v*c_v + b_v^2 + 2*b_v*c_v + c_v^2)^(1/2)/2)*(949*a_v +
629*b_v + 949*c_v - 949*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v + b_v^2 +
2*b_v*c_v + c_v^2)^(1/2)))/(2000*b_v*(a_v^2 - 2*a_v*b_v + 2*a_v*c_v +
b_v^2 + 2*b_v*c_v + c_v^2)^(1/2))
   }
   a~dunif(0,1)
   b~dunif(0,1)
   c~dunif(0,1)
```

```
    phi~dgamma(0.005,0.005)

    a_v~dunif(0,1)
    b_v~dunif(0,1)
    c_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)

    dif_a <- a_v - a
    dif_b <- b_v - b

}

datos1 <- list(res=tabla_fin$FIJOpor , res_v=tabla_fin_v$FIJOpor,
N=nrow(tabla_fin))
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
c=runif(1,0,1), phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
c_v=runif(1,0,1), phi_v=runif(1,0,100))}
parametros <- c("a", "b", "c", "phi","a_v", "b_v", "c_v", "phi_v")
sin1991_02<-
jags(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                 working.directory = "C:/RStudio/JAGS",n.iter=250000)

save.image("C:/Users/Raistlol/Nextcloud/Puerto
Rico/Tesis/SIRbayes_pr.RData")
```

A.3 Dynamic Outsiders-Insiders



B. Appendix: Employed/Non-Employed

B.1 Matlab

```
%1970 mujeres
syms u(t) v(t) a b
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.913;
cond2 = v(0) == 1-0.913;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1975 mujeres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.762;
cond2 = v(0) == 1-0.762;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1980 mujeres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.773;
cond2 = v(0) == 1-0.773;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1985 mujeres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.747;
cond2 = v(0) == 1-0.747;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1990 mujeres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.737;
cond2 = v(0) == 1-0.737;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1970 hombres
```

```
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.913;
cond2 = v(0) == 1-0.913;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1975 hombres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.795;
cond2 = v(0) == 1-0.795;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1980 hombres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.78;
cond2 = v(0) == 1-0.78;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1985 hombres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.737;
cond2 = v(0) == 1-0.737;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1990 hombres
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.713;
cond2 = v(0) == 1-0.713;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1970 total
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.913;
cond2 = v(0) == 1-0.913;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)
```

```
%1975 total
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.783;
cond2 = v(0) == 1-0.783;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1980 total
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.777;
cond2 = v(0) == 1-0.777;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1985 total
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.741;
cond2 = v(0) == 1-0.741;
conds = [cond1; cond2];
[uSol(t), vSol(t)] = dsolve(odes,conds)

%1990 total
ode1 = diff(u) == -a*u + b*v;
ode2 = diff(v) == a*u - b*v;
odes = [ode1; ode2]

cond1 = u(0) == 0.725;
cond2 = v(0) == 1-0.725;
conds = [cond1; cond2];
      [uSol(t), vSol(t)] = dsolve(odes,conds)
```

B.2 WinBUGS

```
library(R2WinBUGS)
library(ggplot2)

setwd("C:/Users/Raistlol/Nextcloud/Puerto Rico/Tesis")
rm(list=ls())

##Non-dynamic

#Intra-cohort comparison

#1970
tabla <- read.table("tabla_ocunoocu_m_1970.txt", sep="|", header=T)
ini <- 12
ende <-540
```

```
tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1970.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)

sin1 <- function(){
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(913*a_v -
87*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1970<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
          bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

##1975

tabla <- read.table("tabla_ocunoocu_m_1975.txt", sep="|", header=T)
ini <- 73
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)
```

```
tabla <- read.table("tabla_ocunoocu_v_1975.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)

sin1 <- function(){
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(762*a - 238*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(795*a_v -
205*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1975<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
              bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)


##1980
tabla <- read.table("tabla_ocunoocu_m_1980.txt", sep="|", header=T)
ini <- 133
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1980.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]
```

```
ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)

sin1 <- function(){
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(773*a - 227*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(780*a_v -
220*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1980<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
              bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)


##1985
tabla <- read.table("tabla_ocunoocu_m_1985.txt", sep="|", header=T)
ini <- 193
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1985.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)


sin1 <- function(){
```

```
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(747*a - 253*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(737*a_v -
263*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1985<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
              bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

##1990
tabla <- read.table("tabla_ocunoocu_m_1990.txt", sep="|", header=T)
ini <- 253
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1990.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)


sin1 <- function(){
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
```

```
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(737*a - 263*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(713*a_v -
287*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1990<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
              bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

###Between cohort-comparison

##1975
tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-73

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1975.txt", sep="|", header=T)
ini <- 73
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)


sin1 <- function(){
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
```

```
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(783*a_v -
217*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1970_1975<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
              bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

##1980

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-133

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1980.txt", sep="|", header=T)
ini <- 133
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)



sin1 <- function(){
  for( i in 1:N)
  {
```

```
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(777*a_v -
223*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1970_1980<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                   bugs.directory =
"C:/RStudio/WinBUGS14",n.iter=500000)

##1985

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-193

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1985.txt", sep="|", header=T)
ini <- 193
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)



sin1 <- function(){
```

```
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(741*a_v -
259*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1970_1985<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                   bugs.directory =
"C:/RStudio/WinBUGS14",n.iter=500000)

##1990

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-253

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1990.txt", sep="|", header=T)
ini <- 253
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)

sin1 <- function(){
```

```
  for( i in 1:N)
  {
    res[i] ~ dbeta(alpha[i], beta[i])
    alpha[i] <- mu[i] * phi
    beta[i]  <- (1-mu[i]) * phi
    mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

    res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
    alpha_v[i] <- mu_v[i] * phi_v
    beta_v[i]  <- (1-mu_v[i]) * phi_v
    mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(725*a_v -
275*b_v))/(1000*(a_v + b_v))
  }

  a~dunif(0,1)
  b~dunif(0,1)
  phi~dgamma(0.005,0.005)
  a_v~dunif(0,1)
  b_v~dunif(0,1)
  phi_v~dgamma(0.005,0.005)
  dif_a <- a_v - a
  dif_b <- b_v - b


}

datos1 <- list(res=ocu, N=length(ocu), res_v = ocu_v)
iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                           a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a", "dif_b")
sin1970_1990<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
                   bugs.directory =
"C:/RStudio/WinBUGS14",n.iter=500000)


###Dynamic

#Intra-cohort comparison

#1970

tabla <- read.table("tabla_ocunoocu_m_1970.txt", sep="|", header=T)
ini <- 12
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1970.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
```

```
v <- 520
param_1 <- v*31
param_10_5_1970<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(913*a_v -
87*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                             a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)
```

```
  param_10_5_1970[m,1]<-sin$mean$a
  param_10_5_1970[m,2]<-sin$mean$b
  param_10_5_1970[m,3]<-round((i+j-1)/2,2)
  param_10_5_1970[m,4]<-sin$summary[1,3]
  param_10_5_1970[m,5]<-sin$summary[1,7]
  param_10_5_1970[m,6]<-sin$summary[2,3]
  param_10_5_1970[m,7]<-sin$summary[2,7]
  param_10_5_1970[m,8]<-sin$summary[1,8]
  param_10_5_1970[m,9]<-sin$summary[1,9]
  param_10_5_1970[m,10]<-sin$summary[2,8]
  param_10_5_1970[m,11]<-sin$summary[2,9]
  param_10_5_1970[m,12]<-sin$summary[4,3]
  param_10_5_1970[m,13]<-sin$summary[4,7]
  param_10_5_1970[m,14]<-sin$summary[5,3]
  param_10_5_1970[m,15]<-sin$summary[5,7]
  param_10_5_1970[m,16]<-sin$summary[4,8]
  param_10_5_1970[m,17]<-sin$summary[4,9]
  param_10_5_1970[m,18]<-sin$summary[5,8]
  param_10_5_1970[m,19]<-sin$summary[5,9]
  param_10_5_1970[m,20]<-sin$summary[7,3]
  param_10_5_1970[m,21]<-sin$summary[7,7]
  param_10_5_1970[m,22]<-sin$summary[8,3]
  param_10_5_1970[m,23]<-sin$summary[8,7]
  param_10_5_1970[m,24]<-sin$summary[7,8]
  param_10_5_1970[m,25]<-sin$summary[7,9]
  param_10_5_1970[m,26]<-sin$summary[8,8]
  param_10_5_1970[m,27]<-sin$summary[8,9]
  param_10_5_1970[m,28]<-sin$mean$dif_a
  param_10_5_1970[m,29]<-sin$mean$dif_b
  param_10_5_1970[m,30]<-sin$mean$a_v
  param_10_5_1970[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1970)

m<-0
gg$V12 <- NA
gg$V12 <- as.Date(gg$V12, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V12[m]<-as.Date(lab[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]

gg$V3 <- gg$V12

RSV<-data.frame(ocu = ocu, ocu_v = ocu_v, fecha = lab)

pdf("1970.pdf", width=10)

### A w####

ggplot()+geom_point(data=gg, aes(x=V3, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
```

```
  geom_errorbar(data=gg,  aes(x=V3,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (women)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (women)",x="Date", y="Parameter B")

### A m####

ggplot()+geom_point(data=gg, aes(x=V3, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (men)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (men)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (Difference)",x="Date", y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (Difference)",x="Date", y="Parameter B")

##Ocu
```

```
colors <- c("Women" = "blue", "Men" = "red")

ggplot(RSV, aes(x = fecha))+
  geom_line(aes(x=fecha, y=ocu, color="Women"))+
  geom_line(aes(x=fecha, y=ocu_v, color="Men"))+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(RSV$fecha), max(RSV$fecha)))+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  labs(title="1970 cohort",x="Date", y="Proportion of employed")+
ylim(0,1) +
  scale_color_manual(values = colors)

dev.off()

###############################
#
# 1975
#

tabla <- read.table("tabla_ocunoocu_m_1975.txt", sep="|", header=T)
ini <- 73
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1975.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)



v <- 520
param_1 <- v*31
param_10_5_1975<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(762*a - 238*b))/(1000*(a
+ b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
```

```
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(795*a_v -
205*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                              a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1975[m,1]<-sin$mean$a
  param_10_5_1975[m,2]<-sin$mean$b
  param_10_5_1975[m,3]<-round((i+j-1)/2,2)
  param_10_5_1975[m,4]<-sin$summary[1,3]
  param_10_5_1975[m,5]<-sin$summary[1,7]
  param_10_5_1975[m,6]<-sin$summary[2,3]
  param_10_5_1975[m,7]<-sin$summary[2,7]
  param_10_5_1975[m,8]<-sin$summary[1,8]
  param_10_5_1975[m,9]<-sin$summary[1,9]
  param_10_5_1975[m,10]<-sin$summary[2,8]
  param_10_5_1975[m,11]<-sin$summary[2,9]
  param_10_5_1975[m,12]<-sin$summary[4,3]
  param_10_5_1975[m,13]<-sin$summary[4,7]
  param_10_5_1975[m,14]<-sin$summary[5,3]
  param_10_5_1975[m,15]<-sin$summary[5,7]
  param_10_5_1975[m,16]<-sin$summary[4,8]
  param_10_5_1975[m,17]<-sin$summary[4,9]
  param_10_5_1975[m,18]<-sin$summary[5,8]
  param_10_5_1975[m,19]<-sin$summary[5,9]
  param_10_5_1975[m,20]<-sin$summary[7,3]
  param_10_5_1975[m,21]<-sin$summary[7,7]
  param_10_5_1975[m,22]<-sin$summary[8,3]
  param_10_5_1975[m,23]<-sin$summary[8,7]
  param_10_5_1975[m,24]<-sin$summary[7,8]
```

```
  param_10_5_1975[m,25]<-sin$summary[7,9]
  param_10_5_1975[m,26]<-sin$summary[8,8]
  param_10_5_1975[m,27]<-sin$summary[8,9]
  param_10_5_1975[m,28]<-sin$mean$dif_a
  param_10_5_1975[m,29]<-sin$mean$dif_b
  param_10_5_1975[m,30]<-sin$mean$a_v
  param_10_5_1975[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1975)

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]

gg$V3 <- gg$V32

RSV<-data.frame(ocu = ocu, ocu_v = ocu_v, fecha = lab)

pdf("1975.pdf", width = 10)

### A w####

ggplot()+geom_point(data=gg, aes(x=V3, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1975 cohort (women)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1975 cohort (women)",x="Date", y="Parameter B")

### A m####

ggplot()+geom_point(data=gg, aes(x=V3, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
```

```
  labs(title="1975 cohort (men)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1975 cohort (men)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1975 cohort (Difference)",x="Date", y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1975 cohort (Difference)",x="Date", y="Parameter B")

##Ocu

colors <- c("Women" = "blue", "Men" = "red")

ggplot(RSV, aes(x = fecha))+
  geom_line(aes(x=fecha, y=ocu, color="Women"))+
  geom_line(aes(x=fecha, y=ocu_v, color="Men"))+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(RSV$fecha), max(RSV$fecha)))+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  labs(title="1975 cohort",x="Date", y="Proportion of employed")+
ylim(0,1) +
  scale_color_manual(values = colors)

dev.off()



###############################
#
# 1980
#

tabla <- read.table("tabla_ocunoocu_m_1980.txt", sep="|", header=T)
```

```r
ini <- 133
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1980.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)



v <- 520
param_1 <- v*31
param_10_5_1980<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(773*a - 227*b))/(1000*(a
+ b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(780*a_v -
220*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
```

```
                              a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1980[m,1]<-sin$mean$a
  param_10_5_1980[m,2]<-sin$mean$b
  param_10_5_1980[m,3]<-round((i+j-1)/2,2)
  param_10_5_1980[m,4]<-sin$summary[1,3]
  param_10_5_1980[m,5]<-sin$summary[1,7]
  param_10_5_1980[m,6]<-sin$summary[2,3]
  param_10_5_1980[m,7]<-sin$summary[2,7]
  param_10_5_1980[m,8]<-sin$summary[1,8]
  param_10_5_1980[m,9]<-sin$summary[1,9]
  param_10_5_1980[m,10]<-sin$summary[2,8]
  param_10_5_1980[m,11]<-sin$summary[2,9]
  param_10_5_1980[m,12]<-sin$summary[4,3]
  param_10_5_1980[m,13]<-sin$summary[4,7]
  param_10_5_1980[m,14]<-sin$summary[5,3]
  param_10_5_1980[m,15]<-sin$summary[5,7]
  param_10_5_1980[m,16]<-sin$summary[4,8]
  param_10_5_1980[m,17]<-sin$summary[4,9]
  param_10_5_1980[m,18]<-sin$summary[5,8]
  param_10_5_1980[m,19]<-sin$summary[5,9]
  param_10_5_1980[m,20]<-sin$summary[7,3]
  param_10_5_1980[m,21]<-sin$summary[7,7]
  param_10_5_1980[m,22]<-sin$summary[8,3]
  param_10_5_1980[m,23]<-sin$summary[8,7]
  param_10_5_1980[m,24]<-sin$summary[7,8]
  param_10_5_1980[m,25]<-sin$summary[7,9]
  param_10_5_1980[m,26]<-sin$summary[8,8]
  param_10_5_1980[m,27]<-sin$summary[8,9]
  param_10_5_1980[m,28]<-sin$mean$dif_a
  param_10_5_1980[m,29]<-sin$mean$dif_b
  param_10_5_1980[m,30]<-sin$mean$a_v
  param_10_5_1980[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1980)

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
```

```
}
gg <- gg[complete.cases(gg),]

gg$V3 <- gg$V32

RSV<-data.frame(ocu = ocu, ocu_v = ocu_v, fecha = lab)

pdf("1980.pdf", width=10)

### A w####

ggplot()+geom_point(data=gg, aes(x=V3, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (women)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (women)",x="Date", y="Parameter B")

### A m####

ggplot()+geom_point(data=gg, aes(x=V3, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (men)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (men)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (Difference)",x="Date", y="Parameter A")
```

```
#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (Difference)",x="Date", y="Parameter B")

##Ocu

colors <- c("Women" = "blue", "Men" = "red")

ggplot(RSV, aes(x = fecha))+
  geom_line(aes(x=fecha, y=ocu, color="Women"))+
  geom_line(aes(x=fecha, y=ocu_v, color="Men"))+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(RSV$fecha), max(RSV$fecha)))+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  labs(title="1980 cohort",x="Date", y="Proportion of employed")+
ylim(0,1) +
  scale_color_manual(values = colors)

dev.off()



###############################
#
# 1985
#

tabla <- read.table("tabla_ocunoocu_m_1985.txt", sep="|", header=T)
ini <- 193
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1985.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)



v <- 520
param_1 <- v*31
param_10_5_1985<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1
```

```
for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(747*a - 253*b))/(1000*(a
+ b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(737*a_v -
263*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                             a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1985[m,1]<-sin$mean$a
  param_10_5_1985[m,2]<-sin$mean$b
  param_10_5_1985[m,3]<-round((i+j-1)/2,2)
  param_10_5_1985[m,4]<-sin$summary[1,3]
  param_10_5_1985[m,5]<-sin$summary[1,7]
  param_10_5_1985[m,6]<-sin$summary[2,3]
  param_10_5_1985[m,7]<-sin$summary[2,7]
  param_10_5_1985[m,8]<-sin$summary[1,8]
  param_10_5_1985[m,9]<-sin$summary[1,9]
```

```
  param_10_5_1985[m,10]<-sin$summary[2,8]
  param_10_5_1985[m,11]<-sin$summary[2,9]
  param_10_5_1985[m,12]<-sin$summary[4,3]
  param_10_5_1985[m,13]<-sin$summary[4,7]
  param_10_5_1985[m,14]<-sin$summary[5,3]
  param_10_5_1985[m,15]<-sin$summary[5,7]
  param_10_5_1985[m,16]<-sin$summary[4,8]
  param_10_5_1985[m,17]<-sin$summary[4,9]
  param_10_5_1985[m,18]<-sin$summary[5,8]
  param_10_5_1985[m,19]<-sin$summary[5,9]
  param_10_5_1985[m,20]<-sin$summary[7,3]
  param_10_5_1985[m,21]<-sin$summary[7,7]
  param_10_5_1985[m,22]<-sin$summary[8,3]
  param_10_5_1985[m,23]<-sin$summary[8,7]
  param_10_5_1985[m,24]<-sin$summary[7,8]
  param_10_5_1985[m,25]<-sin$summary[7,9]
  param_10_5_1985[m,26]<-sin$summary[8,8]
  param_10_5_1985[m,27]<-sin$summary[8,9]
  param_10_5_1985[m,28]<-sin$mean$dif_a
  param_10_5_1985[m,29]<-sin$mean$dif_b
  param_10_5_1985[m,30]<-sin$mean$a_v
  param_10_5_1985[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1985)

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]

gg$V3 <- gg$V32

RSV<-data.frame(ocu = ocu, ocu_v = ocu_v, fecha = lab)

pdf("1985.pdf", width=10)

### A w###

ggplot()+geom_point(data=gg, aes(x=V3, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (women)",x="Date", y="Parameter A")

#### B w####

ggplot()+geom_point(data=gg, aes(x=V3, y=V2), color="red")+
```

```r
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (women)",x="Date", y="Parameter B")

### A m###

ggplot()+geom_point(data=gg, aes(x=V3, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (men)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (men)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (Difference)",x="Date", y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (Difference)",x="Date", y="Parameter B")

##Ocu

colors <- c("Women" = "blue", "Men" = "red")

ggplot(RSV, aes(x = fecha))+
  geom_line(aes(x=fecha, y=ocu, color="Women"))+
  geom_line(aes(x=fecha, y=ocu_v, color="Men"))+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(RSV$fecha), max(RSV$fecha)))+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
```

```
  labs(title="1985 cohort",x="Date", y="Proportion of employed")+
ylim(0,1) +
  scale_color_manual(values = colors)

dev.off()

###############################
#
# 1990
#

tabla <- read.table("tabla_ocunoocu_m_1990.txt", sep="|", header=T)
ini <- 253
ende <-540

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_v_1990.txt", sep="|", header=T)
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)



v <- 520
param_1 <- v*31
param_10_5_1990<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(737*a - 263*b))/(1000*(a
+ b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(713*a_v -
287*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
```

```
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                              a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1990[m,1]<-sin$mean$a
  param_10_5_1990[m,2]<-sin$mean$b
  param_10_5_1990[m,3]<-round((i+j-1)/2,2)
  param_10_5_1990[m,4]<-sin$summary[1,3]
  param_10_5_1990[m,5]<-sin$summary[1,7]
  param_10_5_1990[m,6]<-sin$summary[2,3]
  param_10_5_1990[m,7]<-sin$summary[2,7]
  param_10_5_1990[m,8]<-sin$summary[1,8]
  param_10_5_1990[m,9]<-sin$summary[1,9]
  param_10_5_1990[m,10]<-sin$summary[2,8]
  param_10_5_1990[m,11]<-sin$summary[2,9]
  param_10_5_1990[m,12]<-sin$summary[4,3]
  param_10_5_1990[m,13]<-sin$summary[4,7]
  param_10_5_1990[m,14]<-sin$summary[5,3]
  param_10_5_1990[m,15]<-sin$summary[5,7]
  param_10_5_1990[m,16]<-sin$summary[4,8]
  param_10_5_1990[m,17]<-sin$summary[4,9]
  param_10_5_1990[m,18]<-sin$summary[5,8]
  param_10_5_1990[m,19]<-sin$summary[5,9]
  param_10_5_1990[m,20]<-sin$summary[7,3]
  param_10_5_1990[m,21]<-sin$summary[7,7]
  param_10_5_1990[m,22]<-sin$summary[8,3]
  param_10_5_1990[m,23]<-sin$summary[8,7]
  param_10_5_1990[m,24]<-sin$summary[7,8]
  param_10_5_1990[m,25]<-sin$summary[7,9]
  param_10_5_1990[m,26]<-sin$summary[8,8]
  param_10_5_1990[m,27]<-sin$summary[8,9]
  param_10_5_1990[m,28]<-sin$mean$dif_a
  param_10_5_1990[m,29]<-sin$mean$dif_b
  param_10_5_1990[m,30]<-sin$mean$a_v
  param_10_5_1990[m,31]<-sin$mean$b_v
  m<-m+1

}
```

```
gg <- as.data.frame(param_10_5_1990)

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]

gg$V3 <- gg$V32

RSV<-data.frame(ocu = ocu, ocu_v = ocu_v, fecha = lab)

pdf("1990.pdf", width=10)

### A w###

ggplot()+geom_point(data=gg, aes(x=V3, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (women)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (women)",x="Date", y="Parameter B")

### A m###

ggplot()+geom_point(data=gg, aes(x=V3, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (men)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V3, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
```

```
  labs(title="1990 cohort (men)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (Difference)",x="Date", y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V3), max(gg$V3)))+ ylim(-1,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (Difference)",x="Date", y="Parameter B")

##Ocu

colors <- c("Women" = "blue", "Men" = "red")

ggplot(RSV, aes(x = fecha))+
  geom_line(aes(x=fecha, y=ocu, color="Women"))+
  geom_line(aes(x=fecha, y=ocu_v, color="Men"))+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(RSV$fecha), max(RSV$fecha)))+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  labs(title="1990 cohort",x="Date", y="Proportion of employed")+
ylim(0,1) +
  scale_color_manual(values = colors)

dev.off()


#### Between cohort comparison
## 1970

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-73

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1975.txt", sep="|", header=T)
ini <- 73
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
```

```
lab1 <-as.Date(tabla$meses)

v <- 520
param_1 <- v*31
param_10_5_1975_t<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(783*a_v -
217*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                             a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1975_t[m,1]<-sin$mean$a
```

```
  param_10_5_1975_t[m,2]<-sin$mean$b
  param_10_5_1975_t[m,3]<-round((i+j-1)/2,2)
  param_10_5_1975_t[m,4]<-sin$summary[1,3]
  param_10_5_1975_t[m,5]<-sin$summary[1,7]
  param_10_5_1975_t[m,6]<-sin$summary[2,3]
  param_10_5_1975_t[m,7]<-sin$summary[2,7]
  param_10_5_1975_t[m,8]<-sin$summary[1,8]
  param_10_5_1975_t[m,9]<-sin$summary[1,9]
  param_10_5_1975_t[m,10]<-sin$summary[2,8]
  param_10_5_1975_t[m,11]<-sin$summary[2,9]
  param_10_5_1975_t[m,12]<-sin$summary[4,3]
  param_10_5_1975_t[m,13]<-sin$summary[4,7]
  param_10_5_1975_t[m,14]<-sin$summary[5,3]
  param_10_5_1975_t[m,15]<-sin$summary[5,7]
  param_10_5_1975_t[m,16]<-sin$summary[4,8]
  param_10_5_1975_t[m,17]<-sin$summary[4,9]
  param_10_5_1975_t[m,18]<-sin$summary[5,8]
  param_10_5_1975_t[m,19]<-sin$summary[5,9]
  param_10_5_1975_t[m,20]<-sin$summary[7,3]
  param_10_5_1975_t[m,21]<-sin$summary[7,7]
  param_10_5_1975_t[m,22]<-sin$summary[8,3]
  param_10_5_1975_t[m,23]<-sin$summary[8,7]
  param_10_5_1975_t[m,24]<-sin$summary[7,8]
  param_10_5_1975_t[m,25]<-sin$summary[7,9]
  param_10_5_1975_t[m,26]<-sin$summary[8,8]
  param_10_5_1975_t[m,27]<-sin$summary[8,9]
  param_10_5_1975_t[m,28]<-sin$mean$dif_a
  param_10_5_1975_t[m,29]<-sin$mean$dif_b
  param_10_5_1975_t[m,30]<-sin$mean$a_v
  param_10_5_1975_t[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1975_t)
gg$V3 <- gg$V3/12

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
gg$V33 <- NA
gg$V33 <- as.Date(gg$V33, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
  gg$V33[m]<-as.Date(lab1[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]



RSV<-data.frame(ocu = ocu, ocu_v = ocu_v,
                fecha = paste(format(lab, format="%Y"),"\n" ,
                              format(lab1, format="%Y"), sep=""),
                x= seq(1,length(ocu)))
```

```r
pdf("1975_t.pdf", width=10)

### A w####

ggplot()+geom_point(data=gg, aes(x=V32, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V32, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter B")

### A m####

ggplot()+geom_point(data=gg, aes(x=V33, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1975 cohort (total)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V33, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1975 cohort vs  1970 cohort (Difference)",x="Years",
y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
```

```
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1975 cohort vs  1970 cohort (Difference)",x="Years",
y="Parameter B")

##Ocu

colors <- c("1970" = "blue", "1975" = "red")

ggplot(RSV, aes(x = x))+
  geom_line(aes(x=x, y=ocu, color="1970"))+
  geom_line(aes(x=x, y=ocu_v, color="1975"))+
  scale_x_continuous(
    breaks = seq(from=1, to=nrow(RSV),by=24),
    labels = RSV$fecha[seq(from=1, to=nrow(RSV),by=24)])+
  labs(title="Cohort",x="Date", y="Proportion of employed")+ ylim(0,1)
+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  scale_color_manual(values = colors)


dev.off()

################################
#
# 1975
#

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-133

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1980.txt", sep="|", header=T)
ini <- 133
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)

v <- 520
param_1 <- v*31
param_10_5_1980_t<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
```

```
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(777*a_v -
223*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                             a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1980_t[m,1]<-sin$mean$a
  param_10_5_1980_t[m,2]<-sin$mean$b
  param_10_5_1980_t[m,3]<-round((i+j-1)/2,2)
  param_10_5_1980_t[m,4]<-sin$summary[1,3]
  param_10_5_1980_t[m,5]<-sin$summary[1,7]
  param_10_5_1980_t[m,6]<-sin$summary[2,3]
  param_10_5_1980_t[m,7]<-sin$summary[2,7]
  param_10_5_1980_t[m,8]<-sin$summary[1,8]
  param_10_5_1980_t[m,9]<-sin$summary[1,9]
  param_10_5_1980_t[m,10]<-sin$summary[2,8]
  param_10_5_1980_t[m,11]<-sin$summary[2,9]
  param_10_5_1980_t[m,12]<-sin$summary[4,3]
  param_10_5_1980_t[m,13]<-sin$summary[4,7]
  param_10_5_1980_t[m,14]<-sin$summary[5,3]
  param_10_5_1980_t[m,15]<-sin$summary[5,7]
  param_10_5_1980_t[m,16]<-sin$summary[4,8]
```

```
  param_10_5_1980_t[m,17]<-sin$summary[4,9]
  param_10_5_1980_t[m,18]<-sin$summary[5,8]
  param_10_5_1980_t[m,19]<-sin$summary[5,9]
  param_10_5_1980_t[m,20]<-sin$summary[7,3]
  param_10_5_1980_t[m,21]<-sin$summary[7,7]
  param_10_5_1980_t[m,22]<-sin$summary[8,3]
  param_10_5_1980_t[m,23]<-sin$summary[8,7]
  param_10_5_1980_t[m,24]<-sin$summary[7,8]
  param_10_5_1980_t[m,25]<-sin$summary[7,9]
  param_10_5_1980_t[m,26]<-sin$summary[8,8]
  param_10_5_1980_t[m,27]<-sin$summary[8,9]
  param_10_5_1980_t[m,28]<-sin$mean$dif_a
  param_10_5_1980_t[m,29]<-sin$mean$dif_b
  param_10_5_1980_t[m,30]<-sin$mean$a_v
  param_10_5_1980_t[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1980_t)
gg$V3 <- gg$V3/12

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
gg$V33 <- NA
gg$V33 <- as.Date(gg$V33, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
  gg$V33[m]<-as.Date(lab1[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]



RSV<-data.frame(ocu = ocu, ocu_v = ocu_v,
                fecha = paste(format(lab, format="%Y"),"\n" ,
                              format(lab1, format="%Y"), sep=""),
                x= seq(1,length(ocu)))

pdf("1980_t.pdf", width=10)

### A w####

ggplot()+geom_point(data=gg, aes(x=V32, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V32, y=V2), color="red")+
```

```
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter B")

### A m####

ggplot()+geom_point(data=gg, aes(x=V33, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (total)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V33, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1980 cohort (total)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1980 cohort vs 1990 cohort (Difference)",x="Years",
y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1980 cohort vs 1970 cohort (Difference)",x="Years",
y="Parameter B")

##Ocu

colors <- c("1970" = "blue", "1980" = "red")

ggplot(RSV, aes(x = x))+
  geom_line(aes(x=x, y=ocu, color="1970"))+
  geom_line(aes(x=x, y=ocu_v, color="1980"))+
  scale_x_continuous(
    breaks = seq(from=1, to=nrow(RSV),by=24),
    labels = RSV$fecha[seq(from=1, to=nrow(RSV),by=24)])+
```

```
  labs(title="Cohort",x="Date", y="Proportion of employed")+ ylim(0,1)
+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  scale_color_manual(values = colors)


dev.off()





################################
#
# 1980
#

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-193

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1985.txt", sep="|", header=T)
ini <- 193
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)

v <- 520
param_1 <- v*31
param_10_5_1985_t<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(741*a_v -
259*b_v))/(1000*(a_v + b_v))
```

```
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                             a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1985_t[m,1]<-sin$mean$a
  param_10_5_1985_t[m,2]<-sin$mean$b
  param_10_5_1985_t[m,3]<-round((i+j-1)/2,2)
  param_10_5_1985_t[m,4]<-sin$summary[1,3]
  param_10_5_1985_t[m,5]<-sin$summary[1,7]
  param_10_5_1985_t[m,6]<-sin$summary[2,3]
  param_10_5_1985_t[m,7]<-sin$summary[2,7]
  param_10_5_1985_t[m,8]<-sin$summary[1,8]
  param_10_5_1985_t[m,9]<-sin$summary[1,9]
  param_10_5_1985_t[m,10]<-sin$summary[2,8]
  param_10_5_1985_t[m,11]<-sin$summary[2,9]
  param_10_5_1985_t[m,12]<-sin$summary[4,3]
  param_10_5_1985_t[m,13]<-sin$summary[4,7]
  param_10_5_1985_t[m,14]<-sin$summary[5,3]
  param_10_5_1985_t[m,15]<-sin$summary[5,7]
  param_10_5_1985_t[m,16]<-sin$summary[4,8]
  param_10_5_1985_t[m,17]<-sin$summary[4,9]
  param_10_5_1985_t[m,18]<-sin$summary[5,8]
  param_10_5_1985_t[m,19]<-sin$summary[5,9]
  param_10_5_1985_t[m,20]<-sin$summary[7,3]
  param_10_5_1985_t[m,21]<-sin$summary[7,7]
  param_10_5_1985_t[m,22]<-sin$summary[8,3]
  param_10_5_1985_t[m,23]<-sin$summary[8,7]
  param_10_5_1985_t[m,24]<-sin$summary[7,8]
  param_10_5_1985_t[m,25]<-sin$summary[7,9]
  param_10_5_1985_t[m,26]<-sin$summary[8,8]
```

```r
  param_10_5_1985_t[m,27]<-sin$summary[8,9]
  param_10_5_1985_t[m,28]<-sin$mean$dif_a
  param_10_5_1985_t[m,29]<-sin$mean$dif_b
  param_10_5_1985_t[m,30]<-sin$mean$a_v
  param_10_5_1985_t[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1985_t)
gg$V3 <- gg$V3/12

m<-0
gg$V32 <- NA
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
gg$V33 <- NA
gg$V33 <- as.Date(gg$V33, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
  gg$V33[m]<-as.Date(lab1[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]



RSV<-data.frame(ocu = ocu, ocu_v = ocu_v,
                fecha = paste(format(lab, format="%Y"),"\n" ,
                              format(lab1, format="%Y"), sep=""),
                x= seq(1,length(ocu)))

pdf("1985_t.pdf", width=10)

### A w####

ggplot()+geom_point(data=gg, aes(x=V32, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter A")

#### B w#####

ggplot()+geom_point(data=gg, aes(x=V32, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter B")

### A m####

ggplot()+geom_point(data=gg, aes(x=V33, y=V30), color="red")+
```

```
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (total)",x="Date", y="Parameter A")

#### B m#####

ggplot()+geom_point(data=gg, aes(x=V33, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1985 cohort (total)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1985 cohort vs 1970 cohort (Difference)",x="Years",
y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1985 cohort vs 1970 cohort (Difference)",x="Years",
y="Parameter B")

##Ocu

colors <- c("1970" = "blue", "1985" = "red")

ggplot(RSV, aes(x = x))+
  geom_line(aes(x=x, y=ocu, color="1970"))+
  geom_line(aes(x=x, y=ocu_v, color="1985"))+
  scale_x_continuous(
    breaks = seq(from=1, to=nrow(RSV),by=24),
    labels = RSV$fecha[seq(from=1, to=nrow(RSV),by=24)])+
  labs(title="Cohort",x="Date", y="Proportion of employed")+ ylim(0,1)
+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  scale_color_manual(values = colors)


dev.off()


###############################
```

```r
#
# 1985
#

tabla <- read.table("tabla_ocunoocu_t_1970.txt", sep="|", header=T)
ini <- 12
ende <-ini + 540-253

tabla <- tabla[ini:ende,]

ocu <- tabla$suma/(tabla$suma + tabla$abandono)
lab <-as.Date(tabla$meses)

tabla <- read.table("tabla_ocunoocu_t_1990.txt", sep="|", header=T)
ini <- 253
ende <-540
tabla <- tabla[ini:ende,]

ocu_v <- tabla$suma/(tabla$suma + tabla$abandono)
lab1 <-as.Date(tabla$meses)

v <- 520
param_1 <- v*31
param_10_5_1990_t<-matrix(rep(NA,param_1),ncol=31,byrow = T)

m<-1

for (i in seq(10,length(ocu),5))
{
  j<-i-9
  sin1 <- function(){
    for( i in k:N)
    {
      res[i] ~ dbeta(alpha[i], beta[i])
      alpha[i] <- mu[i] * phi
      beta[i]  <- (1-mu[i]) * phi
      mu[i] <- b/(a + b) + (exp(-i*(a + b))*(913*a - 87*b))/(1000*(a +
b))

      res_v[i] ~ dbeta(alpha_v[i], beta_v[i])
      alpha_v[i] <- mu_v[i] * phi_v
      beta_v[i]  <- (1-mu_v[i]) * phi_v
      mu_v[i] <- b_v/(a_v + b_v) + (exp(-i*(a_v + b_v))*(777*a_v -
223*b_v))/(1000*(a_v + b_v))
    }

    a~dunif(0,1)
    b~dunif(0,1)
    phi~dgamma(0.005,0.005)
    a_v~dunif(0,1)
    b_v~dunif(0,1)
    phi_v~dgamma(0.005,0.005)
    dif_a <- a_v - a
    dif_b <- b_v - b


  }
  ocu1<- ocu[j:i]
```

```
  ocu1_v<- ocu_v[j:i]

  datos1 <- list(res=ocu1, N=10,k=1, res_v = ocu1_v)
  iniciales<-function(){list(a=runif(1,0,1),b=runif(1,0,1),
phi=runif(1,0,100),
                             a_v=runif(1,0,1),b_v=runif(1,0,1),
phi_v=runif(1,0,100))}
  parametros <- c("a", "b","phi","a_v", "b_v","phi_v","dif_a",
"dif_b")
  sin<-
bugs(data=datos1,inits=iniciales,parameters=parametros,model=sin1,
            bugs.directory = "C:/RStudio/WinBUGS14",n.iter=500000)

  print(j)
  print(i)
  print(sin$mean$a)
  print(sin$mean$b)

  param_10_5_1990_t[m,1]<-sin$mean$a
  param_10_5_1990_t[m,2]<-sin$mean$b
  param_10_5_1990_t[m,3]<-round((i+j-1)/2,2)
  param_10_5_1990_t[m,4]<-sin$summary[1,3]
  param_10_5_1990_t[m,5]<-sin$summary[1,7]
  param_10_5_1990_t[m,6]<-sin$summary[2,3]
  param_10_5_1990_t[m,7]<-sin$summary[2,7]
  param_10_5_1990_t[m,8]<-sin$summary[1,8]
  param_10_5_1990_t[m,9]<-sin$summary[1,9]
  param_10_5_1990_t[m,10]<-sin$summary[2,8]
  param_10_5_1990_t[m,11]<-sin$summary[2,9]
  param_10_5_1990_t[m,12]<-sin$summary[4,3]
  param_10_5_1990_t[m,13]<-sin$summary[4,7]
  param_10_5_1990_t[m,14]<-sin$summary[5,3]
  param_10_5_1990_t[m,15]<-sin$summary[5,7]
  param_10_5_1990_t[m,16]<-sin$summary[4,8]
  param_10_5_1990_t[m,17]<-sin$summary[4,9]
  param_10_5_1990_t[m,18]<-sin$summary[5,8]
  param_10_5_1990_t[m,19]<-sin$summary[5,9]
  param_10_5_1990_t[m,20]<-sin$summary[7,3]
  param_10_5_1990_t[m,21]<-sin$summary[7,7]
  param_10_5_1990_t[m,22]<-sin$summary[8,3]
  param_10_5_1990_t[m,23]<-sin$summary[8,7]
  param_10_5_1990_t[m,24]<-sin$summary[7,8]
  param_10_5_1990_t[m,25]<-sin$summary[7,9]
  param_10_5_1990_t[m,26]<-sin$summary[8,8]
  param_10_5_1990_t[m,27]<-sin$summary[8,9]
  param_10_5_1990_t[m,28]<-sin$mean$dif_a
  param_10_5_1990_t[m,29]<-sin$mean$dif_b
  param_10_5_1990_t[m,30]<-sin$mean$a_v
  param_10_5_1990_t[m,31]<-sin$mean$b_v
  m<-m+1

}

gg <- as.data.frame(param_10_5_1990_t)
gg$V3 <- gg$V3/12

m<-0
gg$V32 <- NA
```

```
gg$V32 <- as.Date(gg$V32, "%Y-%m-%d")
gg$V33 <- NA
gg$V33 <- as.Date(gg$V33, "%Y-%m-%d")
for (i in seq(10,length(ocu),5))
{
  m<-m+1
  j<-i-9
  gg$V32[m]<-as.Date(lab[j+4], "Y%-%m-%d")
  gg$V33[m]<-as.Date(lab1[j+4], "Y%-%m-%d")
}
gg <- gg[complete.cases(gg),]



RSV<-data.frame(ocu = ocu, ocu_v = ocu_v,
                fecha = paste(format(lab, format="%Y"),"\n" ,
                              format(lab1, format="%Y"), sep=""),
                x= seq(1,length(ocu)))

pdf("1990_t.pdf", width=10)

### A w###

ggplot()+geom_point(data=gg, aes(x=V32, y=V1), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V4, ymax=V5), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter A")

#### B w####

ggplot()+geom_point(data=gg, aes(x=V32, y=V2), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V32,ymin=V6, ymax=V7), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V32), max(gg$V32)))+ ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1970 cohort (total)",x="Date", y="Parameter B")

### A m###

ggplot()+geom_point(data=gg, aes(x=V33, y=V30), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V12, ymax=V13), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+  ylim(0,1)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (total)",x="Date", y="Parameter A")

#### B m####

ggplot()+geom_point(data=gg, aes(x=V33, y=V31), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V33,ymin=V14, ymax=V15), width=2.3)+
  scale_x_date(date_breaks="2 year", date_labels = "%Y",
               limits = c(min(gg$V33), max(gg$V33)))+ ylim(0,1)+
```

```
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  labs(title="1990 cohort (total)",x="Date", y="Parameter B")

#### Dif A ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V28), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V20, ymax=V21), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1990 cohort vs 1970 cohort (Difference)",x="Years",
y="Parameter A")

#### Dif B ####

ggplot()+geom_point(data=gg, aes(x=V3, y=V29), color="red")+
  #geom_line(data=RSV, aes(x=seq(1,460,1), y=pred1), color="red")+
  geom_errorbar(data=gg,  aes(x=V3,ymin=V22, ymax=V23), width=0)+
  theme(axis.text.x = element_text(angle=45,vjust=0.5))+
  scale_x_continuous(breaks = seq(0, max(gg$V3), by = 2))+
  labs(title="1990 cohort vs 1970 cohort (Difference)",x="Years",
y="Parameter B")

##Ocu

colors <- c("1970" = "blue", "1990" = "red")

ggplot(RSV, aes(x = x))+
  geom_line(aes(x=x, y=ocu, color="1970"))+
  geom_line(aes(x=x, y=ocu_v, color="1990"))+
  scale_x_continuous(
    breaks = seq(from=1, to=nrow(RSV),by=24),
    labels = RSV$fecha[seq(from=1, to=nrow(RSV),by=24)])+
  labs(title="Cohort",x="Date", y="Proportion of employed")+ ylim(0,1)
+
  theme(axis.text.x = element_text(angle=45,vjust=0.5),
        legend.title = element_blank(), legend.position="bottom")+
  scale_color_manual(values = colors)


dev.off()

save.image("C:/Users/Raistlol/Nextcloud/Puerto
Rico/Tesis/ocunoocu_pr_final.RData")
```

C. Appendix: Working Life Expectancy

C.1 Working Life Expectancy

1976

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life ex-pectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of be-longing to labour force	Expected period outside the labour force
16.00	97635.44	97607.76	5780003.33	59.20	0.46	44997.18	2722524.04	27.88	31.32
17.00	97580.08	97553.22	5682395.57	58.23	0.56	54239.59	2677526.86	27.44	30.79
18.00	97526.36	97490.95	5584842.35	57.26	0.58	56739.73	2623287.27	26.90	30.37
19.00	97455.54	97420.28	5487351.40	56.31	0.62	60595.42	2566547.54	26.34	29.97
20.00	97385.03	97347.52	5389931.12	55.35	0.63	61231.59	2505952.13	25.73	29.61
21.00	97310.01	97277.28	5292583.60	54.39	0.45	43872.05	2444720.54	25.12	29.27
22.00	97244.55	97208.55	5195306.32	53.43	0.55	53075.87	2400848.48	24.69	28.74
23.00	97172.55	97138.62	5098097.76	52.46	0.66	63625.79	2347772.61	24.16	28.30
24.00	97104.68	97066.87	5000959.15	51.50	0.68	65617.21	2284146.82	23.52	27.98
25.00	97029.06	96990.00	4903892.27	50.54	0.67	64983.30	2218529.61	22.86	27.68
26.00	96950.93	96914.32	4806902.28	49.58	0.66	63478.88	2153546.31	22.21	27.37
27.00	96877.70	96841.40	4709987.96	48.62	0.66	63431.12	2090067.44	21.57	27.04
28.00	96805.10	96762.47	4613146.56	47.65	0.63	60670.07	2026636.32	20.94	26.72
29.00	96719.83	96676.92	4516384.09	46.70	0.64	62259.93	1965966.25	20.33	26.37
30.00	96634.00	96586.66	4419707.18	45.74	0.64	61429.11	1903706.32	19.70	26.04
31.00	96539.31	96494.04	4323120.52	44.78	0.61	58571.88	1842277.21	19.08	25.70
32.00	96448.77	96405.27	4226626.48	43.82	0.64	61602.97	1783705.32	18.49	25.33
33.00	96361.77	96305.49	4130221.20	42.86	0.62	59902.02	1722102.35	17.87	24.99
34.00	96249.22	96196.53	4033915.71	41.91	0.60	58102.71	1662200.34	17.27	24.64
35.00	96143.85	96081.91	3937719.18	40.96	0.65	62164.99	1604097.63	16.68	24.27
36.00	96019.97	95952.49	3841637.27	40.01	0.61	58626.97	1541932.63	16.06	23.95
37.00	95885.02	95814.49	3745684.78	39.06	0.60	57967.77	1483305.66	15.47	23.59
38.00	95743.97	95670.02	3649870.28	38.12	0.64	61707.16	1425337.89	14.89	23.23
39.00	95596.07	95519.14	3554200.26	37.18	0.62	58839.79	1363630.73	14.26	22.91
40.00	95442.21	95352.61	3458681.13	36.24	0.62	58927.91	1304790.94	13.67	22.57
41.00	95263.02	95174.15	3363328.51	35.31	0.65	61672.85	1245863.03	13.08	22.23
42.00	95085.29	94986.47	3268154.36	34.37	0.63	59841.48	1184190.17	12.45	21.92
43.00	94887.66	94773.45	3173167.89	33.44	0.60	56769.30	1124348.70	11.85	21.59
44.00	94659.24	94530.95	3078394.44	32.52	0.63	59176.37	1067579.40	11.28	21.24
45.00	94402.65	94263.23	2983863.49	31.61	0.61	57971.88	1008403.03	10.68	20.93
46.00	94123.80	93966.52	2889600.26	30.70	0.63	58917.01	950431.14	10.10	20.60
47.00	93809.25	93635.56	2795633.74	29.80	0.62	58241.32	891514.13	9.50	20.30
48.00	93461.87	93277.86	2701998.18	28.91	0.61	56712.94	833272.82	8.92	19.99
49.00	93093.86	92892.67	2608720.32	28.02	0.62	57965.03	776559.87	8.34	19.68
50.00	92691.48	92464.57	2515827.65	27.14	0.61	56126.00	718594.85	7.75	19.39
51.00	92237.67	91997.23	2423363.07	26.27	0.60	55474.33	662468.85	7.18	19.09
52.00	91756.80	91499.95	2331365.84	25.41	0.60	54991.47	606994.52	6.62	18.79
53.00	91243.10	90962.10	2239865.89	24.55	0.57	51939.36	552003.05	6.05	18.50
54.00	90681.09	90365.07	2148903.79	23.70	0.61	54761.23	500063.69	5.51	18.18
55.00	90049.06	89712.94	2058538.72	22.86	0.57	51136.38	445302.46	4.95	17.92
56.00	89376.82	89001.24	1968825.78	22.03	0.53	47526.66	394166.08	4.41	17.62
57.00	88625.66	88243.21	1879824.54	21.21	0.54	47827.82	346639.42	3.91	17.30
58.00	87860.76	87435.43	1791581.33	20.39	0.52	45903.60	298811.60	3.40	16.99
59.00	87010.10	86535.76	1704145.90	19.59	0.53	45863.95	252908.00	2.91	16.68
60.00	86061.42	85567.19	1617610.15	18.80	0.49	41842.36	207044.05	2.41	16.39
61.00	85072.96	84564.07	1532042.96	18.01	0.47	39998.80	165201.69	1.94	16.07
62.00	84055.18	83476.23	1447478.89	17.22	0.44	36813.02	125202.89	1.49	15.73
63.00	82897.29	82264.00	1364002.66	16.45	0.42	34550.88	88389.87	1.07	15.39
64.00	81630.72	80959.94	1281738.65	15.70	0.38	31088.62	53838.99	0.66	15.04
65.00	80289.16	79546.76	1200778.71	14.96	0.29	22750.37	22750.37	0.28	14.67

1977

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life ex-pectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of be-longing to labour force	Expected period outside the labour force
16.00	97756.44	97730.01	5823677.91	59.57	0.42	40948.87	2721032.02	27.83	31.74
17.00	97703.58	97674.60	5725947.90	58.61	0.54	52939.63	2680083.15	27.43	31.17
18.00	97645.62	97611.79	5628273.30	57.64	0.58	56712.45	2627143.51	26.90	30.73
19.00	97577.96	97542.66	5530661.51	56.68	0.62	60964.16	2570431.06	26.34	30.34
20.00	97507.36	97471.35	5433118.85	55.72	0.61	59847.41	2509466.90	25.74	29.98
21.00	97435.34	97396.46	5335647.50	54.76	0.42	41198.70	2449619.49	25.14	29.62
22.00	97357.58	97321.68	5238251.04	53.80	0.58	56641.22	2408420.79	24.74	29.07
23.00	97285.78	97247.18	5140929.36	52.84	0.68	65641.84	2351779.57	24.17	28.67
24.00	97208.57	97170.92	5043682.18	51.89	0.65	62772.41	2286137.73	23.52	28.37
25.00	97133.27	97095.28	4946511.26	50.92	0.67	64665.46	2223365.31	22.89	28.04
26.00	97057.30	97016.89	4849415.98	49.96	0.66	64128.16	2158699.85	22.24	27.72

27.00	96976.48	96940.33	4752399.08	49.01	0.66	63786.74	2094571.69	21.60	27.41
28.00	96904.18	96863.91	4655458.75	48.04	0.66	63736.46	2030784.95	20.96	27.09
29.00	96823.65	96783.24	4558594.84	47.08	0.64	62038.06	1967048.49	20.32	26.77
30.00	96742.84	96699.02	4461811.59	46.12	0.64	61790.67	1905010.43	19.69	26.43
31.00	96655.20	96609.07	4365112.57	45.16	0.61	59317.97	1843219.76	19.07	26.09
32.00	96562.93	96516.12	4268503.51	44.20	0.64	61963.35	1783901.79	18.47	25.73
33.00	96469.30	96420.47	4171987.39	43.25	0.63	61034.16	1721938.45	17.85	25.40
34.00	96371.64	96314.81	4075566.92	42.29	0.63	60293.07	1660904.29	17.23	25.06
35.00	96257.97	96207.23	3979252.11	41.34	0.63	60321.94	1600611.22	16.63	24.71
36.00	96156.50	96097.99	3883044.88	40.38	0.64	61694.91	1540289.28	16.02	24.36
37.00	96039.48	95973.89	3786946.89	39.43	0.62	59887.70	1478594.37	15.40	24.04
38.00	95908.29	95834.48	3690973.00	38.48	0.61	58363.20	1418706.67	14.79	23.69
39.00	95760.67	95678.48	3595138.52	37.54	0.64	61042.87	1360343.47	14.21	23.34
40.00	95596.29	95511.30	3499460.04	36.61	0.62	59503.54	1299300.60	13.59	23.02
41.00	95426.30	95338.16	3403948.74	35.67	0.62	59300.34	1239797.06	12.99	22.68
42.00	95250.02	95147.17	3308610.58	34.74	0.64	61274.78	1180496.73	12.39	22.34
43.00	95044.33	94935.84	3213463.41	33.81	0.62	58765.29	1119221.94	11.78	22.03
44.00	94827.35	94704.95	3118527.57	32.89	0.61	57864.72	1060456.66	11.18	21.70
45.00	94582.54	94445.12	3023822.62	31.97	0.63	59122.64	1002591.94	10.60	21.37
46.00	94307.70	94164.47	2929377.50	31.06	0.62	58758.63	943469.29	10.00	21.06
47.00	94021.24	93864.14	2835213.04	30.16	0.62	58101.90	884710.66	9.41	20.75
48.00	93707.05	93537.40	2741348.89	29.25	0.62	57619.04	826608.76	8.82	20.43
49.00	93367.74	93173.25	2647811.50	28.36	0.59	55438.09	768989.72	8.24	20.12
50.00	92978.76	92766.15	2554638.24	27.48	0.61	56401.82	713551.64	7.67	19.80
51.00	92553.54	92327.67	2461872.09	26.60	0.61	56596.86	657149.82	7.10	19.50
52.00	92101.80	91848.42	2369544.41	25.73	0.59	54282.41	600552.95	6.52	19.21
53.00	91595.03	91322.39	2277696.00	24.87	0.59	54062.86	546270.54	5.96	18.90
54.00	91049.76	90757.30	2186373.61	24.01	0.57	52094.69	492207.68	5.41	18.61
55.00	90464.85	90139.69	2095616.30	23.16	0.58	52551.44	440112.99	4.87	18.30
56.00	89814.52	89458.34	2005476.62	22.33	0.56	50365.04	387561.55	4.32	18.01
57.00	89102.15	88710.48	1916018.28	21.50	0.55	48702.06	337196.51	3.78	17.72
58.00	88318.82	87910.71	1827307.80	20.69	0.53	46856.41	288494.45	3.27	17.42
59.00	87502.60	87044.83	1739397.09	19.88	0.51	44218.77	241638.05	2.76	17.12
60.00	86587.05	86090.85	1652352.26	19.08	0.48	40979.24	197419.27	2.28	16.80
61.00	85594.64	85088.69	1566261.41	18.30	0.43	36673.23	156440.03	1.83	16.47
62.00	84582.75	84033.19	1481172.72	17.51	0.43	35798.14	119766.80	1.42	16.10
63.00	83483.62	82876.85	1397139.53	16.74	0.40	33067.86	83968.67	1.01	15.73
64.00	82270.07	81607.81	1314262.69	15.97	0.38	30602.93	50900.81	0.62	15.36
65.00	80945.55	80228.76	1232654.87	15.23	0.25	20297.88	20297.88	0.25	14.98

1978

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	97816.22	97792.03	5839978.44	59.70	0.40	38823.44	2699834.36	27.60	32.10
17.00	97767.85	97738.07	5742186.40	58.73	0.49	47989.39	2661010.92	27.22	31.52
18.00	97708.30	97669.20	5644448.33	57.77	0.57	55476.10	2613021.53	26.74	31.03
19.00	97630.10	97590.49	5546779.13	56.81	0.60	58163.93	2557545.42	26.20	30.62
20.00	97550.89	97511.69	5449188.64	55.86	0.56	54216.50	2499381.49	25.62	30.24
21.00	97472.50	97437.13	5351676.95	54.90	0.43	41995.41	2445164.99	25.09	29.82
22.00	97401.77	97360.90	5254239.81	53.94	0.62	60753.20	2403169.58	24.67	29.27
23.00	97320.03	97279.30	5156878.91	52.99	0.69	66928.16	2342416.38	24.07	28.92
24.00	97238.56	97196.40	5059599.61	52.03	0.67	65218.78	2275488.22	23.40	28.63
25.00	97154.24	97115.00	4962403.21	51.08	0.68	66426.66	2210269.44	22.75	28.33
26.00	97075.76	97037.34	4865288.21	50.12	0.66	63559.46	2143842.78	22.08	28.03
27.00	96998.92	96956.90	4768250.87	49.16	0.66	63894.60	2080283.32	21.45	27.71
28.00	96914.87	96873.64	4671293.97	48.20	0.63	60836.65	2016388.72	20.81	27.39
29.00	96832.41	96793.81	4574420.33	47.24	0.64	61948.04	1955552.07	20.20	27.05
30.00	96755.21	96708.67	4477626.52	46.28	0.64	62377.09	1893604.03	19.57	26.71
31.00	96662.13	96617.44	4380917.85	45.32	0.66	63670.89	1831226.94	18.94	26.38
32.00	96572.75	96520.59	4284300.41	44.36	0.61	58684.52	1767556.05	18.30	26.06
33.00	96468.43	96414.27	4187779.82	43.41	0.63	61030.23	1708871.53	17.71	25.70
34.00	96360.10	96309.49	4091365.55	42.46	0.63	60289.74	1647841.30	17.10	25.36
35.00	96258.87	96201.75	3995056.06	41.50	0.61	59164.08	1587551.56	16.49	25.01
36.00	96144.64	96085.25	3898854.31	40.55	0.63	60918.05	1528387.48	15.90	24.66
37.00	96025.85	95967.74	3802769.06	39.60	0.63	60843.55	1467469.43	15.28	24.32
38.00	95909.63	95833.64	3706801.32	38.65	0.63	60566.86	1406625.88	14.67	23.98
39.00	95757.64	95683.03	3610967.68	37.71	0.62	59610.53	1346059.02	14.06	23.65
40.00	95608.42	95519.94	3515284.65	36.77	0.61	58458.21	1286448.49	13.46	23.31
41.00	95431.46	95340.78	3419764.70	35.83	0.61	58348.56	1227990.29	12.87	22.97
42.00	95250.10	95148.85	3324423.92	34.90	0.62	59182.59	1169641.73	12.28	22.62
43.00	95047.60	94935.44	3229275.07	33.98	0.63	60094.13	1110459.14	11.68	22.29
44.00	94823.27	94702.42	3134339.63	33.05	0.61	58241.99	1050365.01	11.08	21.98
45.00	94581.57	94446.94	3039637.20	32.14	0.61	57329.29	992123.02	10.49	21.65
46.00	94312.30	94171.14	2945190.27	31.23	0.64	59987.01	934793.73	9.91	21.32
47.00	94029.97	93871.80	2851019.13	30.32	0.60	56792.44	874806.72	9.30	21.02
48.00	93713.63	93536.50	2757147.33	29.42	0.61	57431.41	818014.28	8.73	20.69
49.00	93359.36	93172.75	2663610.84	28.53	0.60	55996.82	760582.87	8.15	20.38
50.00	92986.13	92772.75	2570438.09	27.64	0.59	54364.83	704586.05	7.58	20.07
51.00	92559.36	92335.76	2477665.34	26.77	0.59	54939.77	650221.22	7.02	19.74
52.00	92112.16	91865.89	2385329.59	25.90	0.58	53465.95	595281.44	6.46	19.43
53.00	91619.62	91346.50	2293463.70	25.03	0.56	51519.42	541815.50	5.91	19.12
54.00	91073.37	90780.81	2202117.20	24.18	0.60	54196.14	490296.07	5.38	18.80

55.00	90488.25	90174.18	2111336.39	23.33	0.57	51399.28	436099.93	4.82	18.51
56.00	89860.10	89522.07	2021162.21	22.49	0.57	51117.10	384700.65	4.28	18.21
57.00	89184.03	88809.34	1931640.15	21.66	0.55	48845.14	333583.55	3.74	17.92
58.00	88434.64	88018.42	1842830.81	20.84	0.54	47529.95	284738.41	3.22	17.62
59.00	87602.20	87164.03	1754812.39	20.03	0.52	45325.29	237208.46	2.71	17.32
60.00	86725.85	86242.58	1667648.36	19.23	0.45	38550.43	191883.17	2.21	17.02
61.00	85759.31	85243.86	1581405.77	18.44	0.43	36825.35	153332.73	1.79	16.65
62.00	84728.42	84178.47	1496161.91	17.66	0.41	34176.46	116507.38	1.38	16.28
63.00	83628.53	83050.66	1411983.44	16.88	0.39	32721.96	82330.93	0.98	15.90
64.00	82472.79	81833.01	1328932.78	16.11	0.38	31014.71	49608.97	0.60	15.51
65.00	81193.24	80494.61	1247099.77	15.36	0.23	18594.26	18594.26	0.23	15.13

1979

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	97954.68	97929.22	5881670.39	60.04	0.36	35450.38	2701384.46	27.58	32.47
17.00	97903.77	97872.62	5783741.17	59.08	0.48	46783.11	2665934.09	27.23	31.85
18.00	97841.47	97806.81	5685868.55	58.11	0.55	53500.33	2619150.97	26.77	31.34
19.00	97772.16	97733.95	5588061.74	57.15	0.59	57565.29	2565650.65	26.24	30.91
20.00	97695.73	97656.88	5490327.79	56.20	0.54	52637.06	2508085.35	25.67	30.53
21.00	97618.02	97580.65	5392670.92	55.24	0.43	41959.68	2455448.30	25.15	30.09
22.00	97543.27	97504.29	5295090.27	54.28	0.66	64840.35	2413488.62	24.74	29.54
23.00	97465.31	97426.00	5197585.98	53.33	0.68	66639.38	2348648.27	24.10	29.23
24.00	97386.69	97349.76	5100159.98	52.37	0.69	66781.94	2282008.88	23.43	28.94
25.00	97312.83	97274.05	5002810.22	51.41	0.70	68189.11	2215226.95	22.76	28.65
26.00	97235.26	97193.79	4905536.18	50.45	0.68	65897.39	2147037.84	22.08	28.37
27.00	97152.32	97113.11	4808342.39	49.49	0.66	64483.11	2081140.45	21.42	28.07
28.00	97073.91	97034.06	4711229.27	48.53	0.67	65206.89	2016657.35	20.77	27.76
29.00	96994.21	96954.00	4614195.22	47.57	0.64	62050.56	1951450.46	20.12	27.45
30.00	96913.78	96868.13	4517241.22	46.61	0.65	63254.89	1889399.90	19.50	27.12
31.00	96822.49	96777.87	4420373.09	45.65	0.63	60873.28	1826145.01	18.86	26.79
32.00	96733.24	96689.34	4323595.22	44.70	0.63	60817.59	1765271.73	18.25	26.45
33.00	96645.44	96591.75	4226905.88	43.74	0.66	63364.19	1704454.14	17.64	26.10
34.00	96538.06	96487.16	4130314.13	42.78	0.62	59822.04	1641089.95	17.00	25.78
35.00	96436.27	96379.57	4033826.97	41.83	0.64	61682.93	1581267.91	16.40	25.43
36.00	96322.87	96264.07	3937447.40	40.88	0.65	62667.91	1519584.98	15.78	25.10
37.00	96205.26	96146.08	3841183.33	39.93	0.62	60091.30	1456917.08	15.14	24.78
38.00	96086.90	96015.18	3745037.25	38.98	0.63	60201.52	1396825.78	14.54	24.44
39.00	95943.45	95861.44	3649022.08	38.03	0.63	60296.85	1336624.26	13.93	24.10
40.00	95779.44	95697.25	3553160.63	37.10	0.62	59523.69	1276327.41	13.33	23.77
41.00	95615.07	95524.50	3457463.38	36.16	0.63	60275.96	1216803.72	12.73	23.43
42.00	95433.93	95330.72	3361938.88	35.23	0.64	60725.67	1156527.76	12.12	23.11
43.00	95227.51	95120.02	3266608.15	34.30	0.60	57452.49	1095802.09	11.51	22.80
44.00	95012.53	94889.49	3171488.13	33.38	0.64	60254.82	1038349.60	10.93	22.45
45.00	94766.45	94632.51	3076598.65	32.47	0.60	57158.04	978094.77	10.32	22.14
46.00	94498.58	94361.04	2981966.14	31.56	0.62	58126.40	920936.74	9.75	21.81
47.00	94223.50	94070.52	2887605.10	30.65	0.61	57100.80	862810.34	9.16	21.49
48.00	93917.54	93747.11	2793534.58	29.74	0.61	57091.99	805709.53	8.58	21.17
49.00	93576.68	93396.48	2699787.47	28.85	0.63	58746.38	748617.54	8.00	20.85
50.00	93216.27	93005.81	2606390.99	27.96	0.60	55803.48	689871.16	7.40	20.56
51.00	92795.34	92575.79	2513385.18	27.09	0.58	54064.26	634067.67	6.83	20.25
52.00	92356.24	92106.61	2420809.39	26.21	0.59	54803.44	580003.41	6.28	19.93
53.00	91856.99	91591.60	2328702.78	25.35	0.57	51840.85	525199.98	5.72	19.63
54.00	91326.22	91041.88	2237111.18	24.50	0.56	51165.54	473359.13	5.18	19.31
55.00	90757.54	90446.75	2146069.30	23.65	0.56	51011.97	422193.59	4.65	18.99
56.00	90135.96	89807.58	2055622.55	22.81	0.56	50651.47	371181.63	4.12	18.69
57.00	89479.20	89117.57	1965814.97	21.97	0.52	46519.37	320530.15	3.58	18.39
58.00	88755.95	88358.55	1876697.39	21.14	0.52	46388.24	274010.78	3.09	18.06
59.00	87961.14	87521.27	1788338.85	20.33	0.48	42360.29	227622.54	2.59	17.74
60.00	87081.39	86597.36	1700817.58	19.53	0.43	37669.53	185262.25	2.13	17.40
61.00	86113.33	85626.59	1614220.22	18.75	0.43	37247.57	147592.39	1.71	17.03
62.00	85139.85	84586.84	1528593.62	17.95	0.40	34257.67	110344.83	1.30	16.66
63.00	84033.83	83467.26	1444006.79	17.18	0.37	30549.02	76087.16	0.91	16.28
64.00	82900.70	82280.19	1360539.52	16.41	0.33	27070.18	45538.14	0.55	15.86
65.00	81659.68	80999.81	1278259.33	15.65	0.23	18467.96	18467.96	0.23	15.43

1980

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98181.13	98157.14	5929720.16	60.40	0.35	34158.68	2686383.77	27.36	33.03
17.00	98133.15	98106.68	5831563.02	59.43	0.44	43166.94	2652225.09	27.03	32.40

18.00	98080.22	98051.21	5733456.34	58.46	0.52	50496.37	2609058.15	26.60	31.86
19.00	98022.20	97988.53	5635405.13	57.49	0.57	55657.48	2558561.78	26.10	31.39
20.00	97954.85	97921.83	5537416.61	56.53	0.49	48079.62	2502904.29	25.55	30.98
21.00	97888.80	97851.47	5439494.78	55.57	0.48	46577.30	2454824.68	25.08	30.49
22.00	97814.14	97778.81	5341643.31	54.61	0.66	64827.35	2408247.38	24.62	29.99
23.00	97743.48	97706.70	5243864.50	53.65	0.69	67124.50	2343420.02	23.98	29.67
24.00	97669.92	97630.50	5146157.80	52.69	0.68	66095.85	2276295.52	23.31	29.38
25.00	97591.08	97551.68	5048527.29	51.73	0.68	66530.25	2210199.67	22.65	29.08
26.00	97512.27	97474.57	4950975.61	50.77	0.70	68622.10	2143669.42	21.98	28.79
27.00	97436.87	97398.98	4853501.04	49.81	0.66	64185.93	2075047.33	21.30	28.52
28.00	97361.10	97323.58	4756102.06	48.85	0.65	63552.30	2010861.40	20.65	28.20
29.00	97286.07	97244.06	4658778.48	47.89	0.67	65056.28	1947309.10	20.02	27.87
30.00	97202.06	97158.35	4561534.42	46.93	0.65	62764.29	1882252.82	19.36	27.56
31.00	97114.63	97067.88	4464376.07	45.97	0.63	61249.83	1819488.53	18.74	27.23
32.00	97021.12	96972.37	4367308.19	45.01	0.64	62159.29	1758238.70	18.12	26.89
33.00	96923.61	96878.00	4270335.82	44.06	0.64	62389.43	1696079.41	17.50	26.56
34.00	96832.39	96781.92	4173457.82	43.10	0.62	59908.01	1633689.98	16.87	26.23
35.00	96731.45	96678.69	4076675.91	42.14	0.64	61777.69	1573781.97	16.27	25.87
36.00	96625.94	96564.51	3979997.21	41.19	0.63	60739.07	1512004.28	15.65	25.54
37.00	96503.07	96442.61	3883432.70	40.24	0.64	61723.27	1451265.21	15.04	25.20
38.00	96382.15	96321.89	3786990.10	39.29	0.62	59912.22	1389541.94	14.42	24.87
39.00	96261.63	96187.18	3690668.21	38.34	0.63	60597.92	1329629.72	13.81	24.53
40.00	96112.73	96027.67	3594481.02	37.40	0.61	58960.99	1269031.80	13.20	24.20
41.00	95942.61	95856.33	3498453.35	36.46	0.63	60197.77	1210070.81	12.61	23.85
42.00	95770.04	95665.60	3402597.03	35.53	0.61	57973.35	1149873.04	12.01	23.52
43.00	95561.16	95462.96	3306931.43	34.61	0.64	60905.37	1091899.68	11.43	23.18
44.00	95364.76	95248.19	3211468.47	33.68	0.60	57434.66	1030994.31	10.81	22.86
45.00	95131.62	95003.89	3116220.28	32.76	0.62	59092.42	973559.66	10.23	22.52
46.00	94876.16	94747.74	3021216.38	31.84	0.62	58554.10	914467.23	9.64	22.21
47.00	94619.31	94477.00	2926468.65	30.93	0.61	57914.40	855913.13	9.05	21.88
48.00	94334.69	94171.40	2831991.65	30.02	0.60	56408.67	797998.73	8.46	21.56
49.00	94008.10	93831.47	2737820.25	29.12	0.60	56392.71	741590.07	7.89	21.23
50.00	93654.84	93445.43	2643988.78	28.23	0.58	54385.24	685197.35	7.32	20.92
51.00	93236.02	93023.41	2550543.35	27.36	0.59	54604.74	630812.11	6.77	20.59
52.00	92810.80	92579.67	2457519.94	26.48	0.57	53233.31	576207.37	6.21	20.27
53.00	92348.55	92087.77	2364940.27	25.61	0.58	53410.91	522974.06	5.66	19.95
54.00	91827.00	91553.50	2272852.49	24.75	0.56	51544.62	469563.15	5.11	19.64
55.00	91280.01	90975.77	2181298.99	23.90	0.55	49763.75	418018.53	4.58	19.32
56.00	90671.54	90340.50	2090323.22	23.05	0.55	49506.59	368254.78	4.06	18.99
57.00	90009.45	89662.23	1999982.72	22.22	0.54	48596.93	318748.19	3.54	18.68
58.00	89315.00	88939.12	1910320.50	21.39	0.52	46248.34	270151.26	3.02	18.36
59.00	88563.25	88142.97	1821381.37	20.57	0.52	45834.35	223902.92	2.53	18.04
60.00	87722.70	87259.73	1733238.40	19.76	0.44	38394.28	178068.57	2.03	17.73
61.00	86796.76	86331.19	1645978.67	18.96	0.40	34100.82	139674.29	1.61	17.35
62.00	85865.63	85329.84	1559647.48	18.16	0.38	32169.35	105573.47	1.23	16.93
63.00	84794.05	84235.92	1474317.64	17.39	0.34	28977.16	73404.12	0.87	16.52
64.00	83677.79	83067.06	1390081.72	16.61	0.33	27412.13	44426.96	0.53	16.08
65.00	82456.33	81802.09	1307014.66	15.85	0.21	17014.83	17014.83	0.21	15.64

1981

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98249.49	98225.53	5946106.49	60.52	0.30	29565.89	2683977.97	27.32	33.20
17.00	98201.58	98177.41	5847880.95	59.55	0.44	43198.06	2654412.08	27.03	32.52
18.00	98153.24	98122.99	5749703.55	58.58	0.49	48178.39	2611214.02	26.60	31.98
19.00	98092.74	98057.56	5651580.55	57.61	0.56	55402.52	2563035.63	26.13	31.49
20.00	98022.38	97986.51	5553523.00	56.66	0.44	43506.01	2507633.11	25.58	31.07
21.00	97950.65	97911.25	5455536.48	55.70	0.51	49934.74	2464127.10	25.16	30.54
22.00	97871.86	97838.36	5357625.23	54.74	0.66	64964.67	2414192.36	24.67	30.07
23.00	97804.87	97769.27	5259786.86	53.78	0.72	70002.79	2349227.69	24.02	29.76
24.00	97733.66	97699.55	5162017.60	52.82	0.70	68096.59	2279224.89	23.32	29.50
25.00	97665.44	97626.77	5064318.05	51.85	0.72	69998.39	2211128.31	22.64	29.21
26.00	97588.10	97556.92	4966691.28	50.89	0.68	66533.82	2141129.91	21.94	28.95
27.00	97525.74	97487.95	4869134.36	49.93	0.69	67461.66	2074596.09	21.27	28.65
28.00	97450.15	97411.11	4771646.42	48.96	0.65	63512.05	2007134.44	20.60	28.37
29.00	97372.08	97334.31	4674235.31	48.00	0.67	65213.99	1943622.39	19.96	28.04
30.00	97296.55	97253.63	4576900.99	47.04	0.65	63506.62	1878408.40	19.31	27.73
31.00	97210.72	97168.53	4479647.36	46.08	0.66	63645.39	1814901.78	18.67	27.41
32.00	97126.35	97084.12	4382478.82	45.12	0.64	62425.09	1751256.39	18.03	27.09
33.00	97041.90	96995.02	4285394.70	44.16	0.63	61106.86	1688831.30	17.40	26.76
34.00	96948.15	96902.14	4188399.68	43.20	0.64	61629.76	1627724.43	16.79	26.41
35.00	96856.13	96801.63	4091497.54	42.24	0.62	60501.02	1566094.67	16.17	26.07
36.00	96747.14	96689.94	3994695.91	41.29	0.63	61301.42	1505593.65	15.56	25.73
37.00	96632.73	96570.83	3898005.97	40.34	0.63	60743.05	1444292.23	14.95	25.39
38.00	96508.93	96444.68	3801435.14	39.39	0.64	61338.82	1383549.18	14.34	25.05
39.00	96380.43	96313.82	3704990.46	38.44	0.62	59425.63	1322210.36	13.72	24.72
40.00	96247.21	96167.52	3608676.64	37.49	0.62	59720.03	1262784.74	13.12	24.37
41.00	96087.83	95996.85	3512509.12	36.56	0.62	59422.05	1203064.71	12.52	24.03
42.00	95905.86	95813.68	3416512.27	35.62	0.62	59883.55	1143642.66	11.92	23.70
43.00	95721.51	95611.49	3320698.59	34.69	0.63	60330.85	1083759.11	11.32	23.37
44.00	95501.48	95393.12	3225087.10	33.77	0.61	58475.99	1023428.25	10.72	23.05
45.00	95284.77	95159.58	3129693.97	32.85	0.59	55953.83	964952.27	10.13	22.72
46.00	95034.38	94900.14	3034534.40	31.93	0.62	59312.59	908998.44	9.56	22.37

47.00	94765.91	94612.99	2939634.25	31.02	0.63	59416.96	849685.85	8.97	22.05
48.00	94460.08	94301.79	2845021.26	30.12	0.58	54695.04	790268.89	8.37	21.75
49.00	94143.50	93966.61	2750719.47	29.22	0.61	57601.53	735573.85	7.81	21.41
50.00	93789.71	93587.93	2656752.87	28.33	0.60	56246.35	677972.32	7.23	21.10
51.00	93386.15	93179.63	2563164.93	27.45	0.58	54137.36	621725.98	6.66	20.79
52.00	92973.11	92736.98	2469985.30	26.57	0.58	53416.50	567588.61	6.10	20.46
53.00	92500.85	92251.91	2377248.33	25.70	0.56	51753.32	514172.11	5.56	20.14
54.00	92002.97	91724.53	2284996.42	24.84	0.56	50907.12	462418.79	5.03	19.81
55.00	91446.10	91158.08	2193271.88	23.98	0.53	48131.47	411511.67	4.50	19.48
56.00	90870.06	90559.55	2102113.80	23.13	0.54	48902.16	363380.21	4.00	19.13
57.00	90249.03	89902.43	2011554.25	22.29	0.52	47108.87	314478.05	3.48	18.80
58.00	89555.83	89182.06	1921651.82	21.46	0.52	46463.85	267369.18	2.99	18.47
59.00	88808.29	88396.52	1832469.77	20.63	0.48	42695.52	220905.33	2.49	18.15
60.00	87984.75	87537.96	1744073.25	19.82	0.46	40179.92	178209.81	2.03	17.80
61.00	87091.17	86587.14	1656535.29	19.02	0.40	35067.79	138029.88	1.58	17.44
62.00	86083.10	85552.74	1569948.15	18.24	0.39	33536.67	102962.09	1.20	17.04
63.00	85022.37	84463.33	1484395.42	17.46	0.33	28126.29	69425.42	0.82	16.64
64.00	83904.28	83287.17	1399932.09	16.68	0.29	24236.57	41299.13	0.49	16.19
65.00	82670.05	82031.58	1316644.93	15.93	0.21	17062.57	17062.57	0.21	15.72

1982

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98412.25	98390.24	5998288.19	60.95	0.30	29221.90	2702057.62	27.46	33.49
17.00	98368.22	98340.78	5899897.95	59.98	0.40	39532.99	2672835.72	27.17	32.81
18.00	98313.33	98284.53	5801557.17	59.01	0.51	50026.82	2633302.73	26.78	32.23
19.00	98255.72	98225.53	5703272.65	58.05	0.53	52059.53	2583275.90	26.29	31.75
20.00	98195.34	98163.11	5605047.12	57.08	0.44	43584.42	2531216.37	25.78	31.30
21.00	98130.89	98097.88	5506884.00	56.12	0.53	52089.98	2487631.95	25.35	30.77
22.00	98064.88	98029.38	5408786.12	55.16	0.67	66071.80	2435541.97	24.84	30.32
23.00	97993.88	97960.42	5310756.74	54.19	0.71	69649.86	2369470.17	24.18	30.02
24.00	97926.97	97893.06	5212796.32	53.23	0.70	68525.14	2299820.31	23.49	29.75
25.00	97859.16	97825.63	5114903.26	52.27	0.73	71314.89	2231295.17	22.80	29.47
26.00	97792.10	97756.14	5017077.63	51.30	0.71	69309.11	2159980.28	22.09	29.22
27.00	97720.19	97683.41	4919321.48	50.34	0.69	67108.51	2090671.18	21.39	28.95
28.00	97646.64	97609.90	4821638.07	49.38	0.70	68424.54	2023562.67	20.72	28.66
29.00	97573.17	97538.17	4724028.17	48.42	0.67	65057.96	1955138.13	20.04	28.38
30.00	97503.18	97465.71	4626489.99	47.45	0.69	66861.47	1890080.17	19.38	28.06
31.00	97428.24	97386.89	4529024.29	46.49	0.66	63885.80	1823218.70	18.71	27.77
32.00	97345.55	97305.03	4431637.39	45.52	0.66	64318.63	1759332.89	18.07	27.45
33.00	97264.52	97222.36	4334332.36	44.56	0.63	61444.53	1695014.27	17.43	27.14
34.00	97180.21	97131.84	4237110.00	43.60	0.64	62552.90	1633569.73	16.81	26.79
35.00	97083.46	97032.30	4139978.16	42.64	0.64	61615.51	1571016.83	16.18	26.46
36.00	96981.13	96928.81	4042945.86	41.69	0.62	60483.58	1509401.32	15.56	26.12
37.00	96876.48	96819.52	3946017.06	40.73	0.65	62642.23	1448917.75	14.96	25.78
38.00	96762.56	96700.06	3849197.53	39.78	0.64	61597.94	1386275.51	14.33	25.45
39.00	96637.56	96562.79	3752497.48	38.83	0.63	61027.68	1324677.58	13.71	25.12
40.00	96488.02	96412.30	3655934.69	37.89	0.63	60643.34	1263649.90	13.10	24.79
41.00	96336.58	96259.43	3559522.39	36.95	0.64	61798.55	1203006.56	12.49	24.46
42.00	96182.27	96084.48	3463262.96	36.01	0.62	59284.12	1141208.01	11.87	24.14
43.00	95986.69	95886.51	3367178.48	35.08	0.62	59449.64	1081923.88	11.27	23.81
44.00	95786.33	95679.21	3271291.97	34.15	0.63	60469.26	1022474.25	10.67	23.48
45.00	95572.08	95452.67	3175612.76	33.23	0.61	57939.77	962004.99	10.07	23.16
46.00	95333.26	95203.92	3080160.10	32.31	0.62	58836.02	904065.22	9.48	22.83
47.00	95074.58	94933.16	2984956.17	31.40	0.60	56580.16	845229.20	8.89	22.51
48.00	94791.74	94641.41	2890023.01	30.49	0.61	57636.62	788649.03	8.32	22.17
49.00	94491.08	94317.12	2795381.61	29.58	0.59	55741.42	731012.41	7.74	21.85
50.00	94143.16	93953.34	2701064.49	28.69	0.60	56278.05	675271.00	7.17	21.52
51.00	93763.53	93553.43	2607111.14	27.81	0.58	54260.99	618992.94	6.60	21.20
52.00	93343.33	93124.15	2513557.71	26.93	0.56	52242.65	564731.95	6.05	20.88
53.00	92904.98	92654.94	2420433.56	26.05	0.58	53925.18	512489.30	5.52	20.54
54.00	92404.90	92143.32	2327778.62	25.19	0.55	50402.39	458564.13	4.96	20.23
55.00	91881.73	91586.74	2235635.30	24.33	0.57	52021.27	408161.73	4.44	19.89
56.00	91291.75	90985.60	2144048.56	23.49	0.54	48677.29	356140.46	3.90	19.58
57.00	90679.44	90338.59	2053062.96	22.64	0.51	46434.03	307463.17	3.39	19.25
58.00	89997.73	89634.98	1962724.37	21.81	0.50	45265.67	261029.13	2.90	18.91
59.00	89272.24	88886.69	1873089.39	20.98	0.48	42487.84	215763.47	2.42	18.56
60.00	88501.15	88072.66	1784202.70	20.16	0.43	37518.95	173275.63	1.96	18.20
61.00	87644.17	87180.61	1696130.04	19.35	0.40	34785.06	135756.68	1.55	17.80
62.00	86717.05	86194.48	1608949.43	18.55	0.37	32236.73	100971.61	1.16	17.39
63.00	85671.91	85137.60	1522754.95	17.77	0.34	29117.06	68734.88	0.80	16.97
64.00	84603.30	84015.14	1437617.35	16.99	0.30	25540.60	39617.82	0.47	16.52
65.00	83426.98	82807.16	1353602.21	16.22	0.17	14077.22	14077.22	0.17	16.06

1983

Age	Number	Years	Years	Life ex-	Activity	Years in	Years in	Expected	Expected

	alive at age x	lived in the age interval x	lived at age x and beyond	pectancy	rate	labour force at age x	labour force at age x and beyond	period of be-longing to labour force	period outside the labour force
16.00	98417.88	98397.46	5981199.91	60.77	0.29	29027.25	2704455.74	27.48	33.29
17.00	98377.03	98349.68	5882802.46	59.80	0.38	37766.28	2675428.49	27.20	32.60
18.00	98322.33	98290.81	5784452.77	58.83	0.44	43739.41	2637662.21	26.83	32.00
19.00	98259.29	98222.87	5686161.96	57.87	0.52	51075.89	2593922.80	26.40	31.47
20.00	98186.44	98154.81	5587939.09	56.91	0.39	38084.07	2542846.91	25.90	31.01
21.00	98123.18	98087.97	5489784.28	55.95	0.57	56106.32	2504762.85	25.53	30.42
22.00	98052.77	98012.40	5391696.31	54.99	0.67	65570.29	2448656.52	24.97	30.01
23.00	97972.03	97935.18	5293683.91	54.03	0.72	70219.52	2383086.23	24.32	29.71
24.00	97898.32	97860.77	5195748.74	53.07	0.73	71046.92	2312866.71	23.63	29.45
25.00	97823.22	97786.08	5097887.96	52.11	0.72	70308.19	2241819.79	22.92	29.20
26.00	97748.95	97711.01	5000101.88	51.15	0.73	71133.62	2171511.59	22.22	28.94
27.00	97673.08	97634.62	4902390.87	50.19	0.71	69027.68	2100377.98	21.50	28.69
28.00	97596.17	97557.49	4804756.24	49.23	0.70	68680.47	2031350.30	20.81	28.42
29.00	97518.82	97479.49	4707198.75	48.27	0.71	68820.52	1962669.82	20.13	28.14
30.00	97440.16	97401.36	4609719.26	47.31	0.70	67791.35	1893849.30	19.44	27.87
31.00	97362.56	97317.73	4512317.90	46.35	0.68	66078.74	1826057.96	18.76	27.59
32.00	97272.91	97230.95	4415000.17	45.39	0.68	65922.59	1759979.22	18.09	27.29
33.00	97188.99	97144.69	4317769.22	44.43	0.68	65961.24	1694056.63	17.43	27.00
34.00	97100.38	97051.11	4220624.53	43.47	0.65	63374.37	1628095.39	16.77	26.70
35.00	97001.83	96950.67	4123573.42	42.51	0.66	63599.64	1564721.02	16.13	26.38
36.00	96899.51	96846.72	4026622.75	41.55	0.65	63047.21	1501121.38	15.49	26.06
37.00	96793.93	96731.94	3929776.03	40.60	0.63	61231.32	1438074.16	14.86	25.74
38.00	96669.95	96603.32	3833044.09	39.65	0.62	60377.08	1376842.84	14.24	25.41
39.00	96536.69	96465.39	3736440.77	38.70	0.62	59808.54	1316465.76	13.64	25.07
40.00	96394.08	96314.30	3639975.38	37.76	0.63	61063.27	1256657.22	13.04	24.72
41.00	96234.52	96157.00	3543661.08	36.82	0.63	60675.07	1195593.96	12.42	24.40
42.00	96079.48	95984.88	3447504.08	35.88	0.63	60662.44	1134918.89	11.81	24.07
43.00	95890.28	95794.15	3351519.20	34.95	0.63	60541.90	1074256.45	11.20	23.75
44.00	95698.02	95596.44	3255725.05	34.02	0.61	58600.62	1013714.54	10.59	23.43
45.00	95494.85	95366.67	3160128.61	33.09	0.62	59413.43	955113.93	10.00	23.09
46.00	95238.48	95108.41	3064761.94	32.18	0.61	58396.56	895700.49	9.40	22.78
47.00	94978.34	94836.83	2969653.53	31.27	0.59	56333.08	837303.93	8.82	22.45
48.00	94695.31	94534.48	2874816.70	30.36	0.60	57193.36	780970.85	8.25	22.11
49.00	94373.64	94209.86	2780282.23	29.46	0.59	56054.87	723777.49	7.67	21.79
50.00	94046.08	93860.86	2686072.37	28.56	0.59	55471.77	667722.63	7.10	21.46
51.00	93675.63	93470.35	2592211.51	27.67	0.57	53558.51	612250.86	6.54	21.14
52.00	93265.07	93047.55	2498741.16	26.79	0.57	52851.01	558692.35	5.99	20.80
53.00	92830.02	92594.13	2405693.61	25.92	0.57	53056.44	505841.34	5.45	20.47
54.00	92358.24	92091.30	2313099.48	25.04	0.56	51386.94	452784.91	4.90	20.14
55.00	91824.36	91538.10	2221008.18	24.19	0.53	48423.65	401397.96	4.37	19.82
56.00	91251.83	90942.12	2129470.09	23.34	0.54	49381.57	352974.31	3.87	19.47
57.00	90632.41	90308.80	2038527.97	22.49	0.52	46689.65	303592.74	3.35	19.14
58.00	89985.20	89617.69	1948219.16	21.65	0.48	42658.02	256903.09	2.85	18.80
59.00	89250.17	88836.76	1858601.48	20.82	0.48	42552.81	214245.07	2.40	18.42
60.00	88423.36	87981.72	1769764.71	20.01	0.44	38536.00	171692.26	1.94	18.07
61.00	87540.09	87071.96	1681782.99	19.21	0.37	32564.91	133156.26	1.52	17.69
62.00	86603.83	86098.40	1594711.03	18.41	0.39	33320.08	100591.35	1.16	17.25
63.00	85592.96	85036.85	1508612.63	17.63	0.32	27381.86	67271.27	0.79	16.84
64.00	84480.73	83891.57	1423575.78	16.85	0.31	25670.82	39889.41	0.47	16.38
65.00	83302.40	82666.20	1339684.22	16.08	0.17	14218.59	14218.59	0.17	15.91

1984

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life ex-pectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of be-longing to labour force	Expected period outside the labour force
16.00	98538.17	98515.89	6012366.28	61.02	0.27	26796.32	2695346.47	27.35	33.66
17.00	98493.61	98465.99	5913850.39	60.04	0.38	37614.01	2668550.15	27.09	32.95
18.00	98438.36	98406.85	5815384.41	59.08	0.46	44775.12	2630936.14	26.73	32.35
19.00	98375.35	98337.62	5716977.55	58.11	0.50	49562.16	2586161.02	26.29	31.83
20.00	98299.88	98264.23	5618639.94	57.16	0.40	39305.69	2536598.86	25.80	31.35
21.00	98228.57	98190.03	5520375.71	56.20	0.60	58914.02	2497293.17	25.42	30.78
22.00	98151.48	98115.78	5422185.68	55.24	0.66	65246.99	2438379.16	24.84	30.40
23.00	98080.07	98043.71	5324069.91	54.28	0.72	70395.38	2373132.17	24.20	30.09
24.00	98007.36	97970.15	5226026.20	53.32	0.71	69950.69	2302736.78	23.50	29.83
25.00	97932.95	97897.93	5128056.05	52.36	0.73	71661.28	2232786.09	22.80	29.56
26.00	97862.91	97826.84	5030158.12	51.40	0.75	73272.30	2161124.81	22.08	29.32
27.00	97790.77	97754.32	4932331.28	50.44	0.73	71165.15	2087852.51	21.35	29.09
28.00	97717.87	97684.11	4834576.96	49.47	0.71	68964.98	2016687.36	20.64	28.84
29.00	97650.35	97611.31	4736892.84	48.51	0.70	68425.53	1947722.38	19.95	28.56
30.00	97572.27	97533.18	4639281.53	47.55	0.72	70614.02	1879296.85	19.26	28.29
31.00	97494.09	97453.80	4541748.35	46.58	0.67	65099.14	1808682.82	18.55	28.03
32.00	97413.52	97369.42	4444294.55	45.62	0.67	65626.99	1743583.68	17.90	27.72
33.00	97325.31	97280.92	4346925.13	44.66	0.68	65664.62	1677956.70	17.24	27.42
34.00	97236.53	97188.43	4249644.21	43.70	0.66	63755.61	1612292.08	16.58	27.12
35.00	97140.33	97086.67	4152455.79	42.75	0.65	63397.60	1548536.47	15.94	26.81
36.00	97033.02	96975.97	4055369.11	41.79	0.64	62549.50	1485138.87	15.31	26.49
37.00	96918.92	96858.02	3958393.14	40.84	0.64	61892.28	1422589.37	14.68	26.16
38.00	96797.13	96732.81	3861535.12	39.89	0.64	62295.93	1360697.09	14.06	25.84

39.00	96668.50	96597.54	3764802.31	38.95	0.65	62691.81	1298401.16	13.43	25.51
40.00	96526.59	96449.89	3668204.76	38.00	0.65	62885.33	1235709.36	12.80	25.20
41.00	96373.20	96295.57	3571754.87	37.06	0.64	61243.98	1172824.03	12.17	24.89
42.00	96217.94	96125.84	3475459.30	36.12	0.62	59694.15	1111580.04	11.55	24.57
43.00	96033.73	95934.65	3379333.46	35.19	0.62	59863.22	1051885.90	10.95	24.24
44.00	95835.57	95719.47	3283398.81	34.26	0.59	56761.65	992022.68	10.35	23.91
45.00	95603.37	95484.94	3187679.34	33.34	0.58	55381.27	935261.03	9.78	23.56
46.00	95366.51	95233.18	3092194.40	32.42	0.62	58854.11	879879.76	9.23	23.20
47.00	95099.85	94956.14	2996961.22	31.51	0.60	57448.47	821025.66	8.63	22.88
48.00	94812.44	94658.40	2902005.07	30.61	0.60	56700.38	763577.19	8.05	22.55
49.00	94504.37	94335.38	2807346.67	29.71	0.58	54903.19	706876.81	7.48	22.23
50.00	94166.39	93977.22	2713011.29	28.81	0.59	55352.58	651973.62	6.92	21.89
51.00	93788.05	93592.01	2619034.07	27.93	0.58	53909.00	596621.03	6.36	21.56
52.00	93395.97	93182.19	2525442.06	27.04	0.56	51809.30	542712.03	5.81	21.23
53.00	92968.41	92732.57	2432259.87	26.16	0.56	51466.58	490902.74	5.28	20.88
54.00	92496.73	92247.00	2339527.30	25.29	0.55	50551.36	439436.16	4.75	20.54
55.00	91997.27	91714.43	2247280.29	24.43	0.52	47416.36	388884.80	4.23	20.20
56.00	91431.58	91127.03	2155565.87	23.58	0.52	47386.06	341468.44	3.73	19.84
57.00	90822.48	90480.00	2064438.84	22.73	0.52	47321.04	294082.39	3.24	19.49
58.00	90137.52	89779.54	1973958.84	21.90	0.47	42375.94	246761.35	2.74	19.16
59.00	89421.56	89019.64	1884179.30	21.07	0.46	41216.09	204385.41	2.29	18.79
60.00	88617.73	88173.26	1795159.66	20.26	0.41	36151.04	163169.31	1.84	18.42
61.00	87728.80	87257.84	1706986.39	19.46	0.37	32634.43	127018.27	1.45	18.01
62.00	86786.87	86294.29	1619728.56	18.66	0.34	29253.76	94383.84	1.09	17.58
63.00	85801.71	85253.50	1533434.27	17.87	0.33	27877.90	65130.08	0.76	17.11
64.00	84705.30	84103.86	1448180.76	17.10	0.30	25567.57	37252.18	0.44	16.66
65.00	83502.42	82869.57	1364076.90	16.34	0.14	11684.61	11684.61	0.14	16.20

1985

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98633.47	98610.99	6008298.83	60.92	0.22	22088.86	2691431.87	27.29	33.63
17.00	98588.52	98562.88	5909687.84	59.94	0.36	35876.89	2669343.01	27.08	32.87
18.00	98537.23	98507.71	5811124.96	58.97	0.42	41865.78	2633466.12	26.73	32.25
19.00	98478.18	98444.87	5712617.26	58.01	0.48	46958.20	2591600.34	26.32	31.69
20.00	98411.56	98377.13	5614172.39	57.05	0.41	40433.00	2544642.14	25.86	31.19
21.00	98342.69	98304.36	5515795.26	56.09	0.60	58786.01	2504209.14	25.46	30.62
22.00	98266.03	98226.72	5417490.90	55.13	0.66	65320.77	2445423.13	24.89	30.25
23.00	98187.42	98149.76	5319264.17	54.17	0.69	67821.49	2380102.36	24.24	29.93
24.00	98112.11	98069.81	5221114.41	53.22	0.72	70708.33	2312280.88	23.57	29.65
25.00	98027.51	97987.19	5123044.61	52.26	0.73	71922.59	2241572.55	22.87	29.39
26.00	97946.87	97907.02	5025057.42	51.30	0.73	71276.31	2169649.95	22.15	29.15
27.00	97867.17	97830.42	4927150.40	50.35	0.75	73274.98	2098373.64	21.44	28.90
28.00	97793.67	97756.79	4829319.98	49.38	0.72	70580.41	2025098.66	20.71	28.67
29.00	97719.92	97679.65	4731563.19	48.42	0.70	68180.40	1954518.25	20.00	28.42
30.00	97639.39	97598.01	4633883.53	47.46	0.71	69099.39	1886337.85	19.32	28.14
31.00	97556.63	97517.03	4536285.52	46.50	0.73	71382.46	1817238.46	18.63	27.87
32.00	97477.42	97434.24	4438768.50	45.54	0.67	65280.94	1745856.00	17.91	27.63
33.00	97391.06	97346.62	4341334.26	44.58	0.67	65514.27	1680575.06	17.26	27.32
34.00	97302.18	97251.92	4243987.64	43.62	0.67	64964.28	1615060.79	16.60	27.02
35.00	97201.66	97148.48	4146735.72	42.66	0.66	64312.30	1550096.50	15.95	26.71
36.00	97095.31	97039.21	4049587.24	41.71	0.67	65210.35	1485784.21	15.30	26.41
37.00	96983.11	96923.47	3952548.03	40.76	0.64	62031.02	1420573.86	14.65	26.11
38.00	96863.83	96800.80	3855624.56	39.80	0.64	61662.11	1358542.84	14.03	25.78
39.00	96737.76	96664.98	3758823.76	38.86	0.64	61768.92	1296880.73	13.41	25.45
40.00	96592.19	96514.04	3662158.79	37.91	0.63	60900.36	1235111.81	12.79	25.13
41.00	96435.89	96354.56	3565644.75	36.97	0.63	61088.79	1174211.46	12.18	24.80
42.00	96273.24	96173.19	3469290.19	36.04	0.63	60589.11	1113122.66	11.56	24.47
43.00	96073.14	95975.92	3373117.00	35.11	0.62	59409.10	1052533.55	10.96	24.15
44.00	95878.71	95778.93	3277141.07	34.18	0.64	61202.74	993124.45	10.36	23.82
45.00	95679.16	95556.11	3181362.14	33.25	0.61	58098.11	931921.72	9.74	23.51
46.00	95433.05	95301.39	3085806.03	32.33	0.60	57371.44	873823.60	9.16	23.18
47.00	95169.74	95029.22	2990504.64	31.42	0.62	59013.15	816452.16	8.58	22.84
48.00	94888.71	94732.57	2895475.41	30.51	0.60	56839.54	757439.02	7.98	22.53
49.00	94576.42	94402.76	2800742.85	29.61	0.60	56264.05	700599.48	7.41	22.21
50.00	94229.10	94044.79	2706340.08	28.72	0.56	52476.99	644335.43	6.84	21.88
51.00	93860.48	93664.60	2612295.29	27.83	0.56	52733.17	591858.44	6.31	21.53
52.00	93468.73	93246.68	2518630.69	26.95	0.58	54083.07	539125.26	5.77	21.18
53.00	93024.63	92780.50	2425384.01	26.07	0.55	51400.40	485042.19	5.21	20.86
54.00	92536.37	92272.50	2332603.52	25.21	0.55	50380.78	433641.80	4.69	20.52
55.00	92008.63	91728.38	2240331.02	24.35	0.53	48707.77	383261.01	4.17	20.18
56.00	91448.13	91142.17	2148602.64	23.50	0.53	48031.92	334553.25	3.66	19.84
57.00	90836.21	90497.98	2057460.48	22.65	0.51	45882.48	286521.32	3.15	19.50
58.00	90159.76	89798.21	1966962.50	21.82	0.49	44450.12	240638.85	2.67	19.15

59.00	89436.67	89049.69	1877164.28	20.99	0.45	40072.36	196188.73	2.19	18.80
60.00	88662.71	88226.48	1788114.59	20.17	0.41	36084.63	156116.37	1.76	18.41
61.00	87790.25	87329.96	1699888.11	19.36	0.36	31788.11	120031.74	1.37	18.00
62.00	86869.68	86370.13	1612558.15	18.56	0.32	27206.59	88243.63	1.02	17.55
63.00	85870.58	85328.18	1526188.02	17.77	0.30	25939.77	61037.04	0.71	17.06
64.00	84785.78	84201.98	1440859.84	16.99	0.27	22818.74	35097.28	0.41	16.58
65.00	83618.18	82963.10	1356657.85	16.22	0.15	12278.54	12278.54	0.15	16.08

1986

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98635.21	98610.30	6031725.87	61.15	0.20	19722.06	2709391.92	27.47	33.68
17.00	98585.39	98557.51	5933115.56	60.18	0.33	32129.75	2689669.86	27.28	32.90
18.00	98529.63	98495.90	5834558.05	59.22	0.44	43535.19	2657540.11	26.97	32.24
19.00	98462.17	98425.02	5736062.15	58.26	0.48	47244.01	2614004.93	26.55	31.71
20.00	98387.87	98353.38	5637637.13	57.30	0.45	44062.31	2566760.92	26.09	31.21
21.00	98318.89	98277.70	5539283.75	56.34	0.60	58770.07	2522698.60	25.66	30.68
22.00	98236.52	98196.60	5441006.05	55.39	0.66	65104.34	2463928.54	25.08	30.31
23.00	98156.67	98116.81	5342809.45	54.43	0.73	71821.50	2398824.19	24.44	29.99
24.00	98076.94	98034.89	5244692.64	53.48	0.73	71663.50	2327002.69	23.73	29.75
25.00	97992.83	97952.12	5146657.76	52.52	0.75	73464.09	2255339.19	23.02	29.51
26.00	97911.41	97869.32	5048705.63	51.56	0.74	72716.91	2181875.09	22.28	29.28
27.00	97827.23	97787.74	4950836.31	50.61	0.75	73536.38	2109158.19	21.56	29.05
28.00	97748.25	97707.99	4853048.57	49.65	0.74	72694.74	2035621.81	20.83	28.82
29.00	97667.72	97627.30	4755340.58	48.69	0.73	71170.30	1962927.07	20.10	28.59
30.00	97586.88	97546.60	4657713.28	47.73	0.72	70233.55	1891756.76	19.39	28.34
31.00	97506.31	97462.45	4560166.69	46.77	0.71	69588.19	1821523.21	18.68	28.09
32.00	97418.59	97376.11	4462704.24	45.81	0.71	68942.28	1751935.02	17.98	27.83
33.00	97333.62	97286.06	4365328.13	44.85	0.71	68683.96	1682992.74	17.29	27.56
34.00	97238.50	97191.32	4268042.07	43.89	0.70	67645.16	1614308.78	16.60	27.29
35.00	97144.15	97086.54	4170850.75	42.93	0.68	66213.02	1546663.63	15.92	27.01
36.00	97028.94	96970.16	4073764.21	41.99	0.66	63806.36	1480450.60	15.26	26.73
37.00	96911.38	96852.15	3976794.05	41.04	0.68	65375.20	1416644.24	14.62	26.42
38.00	96792.91	96725.95	3879941.90	40.08	0.64	61904.61	1351269.04	13.96	26.12
39.00	96658.98	96591.33	3783215.96	39.14	0.64	61335.49	1289364.43	13.34	25.80
40.00	96523.68	96451.22	3686624.63	38.19	0.65	62789.75	1228028.94	12.72	25.47
41.00	96378.77	96296.93	3590173.41	37.25	0.62	59992.99	1165239.19	12.09	25.16
42.00	96215.09	96125.93	3493876.48	36.31	0.62	59694.20	1105246.21	11.49	24.83
43.00	96036.78	95936.06	3397750.54	35.38	0.63	60535.65	1045552.00	10.89	24.49
44.00	95835.33	95737.85	3301814.49	34.45	0.60	57538.45	985016.35	10.28	24.17
45.00	95640.37	95523.47	3206076.64	33.52	0.63	60084.26	927477.91	9.70	23.82
46.00	95406.57	95278.59	3110553.17	32.60	0.61	58024.66	867393.64	9.09	23.51
47.00	95150.61	95010.44	3015274.58	31.69	0.60	57291.30	809368.98	8.51	23.18
48.00	94870.27	94713.17	2920264.14	30.78	0.61	57585.61	752077.69	7.93	22.85
49.00	94556.07	94390.29	2825550.97	29.88	0.59	55690.27	694492.08	7.34	22.54
50.00	94224.50	94039.38	2731160.68	28.99	0.58	54166.68	638801.81	6.78	22.21
51.00	93854.26	93655.49	2637121.30	28.10	0.59	55444.05	584635.13	6.23	21.87
52.00	93456.71	93249.04	2543465.81	27.22	0.57	53338.45	529191.08	5.66	21.55
53.00	93041.37	92810.49	2450216.77	26.33	0.55	51417.01	475852.63	5.11	21.22
54.00	92579.61	92327.01	2357406.29	25.46	0.56	51241.49	424435.62	4.58	20.88
55.00	92074.41	91799.41	2265079.27	24.60	0.53	48561.89	373194.12	4.05	20.55
56.00	91524.42	91233.27	2173279.86	23.75	0.51	46711.43	324632.23	3.55	20.20
57.00	90942.11	90617.39	2082046.59	22.89	0.48	43586.96	277920.80	3.06	19.84
58.00	90292.66	89944.47	1991429.21	22.06	0.48	43533.12	234333.84	2.60	19.46
59.00	89596.29	89200.06	1901484.74	21.22	0.45	39872.43	190800.72	2.13	19.09
60.00	88803.83	88388.80	1812284.68	20.41	0.38	34029.69	150928.29	1.70	18.71
61.00	87973.76	87517.04	1723895.88	19.60	0.36	31681.17	116898.60	1.33	18.27
62.00	87060.32	86561.75	1636378.84	18.80	0.33	28738.50	85217.44	0.98	17.82
63.00	86063.18	85538.74	1549817.09	18.01	0.27	23437.61	56478.93	0.66	17.35
64.00	85014.30	84452.61	1464278.35	17.22	0.27	22464.39	33041.32	0.39	16.84
65.00	83890.92	83282.88	1379825.74	16.45	0.13	10576.93	10576.93	0.13	16.32

1987

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98703.57	98677.99	6048690.74	61.28	0.24	23781.40	2797064.80	28.34	32.94
17.00	98652.41	98623.40	5950012.74	60.31	0.37	36687.90	2773283.41	28.11	32.20
18.00	98594.39	98550.58	5851389.35	59.35	0.46	45136.16	2736595.50	27.76	31.59
19.00	98506.77	98463.62	5752838.77	58.40	0.48	46967.15	2691459.34	27.32	31.08
20.00	98420.48	98380.50	5654375.14	57.45	0.52	51354.62	2644492.19	26.87	30.58
21.00	98340.51	98299.33	5555994.65	56.50	0.66	65172.45	2593137.57	26.37	30.13

22.00	98258.14	98213.05	5457695.32	55.54	0.71	69534.84	2527965.11	25.73	29.82
23.00	98167.95	98120.58	5359482.27	54.60	0.70	69175.01	2458430.28	25.04	29.55
24.00	98073.21	98026.02	5261361.69	53.65	0.75	73911.62	2389255.27	24.36	29.29
25.00	97978.83	97934.91	5163335.67	52.70	0.77	75214.01	2315343.65	23.63	29.07
26.00	97890.99	97844.50	5065400.76	51.75	0.77	75340.26	2240129.64	22.88	28.86
27.00	97798.01	97752.92	4967556.26	50.79	0.78	76247.27	2164789.37	22.14	28.66
28.00	97707.82	97667.19	4869803.35	49.84	0.78	75692.07	2088542.10	21.38	28.47
29.00	97626.55	97582.68	4772136.16	48.88	0.75	73577.34	2012850.03	20.62	28.26
30.00	97538.82	97492.02	4674553.48	47.93	0.76	74288.92	1939272.69	19.88	28.04
31.00	97445.22	97399.76	4577061.46	46.97	0.75	73342.02	1864983.77	19.14	27.83
32.00	97354.29	97304.72	4479661.70	46.01	0.72	70448.62	1791641.75	18.40	27.61
33.00	97255.15	97206.51	4382356.98	45.06	0.73	70669.13	1721193.14	17.70	27.36
34.00	97157.86	97107.58	4285150.47	44.11	0.72	70402.99	1650524.00	16.99	27.12
35.00	97057.29	97004.63	4188042.90	43.15	0.72	69843.34	1580121.01	16.28	26.87
36.00	96951.98	96892.24	4091038.27	42.20	0.70	67533.89	1510277.68	15.58	26.62
37.00	96832.49	96774.02	3994146.03	41.25	0.68	66096.66	1442743.79	14.90	26.35
38.00	96715.56	96652.05	3897372.01	40.30	0.67	64950.18	1376647.13	14.23	26.06
39.00	96588.55	96509.82	3800719.95	39.35	0.65	62538.37	1311696.95	13.58	25.77
40.00	96431.09	96357.51	3704210.13	38.41	0.66	63403.24	1249158.58	12.95	25.46
41.00	96283.92	96197.66	3607852.62	37.47	0.68	65029.62	1185755.34	12.32	25.16
42.00	96111.40	96022.29	3511654.97	36.54	0.66	63566.76	1120725.73	11.66	24.88
43.00	95933.19	95834.92	3415632.67	35.60	0.66	62963.54	1057158.97	11.02	24.58
44.00	95736.64	95627.72	3319797.76	34.68	0.63	60149.84	994195.43	10.38	24.29
45.00	95518.80	95406.94	3224170.04	33.75	0.64	60869.63	934045.60	9.78	23.98
46.00	95295.07	95174.16	3128763.10	32.83	0.63	60150.07	873175.97	9.16	23.67
47.00	95053.25	94908.63	3033588.94	31.91	0.66	62165.16	813025.90	8.55	23.36
48.00	94764.02	94612.21	2938680.31	31.01	0.63	59416.47	750860.74	7.92	23.09
49.00	94460.41	94293.55	2844068.09	30.11	0.62	58462.00	691444.28	7.32	22.79
50.00	94126.70	93942.39	2749774.54	29.21	0.59	55332.07	632982.27	6.72	22.49
51.00	93758.09	93564.61	2655832.15	28.33	0.58	54454.60	577650.20	6.16	22.17
52.00	93371.14	93162.99	2562267.54	27.44	0.57	53382.40	523195.60	5.60	21.84
53.00	92954.85	92721.91	2469104.54	26.56	0.59	54705.92	469813.20	5.05	21.51
54.00	92488.96	92242.11	2376382.64	25.69	0.54	49995.22	415107.28	4.49	21.21
55.00	91995.26	91738.41	2284140.53	24.83	0.54	49447.00	365112.06	3.97	20.86
56.00	91481.56	91190.78	2192402.12	23.97	0.50	45777.77	315665.05	3.45	20.51
57.00	90899.99	90583.60	2101211.34	23.12	0.48	43480.13	269887.28	2.97	20.15
58.00	90267.21	89924.88	2010627.74	22.27	0.45	40466.20	226407.15	2.51	19.77
59.00	89582.55	89202.31	1920702.86	21.44	0.45	39962.63	185940.96	2.08	19.36
60.00	88822.06	88409.90	1831500.55	20.62	0.37	32358.02	145978.32	1.64	18.98
61.00	87997.74	87559.48	1743090.65	19.81	0.35	30383.14	113620.30	1.29	18.52
62.00	87121.22	86651.05	1655531.17	19.00	0.29	25302.11	83237.16	0.96	18.05
63.00	86180.87	85655.24	1568880.12	18.20	0.30	25353.95	57935.06	0.67	17.53
64.00	85129.61	84573.81	1483224.88	17.42	0.26	21904.62	32581.10	0.38	17.04
65.00	84018.01	83410.05	1398651.07	16.65	0.13	10676.49	10676.49	0.13	16.52

1988

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98772.24	98749.18	6048877.97	61.24	0.23	22613.56	2791828.37	28.27	32.98
17.00	98726.11	98692.20	5950128.79	60.27	0.36	35726.58	2769214.81	28.05	32.22
18.00	98658.28	98621.83	5851436.59	59.31	0.42	41125.30	2733488.23	27.71	31.60
19.00	98585.39	98545.25	5752814.76	58.35	0.39	38826.83	2692362.93	27.31	31.04
20.00	98505.12	98459.01	5654269.51	57.40	0.57	56515.47	2653536.10	26.94	30.46
21.00	98412.90	98367.41	5555810.50	56.45	0.66	65020.86	2597020.63	26.39	30.07
22.00	98321.93	98276.77	5457443.09	55.51	0.70	68990.29	2531999.77	25.75	29.75
23.00	98231.60	98183.52	5359166.32	54.56	0.74	72557.62	2463009.48	25.07	29.48
24.00	98135.44	98087.90	5260982.80	53.61	0.75	73762.10	2390451.86	24.36	29.25
25.00	98040.37	97992.06	5162894.89	52.66	0.78	75943.85	2316689.75	23.63	29.03
26.00	97943.76	97893.07	5064902.83	51.71	0.77	75279.77	2240745.90	22.88	28.83
27.00	97842.38	97791.91	4967009.76	50.77	0.76	74713.02	2165466.14	22.13	28.63
28.00	97741.45	97688.98	4869217.85	49.82	0.75	73657.49	2090753.11	21.39	28.43
29.00	97636.50	97590.27	4771528.87	48.87	0.77	75339.69	2017095.62	20.66	28.21
30.00	97544.05	97491.80	4673938.60	47.92	0.75	73313.84	1941755.93	19.91	28.01
31.00	97439.56	97391.91	4576446.79	46.97	0.75	73336.11	1868442.10	19.18	27.79
32.00	97344.26	97292.57	4479054.88	46.01	0.73	70926.28	1795105.99	18.44	27.57
33.00	97240.87	97190.04	4381762.32	45.06	0.72	69976.83	1724179.71	17.73	27.33
34.00	97139.21	97087.67	4284572.28	44.11	0.74	71456.52	1654202.88	17.03	27.08
35.00	97036.13	96981.65	4187484.61	43.15	0.71	69341.88	1582746.35	16.31	26.84
36.00	96927.17	96866.06	4090502.96	42.20	0.71	68581.17	1513404.47	15.61	26.59
37.00	96804.95	96737.84	3993636.89	41.25	0.70	67716.49	1444823.30	14.93	26.33
38.00	96670.73	96600.32	3896899.06	40.31	0.68	65205.22	1377106.81	14.25	26.07
39.00	96529.91	96459.64	3800298.74	39.37	0.68	65399.64	1311901.60	13.59	25.78
40.00	96389.37	96309.07	3703839.09	38.43	0.68	65393.86	1246501.96	12.93	25.49
41.00	96228.77	96147.37	3607530.02	37.49	0.68	64899.47	1181108.10	12.27	25.22
42.00	96065.96	95977.49	3511382.65	36.55	0.65	62673.30	1116208.63	11.62	24.93
43.00	95889.02	95793.91	3415405.16	35.62	0.66	62840.80	1053535.32	10.99	24.63
44.00	95698.80	95589.27	3319611.26	34.69	0.65	61941.85	990694.52	10.35	24.34
45.00	95479.75	95361.92	3224021.98	33.77	0.65	62366.69	928752.67	9.73	24.04
46.00	95244.08	95115.93	3128660.06	32.85	0.65	61730.24	866385.98	9.10	23.75
47.00	94987.78	94853.12	3033544.14	31.94	0.64	60421.44	804655.74	8.47	23.47
48.00	94718.46	94559.03	2938691.02	31.03	0.61	58059.25	744234.30	7.86	23.17
49.00	94399.60	94234.29	2844131.98	30.13	0.60	56540.57	686175.06	7.27	22.86
50.00	94068.97	93882.64	2749897.70	29.23	0.58	54451.93	629634.49	6.69	22.54

51.00	93696.31	93499.01	2656015.06	28.35	0.58	54322.92	575182.56	6.14	22.21
52.00	93301.71	93084.24	2562516.05	27.46	0.57	53337.27	520859.63	5.58	21.88
53.00	92866.78	92633.78	2469431.80	26.59	0.56	52245.45	467522.36	5.03	21.56
54.00	92400.79	92161.25	2376798.02	25.72	0.57	52347.59	415276.90	4.49	21.23
55.00	91921.71	91647.04	2284636.77	24.85	0.55	50130.93	362929.32	3.95	20.91
56.00	91372.37	91080.25	2192989.73	24.00	0.51	46542.01	312798.39	3.42	20.58
57.00	90788.12	90472.54	2101909.49	23.15	0.47	42160.20	266256.38	2.93	20.22
58.00	90156.96	89815.96	2011436.95	22.31	0.47	42662.58	224096.18	2.49	19.82
59.00	89474.96	89097.19	1921620.99	21.48	0.43	38400.89	181433.59	2.03	19.45
60.00	88719.42	88308.53	1832523.80	20.66	0.37	32939.08	143032.71	1.61	19.04
61.00	87897.65	87455.97	1744215.26	19.84	0.33	28510.65	110093.62	1.25	18.59
62.00	87014.30	86557.42	1656759.29	19.04	0.29	25361.32	81582.98	0.94	18.10
63.00	86100.54	85582.67	1570201.87	18.24	0.29	25075.72	56221.65	0.65	17.58
64.00	85064.79	84512.02	1484619.20	17.45	0.26	22226.66	31145.93	0.37	17.09
65.00	83959.25	83357.65	1400107.18	16.68	0.11	8919.27	8919.27	0.11	16.57

1989

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98787.25	98760.54	6051112.23	61.25	0.20	19653.35	2809566.33	28.44	32.81
17.00	98733.83	98700.60	5952351.69	60.29	0.34	33656.90	2789912.99	28.26	32.03
18.00	98667.37	98626.12	5853651.09	59.33	0.40	39351.82	2756256.08	27.93	31.39
19.00	98584.87	98544.94	5755024.97	58.38	0.36	35180.54	2716904.26	27.56	30.82
20.00	98505.00	98458.29	5656480.03	57.42	0.56	55432.02	2681723.72	27.22	30.20
21.00	98411.58	98362.23	5558021.74	56.48	0.65	64132.18	2626291.70	26.69	29.79
22.00	98312.88	98263.18	5459659.51	55.53	0.67	66131.12	2562159.52	26.06	29.47
23.00	98213.48	98159.86	5361396.33	54.59	0.74	72441.98	2496028.40	25.41	29.17
24.00	98106.24	98057.68	5263236.46	53.65	0.75	73641.32	2423586.42	24.70	28.94
25.00	98009.12	97949.70	5165178.78	52.70	0.78	76694.62	2349945.10	23.98	28.72
26.00	97890.29	97836.79	5067229.08	51.76	0.78	76704.04	2273250.49	23.22	28.54
27.00	97783.29	97728.51	4969392.29	50.82	0.79	77596.44	2196546.44	22.46	28.36
28.00	97673.73	97615.91	4871663.78	49.88	0.77	74871.40	2118950.01	21.69	28.18
29.00	97558.09	97500.24	4774047.87	48.94	0.77	75465.19	2044078.60	20.95	27.98
30.00	97442.39	97389.94	4676547.62	47.99	0.76	73724.18	1968613.41	20.20	27.79
31.00	97337.48	97284.77	4579157.69	47.04	0.76	73936.43	1894889.23	19.47	27.58
32.00	97232.07	97177.88	4481872.91	46.09	0.74	71911.63	1820952.81	18.73	27.37
33.00	97123.69	97060.11	4384695.03	45.15	0.75	72892.14	1749041.17	18.01	27.14
34.00	96996.53	96938.98	4287634.92	44.20	0.74	71734.84	1676149.03	17.28	26.92
35.00	96881.43	96820.60	4190695.94	43.26	0.72	69420.37	1604414.18	16.56	26.70
36.00	96759.78	96697.66	4093875.34	42.31	0.73	70202.50	1534993.81	15.86	26.45
37.00	96635.53	96573.05	3997177.68	41.36	0.71	68856.58	1464791.31	15.16	26.21
38.00	96510.56	96441.67	3900604.63	40.42	0.70	67702.06	1395934.73	14.46	25.95
39.00	96372.79	96300.16	3804162.96	39.47	0.71	68084.21	1328232.67	13.78	25.69
40.00	96227.53	96150.11	3707862.80	38.53	0.71	67881.97	1260148.46	13.10	25.44
41.00	96072.69	95986.58	3611712.70	37.59	0.69	66422.71	1192266.49	12.41	25.18
42.00	95900.46	95812.16	3515726.12	36.66	0.68	65248.08	1125843.78	11.74	24.92
43.00	95723.86	95618.16	3419913.96	35.73	0.65	62343.04	1060595.69	11.08	24.65
44.00	95512.45	95405.68	3324295.80	34.80	0.66	62681.53	998252.66	10.45	24.35
45.00	95298.91	95181.30	3228890.12	33.88	0.65	61487.12	935571.13	9.82	24.06
46.00	95063.69	94935.35	3133708.82	32.96	0.64	60663.69	874084.01	9.19	23.77
47.00	94807.01	94671.70	3038773.47	32.05	0.65	61631.28	813420.31	8.58	23.47
48.00	94536.38	94389.41	2944101.77	31.14	0.63	59087.77	751789.04	7.95	23.19
49.00	94242.43	94075.61	2849712.36	30.24	0.60	56821.67	692701.27	7.35	22.89
50.00	93908.78	93733.33	2755636.75	29.34	0.60	55865.06	635879.60	6.77	22.57
51.00	93557.88	93364.96	2661903.43	28.45	0.60	55645.52	580014.54	6.20	22.25
52.00	93172.04	92966.14	2568538.47	27.57	0.59	54571.13	524369.02	5.63	21.94
53.00	92760.25	92536.11	2475572.32	26.69	0.57	52930.66	469797.90	5.06	21.62
54.00	92311.98	92063.08	2383036.21	25.82	0.55	50818.82	416867.24	4.52	21.30
55.00	91814.18	91546.38	2290973.13	24.95	0.54	49801.23	366048.42	3.99	20.97
56.00	91278.58	90985.20	2199426.75	24.10	0.52	47494.28	316247.19	3.46	20.63
57.00	90691.82	90382.30	2108441.54	23.25	0.50	45100.77	268752.91	2.96	20.29
58.00	90072.78	89731.05	2018059.24	22.40	0.46	40917.36	223652.14	2.48	19.92
59.00	89389.31	89023.12	1928328.20	21.57	0.44	39526.26	182734.79	2.04	19.53
60.00	88656.92	88255.77	1839305.08	20.75	0.37	32742.89	143208.52	1.62	19.13
61.00	87854.61	87430.91	1751049.31	19.93	0.33	28589.91	110465.63	1.26	18.67
62.00	87007.20	86550.18	1663618.41	19.12	0.31	26917.11	81875.73	0.94	18.18
63.00	86093.16	85595.17	1577068.22	18.32	0.28	24137.84	54958.62	0.64	17.68
64.00	85097.18	84552.05	1491473.05	17.53	0.26	21645.32	30820.78	0.36	17.16
65.00	84006.91	83413.25	1406921.01	16.75	0.11	9175.46	9175.46	0.11	16.64

1990

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and	Expected period of belonging to	Expected period outside the labour

							beyond	labour force	force
16.00	98785.87	98759.88	6051930.86	61.26	0.19	18468.10	2831915.14	28.67	32.60
17.00	98733.88	98700.02	5953170.98	60.30	0.30	29807.40	2813447.04	28.50	31.80
18.00	98666.15	98628.20	5854470.96	59.34	0.40	38958.14	2783639.64	28.21	31.12
19.00	98590.26	98547.15	5755842.76	58.38	0.37	36462.45	2744681.50	27.84	30.54
20.00	98504.04	98458.20	5657295.60	57.43	0.55	54348.93	2708219.05	27.49	29.94
21.00	98412.36	98364.48	5558837.40	56.49	0.64	62756.54	2653870.12	26.97	29.52
22.00	98316.60	98266.58	5460472.93	55.54	0.69	68098.74	2591113.59	26.35	29.18
23.00	98216.56	98164.19	5362206.35	54.60	0.72	70874.54	2523014.85	25.69	28.91
24.00	98111.82	98058.89	5264042.16	53.65	0.76	74720.88	2452140.30	24.99	28.66
25.00	98005.96	97952.44	5165983.27	52.71	0.78	76402.91	2377419.43	24.26	28.45
26.00	97898.92	97842.91	5068030.82	51.77	0.80	78078.64	2301016.52	23.50	28.26
27.00	97786.90	97725.91	4970187.91	50.83	0.78	76421.66	2222937.88	22.73	28.09
28.00	97664.91	97605.90	4872462.01	49.89	0.79	77303.87	2146516.22	21.98	27.91
29.00	97546.89	97483.76	4774856.10	48.95	0.78	76329.79	2069212.35	21.21	27.74
30.00	97420.64	97358.84	4677372.34	48.01	0.79	77108.20	1992882.56	20.46	27.56
31.00	97297.05	97237.40	4580013.50	47.07	0.76	74094.90	1915774.36	19.69	27.38
32.00	97177.76	97116.76	4482776.10	46.13	0.77	75071.25	1841679.46	18.95	27.18
33.00	97055.76	96995.18	4385659.34	45.19	0.75	72843.38	1766608.20	18.20	26.99
34.00	96934.60	96872.48	4288664.16	44.24	0.76	74010.57	1693764.82	17.47	26.77
35.00	96810.35	96745.67	4191791.68	43.30	0.75	72269.01	1619754.25	16.73	26.57
36.00	96680.98	96616.54	4095046.01	42.36	0.74	71592.86	1547485.24	16.01	26.35
37.00	96552.10	96489.57	3998429.48	41.41	0.73	70437.39	1475892.38	15.29	26.13
38.00	96427.04	96356.35	3901939.91	40.47	0.73	70725.56	1405455.00	14.58	25.89
39.00	96285.66	96209.65	3805583.56	39.52	0.72	69078.53	1334729.43	13.86	25.66
40.00	96133.64	96057.33	3709373.91	38.59	0.70	67528.30	1265650.91	13.17	25.42
41.00	95981.02	95897.27	3613316.57	37.65	0.70	67032.19	1198122.60	12.48	25.16
42.00	95813.51	95719.61	3517419.31	36.71	0.68	65376.49	1131090.41	11.81	24.91
43.00	95625.70	95527.07	3421699.70	35.78	0.68	65244.99	1065713.92	11.14	24.64
44.00	95428.44	95322.29	3326172.63	34.86	0.66	62722.06	1000468.93	10.48	24.37
45.00	95216.13	95105.51	3230850.34	33.93	0.66	63245.16	937746.87	9.85	24.08
46.00	94994.89	94873.60	3135744.83	33.01	0.65	61478.09	874501.70	9.21	23.80
47.00	94752.31	94616.83	3040871.24	32.09	0.63	59892.45	813023.61	8.58	23.51
48.00	94481.35	94338.93	2946254.41	31.18	0.63	59810.88	753131.16	7.97	23.21
49.00	94196.51	94040.39	2851915.48	30.28	0.62	58116.96	693320.28	7.36	22.92
50.00	93884.26	93704.02	2757875.09	29.38	0.62	58190.20	635203.32	6.77	22.61
51.00	93523.78	93328.99	2664171.07	28.49	0.60	56370.71	577013.12	6.17	22.32
52.00	93134.21	92921.05	2570842.07	27.60	0.59	54916.34	520642.41	5.59	22.01
53.00	92707.90	92478.26	2477921.02	26.73	0.57	53082.52	465726.07	5.02	21.70
54.00	92248.62	92011.66	2385442.76	25.86	0.57	52814.69	412643.54	4.47	21.39
55.00	91774.71	91508.62	2293431.10	24.99	0.52	47584.48	359828.85	3.92	21.07
56.00	91242.54	90966.61	2201922.48	24.13	0.52	47029.74	312244.37	3.42	20.71
57.00	90690.68	90385.47	2110955.87	23.28	0.51	45735.05	265214.63	2.92	20.35
58.00	90080.27	89753.12	2020570.40	22.43	0.46	41196.68	219479.58	2.44	19.99
59.00	89425.97	89053.17	1930817.28	21.59	0.44	38916.24	178282.90	1.99	19.60
60.00	88680.36	88304.27	1841764.11	20.77	0.36	31877.84	139366.66	1.57	19.20
61.00	87928.17	87494.80	1753459.84	19.94	0.33	28960.78	107488.82	1.22	18.72
62.00	87061.43	86597.41	1665965.05	19.14	0.30	25806.03	78528.05	0.90	18.23
63.00	86133.40	85633.10	1579367.63	18.34	0.29	24919.23	52722.02	0.61	17.72
64.00	85132.79	84612.98	1493734.53	17.55	0.22	18868.69	27802.79	0.33	17.22
65.00	84093.16	83496.19	1409121.56	16.76	0.11	8934.09	8934.09	0.11	16.65

1991

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98869.79	98844.86	6086632.07	61.56	0.18	17594.38	2834483.60	28.67	32.89
17.00	98819.93	98790.80	5987787.22	60.59	0.28	27365.05	2816889.22	28.51	32.09
18.00	98761.68	98723.73	5888996.41	59.63	0.37	36626.50	2789524.17	28.25	31.38
19.00	98685.77	98644.47	5790272.68	58.67	0.34	34032.34	2752897.66	27.90	30.78
20.00	98603.16	98555.82	5691628.22	57.72	0.52	51150.47	2718865.32	27.57	30.15
21.00	98508.47	98461.90	5593072.40	56.78	0.61	59667.91	2667714.85	27.08	29.70
22.00	98415.32	98361.68	5494610.50	55.83	0.69	68263.00	2608046.94	26.50	29.33
23.00	98308.04	98256.43	5396248.83	54.89	0.72	70842.88	2539783.94	25.83	29.06
24.00	98204.81	98152.83	5297992.40	53.95	0.76	74399.84	2468941.06	25.14	28.81
25.00	98100.84	98039.77	5199839.57	53.01	0.76	74804.35	2394541.21	24.41	28.60
26.00	97978.71	97920.12	5101799.80	52.07	0.79	77161.06	2319736.87	23.68	28.39
27.00	97861.54	97802.32	5003879.68	51.13	0.79	77263.83	2242575.81	22.92	28.22
28.00	97743.11	97678.14	4906077.35	50.19	0.79	76775.02	2165311.97	22.15	28.04
29.00	97613.18	97543.28	4808399.21	49.26	0.78	75888.67	2088536.95	21.40	27.86
30.00	97473.38	97403.27	4710855.93	48.33	0.77	75097.92	2012648.28	20.65	27.68
31.00	97333.17	97266.92	4613452.66	47.40	0.80	77619.01	1937550.36	19.91	27.49
32.00	97200.68	97135.91	4516185.73	46.46	0.77	74891.79	1859931.35	19.13	27.33
33.00	97071.14	97007.50	4419049.82	45.52	0.76	74210.74	1785039.57	18.39	27.13
34.00	96943.86	96880.28	4322042.32	44.58	0.75	72563.33	1710828.83	17.65	26.94
35.00	96816.71	96748.50	4225162.04	43.64	0.77	74399.60	1638265.50	16.92	26.72
36.00	96680.30	96611.07	4128413.54	42.70	0.78	74873.58	1563865.90	16.18	26.53
37.00	96541.84	96475.32	4031802.47	41.76	0.73	70909.36	1488992.32	15.42	26.34
38.00	96408.79	96338.19	3935327.15	40.82	0.73	69941.53	1418082.96	14.71	26.11
39.00	96267.59	96191.62	3838988.96	39.88	0.74	71085.61	1348141.43	14.00	25.87
40.00	96115.64	96033.32	3742797.34	38.94	0.70	66935.22	1277055.83	13.29	25.65
41.00	95950.99	95867.79	3646764.02	38.01	0.71	68162.00	1210120.61	12.61	25.39
42.00	95784.59	95696.94	3550896.23	37.07	0.70	67179.25	1141958.60	11.92	25.15

43.00	95609.28	95506.26	3455199.29	36.14	0.69	66090.33	1074779.35	11.24	24.90
44.00	95403.24	95296.21	3359693.03	35.22	0.66	63371.98	1008689.02	10.57	24.64
45.00	95189.19	95074.32	3264396.82	34.29	0.68	64555.46	945317.04	9.93	24.36
46.00	94959.46	94831.16	3169322.49	33.38	0.63	59933.29	880761.57	9.28	24.10
47.00	94702.87	94562.03	3074491.33	32.46	0.64	60046.89	820828.28	8.67	23.80
48.00	94421.20	94274.84	2979929.30	31.56	0.65	61467.19	760781.39	8.06	23.50
49.00	94128.48	93968.57	2885654.47	30.66	0.64	59670.04	699314.20	7.43	23.23
50.00	93808.67	93644.17	2791685.89	29.76	0.62	58433.96	639644.15	6.82	22.94
51.00	93479.67	93286.14	2698041.72	28.86	0.62	57930.69	581210.19	6.22	22.64
52.00	93092.61	92891.94	2604755.58	27.98	0.59	55177.81	523279.50	5.62	22.36
53.00	92691.27	92459.67	2511863.64	27.10	0.58	53903.99	468101.68	5.05	22.05
54.00	92228.06	91984.17	2419403.97	26.23	0.56	51235.18	414197.70	4.49	21.74
55.00	91740.27	91488.57	2327419.81	25.37	0.54	49586.81	362962.52	3.96	21.41
56.00	91236.87	90961.37	2235931.24	24.51	0.50	45753.57	313375.71	3.43	21.07
57.00	90685.86	90378.43	2144969.87	23.65	0.50	44827.70	267622.15	2.95	20.70
58.00	90071.00	89738.34	2054591.44	22.81	0.47	42087.28	222794.44	2.47	20.34
59.00	89405.69	89046.62	1964853.09	21.98	0.45	40427.17	180707.16	2.02	19.96
60.00	88687.56	88309.28	1875806.47	21.15	0.38	33469.22	140279.99	1.58	19.57
61.00	87930.99	87519.95	1787497.20	20.33	0.32	28268.94	106810.78	1.21	19.11
62.00	87108.90	86653.68	1699977.25	19.52	0.32	28075.79	78541.84	0.90	18.61
63.00	86198.47	85705.03	1613323.56	18.72	0.26	22369.01	50466.04	0.59	18.13
64.00	85211.60	84658.66	1527618.53	17.93	0.25	21080.01	28097.03	0.33	17.60
65.00	84105.73	83535.95	1442959.87	17.16	0.08	7017.02	7017.02	0.08	17.07

1992

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98908.18	98886.84	6126665.23	61.94	0.17	16810.76	2838834.29	28.70	33.24
17.00	98865.50	98839.14	6027778.39	60.97	0.29	28959.87	2822023.53	28.54	32.43
18.00	98812.79	98781.80	5928939.25	60.00	0.35	34968.76	2793063.66	28.27	31.74
19.00	98750.82	98714.47	5830157.44	59.04	0.34	33661.63	2758094.90	27.93	31.11
20.00	98678.12	98636.12	5731442.98	58.08	0.52	51783.96	2724433.27	27.61	30.47
21.00	98594.12	98552.22	5632806.86	57.13	0.58	56963.18	2672649.31	27.11	30.02
22.00	98510.31	98466.13	5534254.64	56.18	0.66	65283.04	2615686.12	26.55	29.63
23.00	98421.95	98375.77	5435788.51	55.23	0.70	68961.42	2550403.08	25.91	29.32
24.00	98329.59	98280.18	5337412.73	54.28	0.73	71842.81	2481441.66	25.24	29.04
25.00	98230.77	98176.51	5239132.55	53.33	0.78	76577.68	2409598.85	24.53	28.80
26.00	98122.25	98065.26	5140956.04	52.39	0.78	76687.03	2333021.17	23.78	28.62
27.00	98008.26	97947.90	5042890.79	51.45	0.79	77378.84	2256334.14	23.02	28.43
28.00	97887.53	97824.69	4944942.89	50.52	0.80	78064.10	2178955.30	22.26	28.26
29.00	97761.85	97690.12	4847118.20	49.58	0.78	76198.29	2100891.20	21.49	28.09
30.00	97618.38	97544.58	4749428.08	48.65	0.76	74328.97	2024692.91	20.74	27.91
31.00	97470.78	97400.21	4651883.50	47.73	0.78	75679.96	1950363.94	20.01	27.72
32.00	97329.63	97261.34	4554483.29	46.79	0.78	76058.37	1874683.98	19.26	27.53
33.00	97193.05	97121.77	4457221.96	45.86	0.78	75269.37	1798625.61	18.51	27.35
34.00	97050.50	96986.41	4360100.18	44.93	0.76	74000.63	1723356.24	17.76	27.17
35.00	96922.31	96854.30	4263113.78	43.98	0.76	73415.56	1649355.61	17.02	26.97
36.00	96786.28	96720.69	4166259.48	43.05	0.76	73411.01	1575940.05	16.28	26.76
37.00	96655.10	96586.46	4069538.79	42.10	0.76	72922.78	1502529.05	15.55	26.56
38.00	96517.83	96446.98	3972952.32	41.16	0.75	72238.79	1429606.27	14.81	26.35
39.00	96376.14	96300.29	3876505.34	40.22	0.74	71069.62	1357367.47	14.08	26.14
40.00	96224.44	96141.70	3780205.05	39.29	0.74	71337.14	1286297.86	13.37	25.92
41.00	96058.95	95975.36	3684063.35	38.35	0.72	69390.18	1214960.72	12.65	25.70
42.00	95891.77	95801.93	3588087.99	37.42	0.72	68689.98	1145570.54	11.95	25.47
43.00	95712.10	95615.12	3492286.06	36.49	0.69	66070.04	1076880.55	11.25	25.24
44.00	95518.13	95416.03	3396670.95	35.56	0.68	64405.82	1010810.51	10.58	24.98
45.00	95313.94	95208.17	3301254.91	34.64	0.67	63503.85	946404.68	9.93	24.71
46.00	95102.41	94979.08	3206046.74	33.71	0.66	62876.15	882900.83	9.28	24.43
47.00	94855.76	94722.13	3111067.66	32.80	0.64	61095.77	820024.68	8.64	24.15
48.00	94588.49	94447.85	3016345.53	31.89	0.65	61391.10	758928.91	8.02	23.87
49.00	94307.20	94144.90	2921897.68	30.98	0.62	58746.42	697537.81	7.40	23.59
50.00	93982.59	93819.07	2827752.78	30.09	0.62	57980.18	638791.39	6.80	23.29
51.00	93655.55	93477.93	2733933.72	29.19	0.61	57208.49	580811.21	6.20	22.99
52.00	93300.30	93096.05	2640455.79	28.30	0.60	56043.82	523602.72	5.61	22.69
53.00	92891.80	92666.84	2547359.74	27.42	0.58	53561.43	467558.89	5.03	22.39
54.00	92441.88	92205.49	2454692.90	26.55	0.57	52372.72	413997.46	4.48	22.08
55.00	91969.11	91716.00	2362487.40	25.69	0.54	49159.78	361624.74	3.93	21.76
56.00	91462.89	91180.30	2270771.40	24.83	0.52	46957.85	312464.96	3.42	21.41
57.00	90897.71	90605.97	2179591.10	23.98	0.48	43128.44	265507.11	2.92	21.06
58.00	90314.23	89989.30	2088985.13	23.13	0.47	42474.95	222378.66	2.46	20.67
59.00	89664.38	89321.50	1998995.83	22.29	0.43	38229.60	179903.71	2.01	20.29
60.00	88978.63	88602.17	1909674.33	21.46	0.40	35706.67	141674.11	1.59	19.87
61.00	88225.71	87819.90	1821072.16	20.64	0.32	27838.91	105967.44	1.20	19.44
62.00	87414.08	86962.01	1733252.26	19.83	0.30	26349.49	78128.53	0.89	18.93
63.00	86509.94	86028.76	1646290.26	19.03	0.27	23485.85	51779.04	0.60	18.43
64.00	85547.59	85026.17	1560261.49	18.24	0.24	20066.18	28293.19	0.33	17.91
65.00	84504.76	83949.10	1475235.32	17.46	0.10	8227.01	8227.01	0.10	17.36

1993

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	98969.22	98950.62	6140649.52	62.05	0.15	15040.49	2863514.29	28.93	33.11
17.00	98932.02	98909.04	6041698.90	61.07	0.26	26013.08	2848473.80	28.79	32.28
18.00	98886.05	98857.48	5942789.87	60.10	0.36	35193.26	2822460.72	28.54	31.55
19.00	98828.92	98794.62	5843932.38	59.13	0.35	34775.71	2787267.46	28.20	30.93
20.00	98760.32	98724.98	5745137.77	58.17	0.50	49757.39	2752491.75	27.87	30.30
21.00	98689.63	98653.59	5646412.79	57.21	0.58	57515.04	2702734.37	27.39	29.83
22.00	98617.54	98581.20	5547759.20	56.26	0.66	64669.27	2645219.32	26.82	29.43
23.00	98544.85	98504.42	5449178.00	55.30	0.69	67869.54	2580550.06	26.19	29.11
24.00	98463.98	98421.29	5350673.58	54.34	0.76	74308.08	2512680.51	25.52	28.82
25.00	98378.60	98332.52	5252252.29	53.39	0.79	77879.35	2438372.44	24.79	28.60
26.00	98286.43	98230.32	5153919.77	52.44	0.80	78191.34	2360493.08	24.02	28.42
27.00	98174.22	98117.80	5055689.45	51.50	0.80	78199.89	2282301.75	23.25	28.25
28.00	98061.38	97999.65	4957571.65	50.56	0.81	79575.72	2204101.86	22.48	28.08
29.00	97937.93	97874.58	4859572.00	49.62	0.79	77614.54	2124526.14	21.69	27.93
30.00	97811.22	97741.74	4761697.42	48.68	0.80	77802.42	2046911.60	20.93	27.76
31.00	97672.26	97601.50	4663955.68	47.75	0.77	75250.76	1969109.18	20.16	27.59
32.00	97530.74	97459.21	4566354.18	46.82	0.80	77967.37	1893858.42	19.42	27.40
33.00	97387.67	97317.26	4468894.98	45.89	0.79	76783.32	1815891.06	18.65	27.24
34.00	97246.86	97177.16	4371577.71	44.95	0.80	77644.55	1739107.74	17.88	27.07
35.00	97107.47	97039.37	4274400.55	44.02	0.78	76175.91	1661463.18	17.11	26.91
36.00	96971.27	96902.33	4177361.17	43.08	0.76	73355.07	1585287.27	16.35	26.73
37.00	96833.40	96762.23	4080458.84	42.14	0.77	74893.97	1511932.21	15.61	26.53
38.00	96691.07	96622.53	3983696.61	41.20	0.76	73916.24	1437038.24	14.86	26.34
39.00	96553.99	96479.39	3887074.08	40.26	0.78	74964.49	1363122.00	14.12	26.14
40.00	96404.80	96321.79	3790594.68	39.32	0.73	70314.91	1288157.51	13.36	25.96
41.00	96238.79	96156.39	3694272.89	38.39	0.73	69809.54	1217842.60	12.65	25.73
42.00	96073.98	95981.30	3598116.50	37.45	0.72	69490.46	1148033.07	11.95	25.50
43.00	95888.61	95793.03	3502135.20	36.52	0.71	67725.67	1078542.61	11.25	25.28
44.00	95697.44	95594.43	3406342.18	35.59	0.69	65577.78	1010816.94	10.56	25.03
45.00	95491.43	95371.60	3310747.74	34.67	0.68	64566.57	945239.16	9.90	24.77
46.00	95251.78	95135.81	3215376.14	33.76	0.68	64502.08	880672.58	9.25	24.51
47.00	95019.84	94886.67	3120240.33	32.84	0.67	63763.84	816170.50	8.59	24.25
48.00	94753.50	94610.17	3025353.66	31.93	0.63	59888.24	752406.66	7.94	23.99
49.00	94466.83	94307.86	2930743.49	31.02	0.65	61677.34	692518.42	7.33	23.69
50.00	94148.90	93977.72	2836435.63	30.13	0.64	59863.81	630841.08	6.70	23.43
51.00	93806.54	93635.47	2742457.91	29.24	0.60	56368.55	570977.27	6.09	23.15
52.00	93464.40	93276.14	2648822.44	28.34	0.61	56711.89	514608.72	5.51	22.83
53.00	93087.87	92865.42	2555546.30	27.45	0.59	54883.46	457896.83	4.92	22.53
54.00	92642.96	92404.51	2462680.88	26.58	0.54	50175.65	403013.36	4.35	22.23
55.00	92166.05	91916.02	2370276.38	25.72	0.53	48807.41	352837.72	3.83	21.89
56.00	91665.99	91395.04	2278360.36	24.86	0.48	44326.59	304030.31	3.32	21.54
57.00	91124.08	90840.18	2186965.32	24.00	0.49	44420.85	259703.72	2.85	21.15
58.00	90556.28	90245.06	2096125.14	23.15	0.44	40068.81	215282.87	2.38	20.77
59.00	89933.84	89593.16	2005880.08	22.30	0.42	38077.09	175214.06	1.95	20.36
60.00	89252.47	88872.54	1916286.92	21.47	0.39	34660.29	137136.97	1.54	19.93
61.00	88492.60	88097.54	1827414.38	20.65	0.31	27486.43	102476.68	1.16	19.49
62.00	87702.47	87270.39	1739316.84	19.83	0.30	26006.58	74990.25	0.86	18.98
63.00	86838.31	86367.11	1652046.45	19.02	0.25	21937.25	48983.67	0.56	18.46
64.00	85895.91	85375.96	1565679.34	18.23	0.22	18953.46	27046.43	0.31	17.91
65.00	84856.02	84301.68	1480303.37	17.44	0.10	8092.96	8092.96	0.10	17.35

1994

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99056.83	99039.60	6174216.12	62.33	0.14	14063.62	2867312.79	28.95	33.38
17.00	99022.37	99001.50	6075176.52	61.35	0.24	24255.37	2853249.17	28.81	32.54
18.00	98980.62	98958.03	5976175.02	60.38	0.30	29885.35	2828993.80	28.58	31.80
19.00	98935.43	98908.43	5877216.99	59.40	0.34	33628.87	2799108.48	28.29	31.11
20.00	98881.43	98849.96	5778308.56	58.44	0.49	48337.63	2765479.61	27.97	30.47
21.00	98818.49	98785.67	5679458.61	57.47	0.56	55023.62	2717141.99	27.50	29.98
22.00	98752.85	98720.14	5580672.94	56.51	0.64	62786.01	2662118.37	26.96	29.55
23.00	98687.42	98649.91	5481952.80	55.55	0.70	69252.23	2599332.36	26.34	29.21
24.00	98612.39	98574.99	5383302.89	54.59	0.76	74424.12	2530080.13	25.66	28.93
25.00	98537.60	98493.30	5284727.90	53.63	0.78	77317.24	2455656.01	24.92	28.71
26.00	98449.01	98401.27	5186234.59	52.68	0.80	78917.82	2378338.76	24.16	28.52
27.00	98353.53	98295.28	5087833.32	51.73	0.80	79029.41	2299420.94	23.38	28.35
28.00	98237.03	98178.76	4989538.04	50.79	0.80	78346.65	2220391.53	22.60	28.19
29.00	98120.49	98051.79	4891359.28	49.85	0.81	79323.90	2142044.88	21.83	28.02
30.00	97983.09	97910.87	4793307.49	48.92	0.80	78720.34	2062720.99	21.05	27.87
31.00	97838.65	97766.69	4695396.62	47.99	0.79	77626.75	1984000.64	20.28	27.71
32.00	97694.73	97619.76	4597629.92	47.06	0.78	76241.03	1906373.89	19.51	27.55
33.00	97544.78	97467.97	4500010.16	46.13	0.79	76999.70	1830132.86	18.76	27.37
34.00	97391.16	97316.42	4402542.19	45.20	0.78	75906.81	1753133.16	18.00	27.20
35.00	97241.69	97170.96	4305225.77	44.27	0.77	75210.32	1677226.35	17.25	27.03
36.00	97100.23	97029.70	4208054.82	43.34	0.78	75780.20	1602016.03	16.50	26.84
37.00	96959.18	96889.45	4111025.11	42.40	0.77	74701.76	1526235.84	15.74	26.66

38.00	96819.71	96741.42	4014135.67	41.46	0.76	73716.96	1451534.07	14.99	26.47
39.00	96663.13	96585.04	3917394.25	40.53	0.77	74273.89	1377817.11	14.25	26.27
40.00	96506.95	96426.58	3820809.21	39.59	0.78	75019.88	1303543.21	13.51	26.08
41.00	96346.21	96265.62	3724382.63	38.66	0.75	72488.01	1228523.34	12.75	25.91
42.00	96185.04	96091.16	3628117.01	37.72	0.73	69858.27	1156035.32	12.02	25.70
43.00	95997.28	95904.90	3532025.85	36.79	0.74	70777.82	1086177.05	11.31	25.48
44.00	95812.52	95706.39	3436120.95	35.86	0.73	70248.49	1015399.24	10.60	25.27
45.00	95600.26	95479.90	3340414.56	34.94	0.71	67981.69	945150.75	9.89	25.05
46.00	95359.55	95229.23	3244934.66	34.03	0.69	65803.40	877169.06	9.20	24.83
47.00	95098.91	94968.19	3149705.43	33.12	0.67	63913.59	811365.66	8.53	24.59
48.00	94837.47	94690.15	3054737.24	32.21	0.67	63063.64	747452.07	7.88	24.33
49.00	94542.83	94396.32	2960047.10	31.31	0.64	60319.25	684388.43	7.24	24.07
50.00	94249.81	94088.12	2865650.78	30.40	0.63	59463.69	624069.18	6.62	23.78
51.00	93926.43	93747.36	2771562.66	29.51	0.64	59810.81	564605.49	6.01	23.50
52.00	93568.29	93388.41	2677815.30	28.62	0.59	55566.10	504794.68	5.39	23.22
53.00	93208.53	93000.97	2584426.89	27.73	0.60	56265.59	449228.57	4.82	22.91
54.00	92793.41	92569.84	2491425.92	26.85	0.56	51839.11	392962.99	4.23	22.61
55.00	92346.26	92100.97	2398856.09	25.98	0.51	46787.29	341123.88	3.69	22.28
56.00	91855.67	91587.39	2306755.12	25.11	0.50	45885.28	294336.59	3.20	21.91
57.00	91319.11	91035.13	2215167.73	24.26	0.46	41876.16	248451.31	2.72	21.54
58.00	90751.15	90443.64	2124132.61	23.41	0.46	42056.29	206575.15	2.28	21.13
59.00	90136.12	89804.52	2033688.97	22.56	0.42	37717.90	164518.86	1.83	20.74
60.00	89472.92	89118.16	1943884.45	21.73	0.32	28339.58	126800.96	1.42	20.31
61.00	88763.40	88379.27	1854766.29	20.90	0.30	26337.02	98461.38	1.11	19.79
62.00	87995.14	87576.62	1766387.02	20.07	0.28	24959.34	72124.36	0.82	19.25
63.00	87158.10	86700.01	1678810.39	19.26	0.27	23322.30	47165.02	0.54	18.72
64.00	86241.91	85742.20	1592110.39	18.46	0.20	17405.67	23842.72	0.28	18.18
65.00	85242.49	84698.11	1506368.19	17.67	0.08	6437.06	6437.06	0.08	17.60

1995

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99127.18	99106.29	6181915.02	62.36	0.14	13379.35	2871094.76	28.96	33.40
17.00	99085.41	99064.40	6082808.73	61.39	0.22	21695.10	2857715.41	28.84	32.55
18.00	99043.40	99019.62	5983744.32	60.42	0.28	28022.55	2836020.31	28.63	31.78
19.00	98995.84	98968.38	5884724.70	59.44	0.31	30383.29	2807997.75	28.36	31.08
20.00	98940.91	98912.59	5785756.33	58.48	0.48	47082.39	2777614.46	28.07	30.40
21.00	98884.27	98854.46	5686843.74	57.51	0.53	51997.45	2730532.07	27.61	29.90
22.00	98824.65	98793.26	5587989.28	56.54	0.63	62140.96	2678534.63	27.10	29.44
23.00	98761.88	98723.70	5489196.01	55.58	0.70	68711.69	2616393.66	26.49	29.09
24.00	98685.52	98646.80	5390472.32	54.62	0.74	73294.57	2547681.97	25.82	28.81
25.00	98608.08	98564.39	5291825.52	53.67	0.78	76978.79	2474387.40	25.09	28.57
26.00	98520.70	98475.54	5193261.12	52.71	0.80	78977.38	2397408.61	24.33	28.38
27.00	98430.37	98376.40	5094785.58	51.76	0.82	80570.27	2318431.22	23.55	28.21
28.00	98322.43	98264.20	4996409.18	50.82	0.82	80380.11	2237860.95	22.76	28.06
29.00	98205.97	98141.47	4898144.99	49.88	0.80	78513.17	2157480.84	21.97	27.91
30.00	98076.97	98009.47	4800003.52	48.94	0.80	78211.56	2078967.67	21.20	27.74
31.00	97941.98	97868.58	4701994.05	48.01	0.81	79175.68	2000756.11	20.43	27.58
32.00	97795.18	97716.82	4604125.47	47.08	0.78	75730.54	1921580.42	19.65	27.43
33.00	97638.46	97556.22	4506408.65	46.15	0.78	75996.30	1845849.89	18.90	27.25
34.00	97473.99	97390.39	4408852.43	45.23	0.78	75964.51	1769853.59	18.16	27.07
35.00	97306.80	97223.56	4311462.03	44.31	0.80	77681.62	1693889.09	17.41	26.90
36.00	97140.32	97060.57	4214238.48	43.38	0.77	74736.64	1616207.46	16.64	26.75
37.00	96980.83	96904.40	4117177.90	42.45	0.79	76166.86	1541470.82	15.89	26.56
38.00	96827.96	96754.57	4020273.51	41.52	0.77	74597.77	1465303.97	15.13	26.39
39.00	96681.18	96601.62	3923518.94	40.58	0.77	74383.24	1390706.19	14.38	26.20
40.00	96522.06	96434.29	3826917.32	39.65	0.78	75508.05	1316322.95	13.64	26.01
41.00	96346.53	96260.70	3730483.03	38.72	0.75	71906.75	1240814.90	12.88	25.84
42.00	96174.88	96091.50	3634222.33	37.79	0.75	71876.44	1168908.15	12.15	25.63
43.00	96008.12	95907.70	3538130.82	36.85	0.73	69916.71	1097031.71	11.43	25.43
44.00	95807.28	95706.04	3442223.12	35.93	0.73	69961.11	1027115.00	10.72	25.21
45.00	95604.80	95488.40	3346517.08	35.00	0.72	68847.14	957153.88	10.01	24.99
46.00	95372.00	95254.65	3251028.68	34.09	0.71	67821.31	888306.74	9.31	24.77
47.00	95137.30	95001.79	3155774.03	33.17	0.67	63936.21	820485.43	8.62	24.55
48.00	94866.29	94730.20	3060772.24	32.26	0.68	64416.54	756549.23	7.97	24.29
49.00	94594.12	94442.20	2966042.03	31.36	0.65	61765.20	692132.69	7.32	24.04
50.00	94290.27	94124.45	2871599.84	30.45	0.64	59957.28	630367.49	6.69	23.77
51.00	93958.64	93789.04	2777475.38	29.56	0.62	58242.99	570410.21	6.07	23.49
52.00	93619.43	93434.94	2683686.35	28.67	0.60	55687.22	512167.22	5.47	23.20
53.00	93250.44	93048.19	2590251.41	27.78	0.61	57224.63	456480.00	4.90	22.88
54.00	92845.93	92631.01	2497203.22	26.90	0.57	53170.20	399255.36	4.30	22.60
55.00	92416.09	92171.65	2404572.21	26.02	0.54	49957.04	346085.16	3.74	22.27
56.00	91927.22	91660.89	2312400.56	25.15	0.48	44180.55	296128.13	3.22	21.93
57.00	91394.56	91114.52	2220739.67	24.30	0.48	44190.54	251947.58	2.76	21.54
58.00	90834.47	90526.52	2129625.15	23.45	0.45	40555.88	207757.04	2.29	21.16
59.00	90218.57	89886.05	2039098.63	22.60	0.43	38740.89	167201.15	1.85	20.75
60.00	89553.53	89195.88	1949212.58	21.77	0.35	31218.56	128460.27	1.43	20.33
61.00	88838.24	88458.77	1860016.69	20.94	0.30	26183.80	97241.71	1.09	19.84
62.00	88079.30	87657.30	1771557.92	20.11	0.27	23842.79	71057.91	0.81	19.31
63.00	87235.31	86784.71	1683900.62	19.30	0.27	23171.52	47215.13	0.54	18.76
64.00	86334.12	85832.95	1597115.91	18.50	0.21	17939.09	24043.61	0.28	18.22
65.00	85331.79	84784.99	1511282.95	17.71	0.07	6104.52	6104.52	0.07	17.64

1996

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99106.81	99088.42	6195569.19	62.51	0.14	13674.20	2905656.97	29.32	33.20
17.00	99070.03	99046.61	6096480.77	61.54	0.22	21691.21	2891982.77	29.19	32.35
18.00	99023.18	98999.30	5997434.16	60.57	0.29	29204.79	2870291.56	28.99	31.58
19.00	98975.42	98949.96	5898434.86	59.59	0.32	31762.94	2841086.77	28.70	30.89
20.00	98924.50	98898.83	5799484.90	58.63	0.47	46383.55	2809323.83	28.40	30.23
21.00	98873.16	98844.20	5700586.07	57.66	0.53	52486.27	2762940.28	27.94	29.71
22.00	98815.24	98782.32	5601741.87	56.69	0.61	59960.87	2710454.01	27.43	29.26
23.00	98749.41	98716.27	5502959.55	55.73	0.67	65745.04	2650493.14	26.84	28.89
24.00	98683.13	98647.30	5404243.28	54.76	0.74	72703.06	2584748.10	26.19	28.57
25.00	98611.46	98572.82	5305595.98	53.80	0.78	76689.66	2512045.04	25.47	28.33
26.00	98534.18	98492.69	5207023.16	52.84	0.82	80370.03	2435355.39	24.72	28.13
27.00	98451.19	98406.60	5108530.47	51.89	0.83	81677.48	2354985.35	23.92	27.97
28.00	98362.01	98309.62	5010123.87	50.94	0.82	80810.50	2273307.87	23.11	27.82
29.00	98257.22	98190.77	4911814.25	49.99	0.81	79829.09	2192497.37	22.31	27.68
30.00	98124.32	98055.70	4813623.48	49.06	0.81	79425.12	2112668.28	21.53	27.53
31.00	97987.08	97914.05	4715567.79	48.12	0.80	78429.15	2033243.16	20.75	27.37
32.00	97841.01	97763.49	4617653.74	47.20	0.80	77917.50	1954814.01	19.98	27.22
33.00	97685.96	97611.20	4519890.25	46.27	0.80	77991.35	1876896.51	19.21	27.06
34.00	97536.44	97454.88	4422279.06	45.34	0.80	77476.63	1798905.16	18.44	26.90
35.00	97373.31	97293.88	4324824.18	44.41	0.79	76570.29	1721428.54	17.68	26.74
36.00	97214.46	97137.39	4227530.30	43.49	0.81	78584.15	1644858.25	16.92	26.57
37.00	97060.32	96980.38	4130392.91	42.55	0.79	76226.58	1566274.10	16.14	26.42
38.00	96900.44	96824.33	4033412.52	41.62	0.79	76781.70	1490047.52	15.38	26.25
39.00	96748.23	96670.30	3936588.19	40.69	0.78	75596.17	1413265.83	14.61	26.08
40.00	96592.37	96505.72	3839917.89	39.75	0.78	74984.94	1337669.65	13.85	25.91
41.00	96419.07	96329.02	3743412.18	38.82	0.77	74462.33	1262684.71	13.10	25.73
42.00	96238.98	96151.10	3647083.15	37.90	0.75	72017.17	1188222.38	12.35	25.55
43.00	96063.22	95961.51	3550932.05	36.96	0.73	70435.74	1116205.20	11.62	25.35
44.00	95859.79	95759.87	3454970.55	36.04	0.73	70000.47	1045769.46	10.91	25.13
45.00	95659.96	95551.36	3359210.68	35.12	0.74	71090.21	975768.99	10.20	24.92
46.00	95442.76	95329.33	3263659.32	34.19	0.70	66730.53	904678.78	9.48	24.72
47.00	95215.90	95092.35	3168329.99	33.28	0.71	67230.29	837948.25	8.80	24.47
48.00	94968.80	94829.26	3073237.64	32.36	0.67	63725.26	770717.96	8.12	24.25
49.00	94689.71	94540.58	2978408.38	31.45	0.68	64193.05	706992.70	7.47	23.99
50.00	94391.45	94229.85	2883867.80	30.55	0.66	61720.55	642799.65	6.81	23.74
51.00	94068.25	93893.60	2789637.96	29.66	0.63	59152.97	581079.10	6.18	23.48
52.00	93718.96	93526.58	2695744.36	28.76	0.62	57612.37	521926.13	5.57	23.20
53.00	93334.20	93127.52	2602217.78	27.88	0.60	56062.77	464313.75	4.97	22.91
54.00	92920.84	92710.29	2509090.26	27.00	0.60	55533.46	408250.99	4.39	22.61
55.00	92499.73	92269.06	2416379.97	26.12	0.54	50194.37	352717.52	3.81	22.31
56.00	92038.39	91769.36	2324110.91	25.25	0.51	46618.83	302523.16	3.29	21.96
57.00	91500.33	91224.34	2232341.55	24.40	0.47	43331.56	255904.32	2.80	21.60
58.00	90948.36	90639.53	2141117.20	23.54	0.45	40515.87	212572.76	2.34	21.20
59.00	90330.71	90002.39	2050477.67	22.70	0.45	40231.07	172056.88	1.90	20.79
60.00	89674.08	89319.62	1960475.28	21.86	0.36	32333.70	131825.81	1.47	20.39
61.00	88965.16	88597.76	1871155.66	21.03	0.34	30123.24	99492.11	1.12	19.91
62.00	88230.36	87822.07	1782557.90	20.20	0.27	23360.67	69368.88	0.79	19.42
63.00	87413.77	86971.71	1694735.83	19.39	0.24	20960.18	46008.21	0.53	18.86
64.00	86529.66	86050.98	1607764.12	18.58	0.21	18328.86	25048.02	0.29	18.29
65.00	85572.31	85052.70	1521713.14	17.78	0.08	6719.16	6719.16	0.08	17.70

1997

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99179.00	99159.23	6242337.17	62.94	0.13	12692.38	2936616.80	29.61	33.33
17.00	99139.47	99118.07	6143177.94	61.97	0.20	20021.85	2923924.42	29.49	32.47
18.00	99096.66	99072.27	6044059.87	60.99	0.29	29028.17	2903902.57	29.30	31.69
19.00	99047.87	99019.55	5944987.61	60.02	0.31	30299.98	2874874.40	29.03	31.00
20.00	98991.23	98965.10	5845968.06	59.06	0.44	43544.64	2844574.42	28.74	30.32
21.00	98938.97	98913.70	5747002.96	58.09	0.53	52226.43	2801029.77	28.31	29.78
22.00	98888.44	98861.03	5648089.26	57.12	0.61	59909.78	2748803.34	27.80	29.32
23.00	98833.62	98805.38	5549228.23	56.15	0.68	67088.85	2688893.56	27.21	28.94
24.00	98777.14	98748.60	5450422.85	55.18	0.74	73370.21	2621804.71	26.54	28.64
25.00	98720.06	98684.76	5351674.26	54.21	0.78	77368.85	2548434.50	25.81	28.40
26.00	98649.46	98618.43	5252989.50	53.25	0.81	80275.40	2471065.65	25.05	28.20
27.00	98587.40	98546.99	5154371.06	52.28	0.85	83469.30	2390790.24	24.25	28.03
28.00	98506.58	98465.71	5055824.07	51.32	0.84	82711.20	2307320.94	23.42	27.90

29.00	98424.85	98377.88	4957358.36	50.37	0.82	80276.35	2224609.74	22.60	27.76
30.00	98330.91	98279.64	4858980.48	49.41	0.82	80589.30	2144333.40	21.81	27.61
31.00	98228.37	98173.67	4760700.85	48.47	0.82	80796.93	2063744.09	21.01	27.46
32.00	98118.98	98062.29	4662527.17	47.52	0.78	76782.77	1982947.16	20.21	27.31
33.00	98005.59	97942.95	4564464.89	46.57	0.80	78648.18	1906164.39	19.45	27.12
34.00	97880.30	97818.47	4466521.94	45.63	0.79	77374.41	1827516.20	18.67	26.96
35.00	97756.64	97695.00	4368703.47	44.69	0.79	76983.66	1750141.79	17.90	26.79
36.00	97633.36	97570.32	4271008.47	43.75	0.81	78641.67	1673158.13	17.14	26.61
37.00	97507.27	97437.81	4173438.15	42.80	0.78	76098.93	1594516.46	16.35	26.45
38.00	97368.35	97298.84	4076000.34	41.86	0.79	76768.79	1518417.53	15.59	26.27
39.00	97229.33	97153.98	3978701.50	40.92	0.79	76654.49	1441648.74	14.83	26.09
40.00	97078.63	97003.38	3881547.51	39.98	0.79	76341.66	1364994.25	14.06	25.92
41.00	96928.12	96848.03	3784544.14	39.04	0.78	75638.31	1288652.59	13.29	25.75
42.00	96767.94	96681.84	3687696.11	38.11	0.77	74541.70	1213014.28	12.54	25.57
43.00	96595.73	96506.31	3591014.27	37.18	0.75	72090.21	1138472.58	11.79	25.39
44.00	96416.89	96316.49	3494507.96	36.24	0.74	71081.57	1066382.37	11.06	25.18
45.00	96216.10	96106.37	3398191.47	35.32	0.71	68139.42	995300.80	10.34	24.97
46.00	95996.65	95877.32	3302085.09	34.40	0.75	71524.48	927161.38	9.66	24.74
47.00	95757.98	95640.20	3206207.78	33.48	0.70	67235.06	855636.90	8.94	24.55
48.00	95522.42	95393.66	3110567.57	32.56	0.69	66203.20	788401.83	8.25	24.31
49.00	95264.90	95108.30	3015173.91	31.65	0.69	65719.84	722198.63	7.58	24.07
50.00	94951.71	94800.58	2920065.61	30.75	0.66	62473.58	656478.79	6.91	23.84
51.00	94649.45	94472.20	2825265.03	29.85	0.64	60745.63	594005.21	6.28	23.57
52.00	94294.96	94114.16	2730792.83	28.96	0.63	59386.03	533259.59	5.66	23.30
53.00	93933.35	93737.48	2636678.67	28.07	0.61	56898.65	473873.56	5.04	23.02
54.00	93541.61	93327.50	2542941.19	27.19	0.59	54689.92	416974.90	4.46	22.73
55.00	93113.39	92892.78	2449613.69	26.31	0.56	52391.53	362284.99	3.89	22.42
56.00	92672.18	92429.98	2356720.91	25.43	0.54	49450.04	309893.46	3.34	22.09
57.00	92187.79	91912.40	2264290.93	24.56	0.50	45588.55	260443.42	2.83	21.74
58.00	91637.00	91339.68	2172378.53	23.71	0.47	42655.63	214854.87	2.34	21.36
59.00	91042.36	90725.87	2081038.85	22.86	0.44	39737.93	172199.24	1.89	20.97
60.00	90409.38	90065.80	1990312.98	22.01	0.36	32513.75	132461.31	1.47	20.55
61.00	89722.21	89355.47	1900247.18	21.18	0.32	28504.39	99947.56	1.11	20.07
62.00	88988.73	88585.96	1810891.71	20.35	0.30	26752.96	71443.16	0.80	19.55
63.00	88183.20	87749.83	1722305.75	19.53	0.23	20445.71	44690.20	0.51	19.02
64.00	87316.46	86837.88	1634555.92	18.72	0.21	18149.12	24244.49	0.28	18.44
65.00	86359.30	85850.34	1547718.04	17.92	0.07	6095.37	6095.37	0.07	17.85

1998

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99222.89	99203.93	6253243.08	63.02	0.13	12797.31	2957501.28	29.81	33.22
17.00	99184.98	99160.78	6154039.14	62.05	0.21	21319.57	2944703.97	29.69	32.36
18.00	99136.58	99109.59	6054878.36	61.08	0.29	28543.56	2923384.40	29.49	31.59
19.00	99082.60	99060.20	5955768.77	60.11	0.34	33185.17	2894840.84	29.22	30.89
20.00	99037.80	99010.53	5856708.57	59.14	0.46	45247.81	2861655.67	28.89	30.24
21.00	98983.27	98954.75	5757698.04	58.17	0.53	52544.97	2816407.86	28.45	29.72
22.00	98926.22	98897.31	5658743.29	57.20	0.58	57854.93	2763862.89	27.94	29.26
23.00	98868.40	98838.07	5559845.98	56.23	0.67	66616.86	2706007.96	27.37	28.87
24.00	98807.73	98777.26	5461007.91	55.27	0.75	73786.61	2639391.10	26.71	28.56
25.00	98746.78	98714.82	5362230.65	54.30	0.79	78182.14	2565604.49	25.98	28.32
26.00	98682.86	98650.23	5263515.84	53.34	0.82	81386.44	2487422.35	25.21	28.13
27.00	98617.60	98581.40	5164865.61	52.37	0.84	82512.64	2406035.92	24.40	27.98
28.00	98545.21	98506.66	5066284.20	51.41	0.85	83336.63	2323523.28	23.58	27.83
29.00	98468.10	98429.41	4967777.55	50.45	0.84	82779.14	2240186.65	22.75	27.70
30.00	98390.73	98347.21	4869348.13	49.49	0.83	81529.83	2157407.51	21.93	27.56
31.00	98303.69	98257.14	4771000.93	48.53	0.83	81160.40	2075877.68	21.12	27.42
32.00	98210.59	98161.78	4672743.79	47.58	0.81	79216.56	1994717.28	20.31	27.27
33.00	98112.97	98060.21	4574582.01	46.63	0.80	77957.87	1915500.72	19.52	27.10
34.00	98007.45	97956.36	4476521.79	45.68	0.81	79442.60	1837542.85	18.75	26.93
35.00	97905.26	97850.36	4378565.44	44.72	0.80	78671.69	1758100.25	17.96	26.77
36.00	97795.46	97737.25	4280715.08	43.77	0.79	77603.38	1679428.56	17.17	26.60
37.00	97679.05	97615.92	4182977.83	42.82	0.80	78092.74	1601825.18	16.40	26.42
38.00	97552.79	97486.55	4085361.91	41.88	0.79	76916.88	1523732.45	15.62	26.26
39.00	97420.30	97354.37	3987875.36	40.93	0.78	75936.41	1446815.56	14.85	26.08
40.00	97288.44	97216.38	3890520.99	39.99	0.78	75731.56	1370879.16	14.09	25.90
41.00	97144.32	97065.04	3793304.62	39.05	0.79	76390.18	1295147.60	13.33	25.72
42.00	96985.76	96905.51	3696239.58	38.11	0.77	74907.96	1218757.41	12.57	25.54
43.00	96825.26	96735.16	3599334.07	37.17	0.75	72164.43	1143849.45	11.81	25.36
44.00	96645.05	96548.97	3502598.91	36.24	0.74	71349.69	1071685.03	11.09	25.15
45.00	96452.90	96350.39	3406049.94	35.31	0.73	70335.79	1000335.34	10.37	24.94
46.00	96247.88	96138.37	3309699.55	34.39	0.73	70084.87	929999.55	9.66	24.72
47.00	96028.87	95905.18	3213561.17	33.46	0.72	68955.83	859914.68	8.95	24.51
48.00	95781.50	95649.52	3117655.99	32.55	0.70	67337.26	790958.85	8.26	24.29
49.00	95517.54	95375.48	3022006.47	31.64	0.66	63329.32	723621.59	7.58	24.06
50.00	95233.42	95075.12	2926630.99	30.73	0.66	62939.73	660292.27	6.93	23.80
51.00	94916.81	94757.84	2831555.87	29.83	0.66	63013.96	597352.54	6.29	23.54
52.00	94598.86	94415.99	2736798.03	28.93	0.64	60142.98	534338.58	5.65	23.28
53.00	94233.11	94040.09	2642382.04	28.04	0.61	57458.49	474195.59	5.03	23.01
54.00	93847.06	93635.02	2548341.96	27.15	0.59	54870.12	416737.10	4.44	22.71
55.00	93422.98	93192.61	2454706.94	26.28	0.55	51442.32	361866.98	3.87	22.40
56.00	92962.23	92729.63	2361514.33	25.40	0.56	52021.32	310424.66	3.34	22.06
57.00	92497.03	92235.08	2268784.70	24.53	0.50	46302.01	258403.33	2.79	21.73

58.00	91973.13	91681.17	2176549.62	23.67	0.48	43731.92	212101.32	2.31	21.36
59.00	91389.21	91074.09	2084868.45	22.81	0.43	39344.01	168369.41	1.84	20.97
60.00	90758.97	90417.07	1993794.35	21.97	0.34	31193.89	129025.40	1.42	20.55
61.00	90075.16	89695.73	1903377.29	21.13	0.30	27357.20	97831.51	1.09	20.04
62.00	89316.30	88923.01	1813681.56	20.31	0.27	23920.29	70474.31	0.79	19.52
63.00	88529.73	88105.06	1724758.54	19.48	0.26	22554.89	46554.02	0.53	18.96
64.00	87680.39	87203.77	1636653.49	18.67	0.21	17963.98	23999.13	0.27	18.39
65.00	86727.15	86216.43	1549449.72	17.87	0.07	6035.15	6035.15	0.07	17.80

1999

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of be-longing to labour force	Expected period outside the labour force
16.00	99262.05	99244.25	6253958.98	63.00	0.11	11016.11	2995077.91	30.17	32.83
17.00	99226.45	99204.96	6154714.73	62.03	0.23	22618.73	2984061.80	30.07	31.95
18.00	99183.48	99157.63	6055509.77	61.05	0.30	29846.45	2961443.06	29.86	31.20
19.00	99131.78	99105.10	5956352.14	60.09	0.37	36272.47	2931596.62	29.57	30.51
20.00	99078.42	99051.05	5857247.04	59.12	0.47	46157.79	2895324.15	29.22	29.89
21.00	99023.68	98995.76	5758195.99	58.15	0.54	53952.69	2849166.36	28.77	29.38
22.00	98967.84	98940.26	5659200.23	57.18	0.61	60353.56	2795213.67	28.24	28.94
23.00	98912.68	98883.91	5560259.97	56.21	0.68	66845.52	2734860.11	27.65	28.56
24.00	98855.14	98826.99	5461376.06	55.25	0.74	72835.49	2668014.59	26.99	28.26
25.00	98798.84	98771.21	5362549.06	54.28	0.80	78523.11	2595179.10	26.27	28.01
26.00	98743.58	98713.96	5263777.85	53.31	0.81	79859.60	2516655.98	25.49	27.82
27.00	98684.35	98652.40	5165063.89	52.34	0.85	83953.19	2436796.38	24.69	27.65
28.00	98620.46	98587.08	5066411.49	51.37	0.85	83601.85	2352843.19	23.86	27.52
29.00	98553.71	98512.78	4967824.40	50.41	0.83	82061.15	2269241.34	23.03	27.38
30.00	98471.86	98432.51	4869311.62	49.45	0.84	82486.44	2187180.20	22.21	27.24
31.00	98393.15	98351.35	4770879.11	48.49	0.83	82025.02	2104693.76	21.39	27.10
32.00	98309.54	98263.69	4672527.77	47.53	0.82	80772.75	2022668.73	20.57	26.95
33.00	98217.84	98164.41	4574264.08	46.57	0.82	80200.32	1941895.98	19.77	26.80
34.00	98110.99	98060.51	4476099.66	45.62	0.81	79625.13	1861695.65	18.98	26.65
35.00	98010.03	97956.86	4378039.15	44.67	0.80	77973.66	1782070.52	18.18	26.49
36.00	97903.69	97846.57	4280082.29	43.72	0.81	79060.03	1704096.86	17.41	26.31
37.00	97789.45	97729.54	4182235.72	42.77	0.80	78476.82	1625036.83	16.62	26.15
38.00	97669.63	97606.62	4084506.18	41.82	0.80	77597.27	1546560.01	15.83	25.99
39.00	97543.61	97470.97	3986899.56	40.87	0.80	77781.83	1468962.74	15.06	25.81
40.00	97398.32	97325.69	3889428.59	39.93	0.79	76595.32	1391180.91	14.28	25.65
41.00	97253.07	97176.75	3792102.90	38.99	0.78	76186.57	1314585.59	13.52	25.47
42.00	97100.44	97021.80	3694926.15	38.05	0.80	77326.37	1238399.02	12.75	25.30
43.00	96943.16	96844.50	3597904.35	37.11	0.78	75732.40	1161072.65	11.98	25.14
44.00	96745.84	96646.95	3501059.85	36.19	0.77	74514.80	1085340.25	11.22	24.97
45.00	96548.05	96437.38	3404412.90	35.26	0.74	71652.98	1010825.45	10.47	24.79
46.00	96326.72	96215.23	3307975.52	34.34	0.74	71295.49	939172.47	9.75	24.59
47.00	96103.75	95978.05	3211760.28	33.42	0.71	68432.35	867876.99	9.03	24.39
48.00	95852.35	95714.23	3115782.24	32.51	0.71	68435.67	799444.64	8.34	24.17
49.00	95576.11	95433.79	3020068.01	31.60	0.68	65372.15	731008.96	7.65	23.95
50.00	95291.48	95137.30	2924634.22	30.69	0.67	64122.54	665636.82	6.99	23.71
51.00	94983.11	94816.31	2829496.92	29.79	0.67	63432.11	601514.28	6.33	23.46
52.00	94649.51	94465.80	2734680.61	28.89	0.63	59513.45	538082.17	5.68	23.21
53.00	94282.10	94084.55	2640214.81	28.00	0.64	59837.77	478568.71	5.08	22.93
54.00	93887.00	93679.00	2546130.26	27.12	0.58	54052.78	418730.94	4.46	22.66
55.00	93470.99	93238.57	2452451.26	26.24	0.56	52586.56	364678.16	3.90	22.34
56.00	93006.15	92760.19	2359212.69	25.37	0.54	50461.55	312091.60	3.36	22.01
57.00	92514.24	92246.12	2266452.49	24.50	0.51	47137.77	261630.06	2.83	21.67
58.00	91978.01	91692.67	2174206.37	23.64	0.47	43278.94	214492.29	2.33	21.31
59.00	91407.32	91085.99	2082513.70	22.78	0.43	39258.06	171213.35	1.87	20.91
60.00	90764.66	90419.39	1991427.71	21.94	0.36	32641.40	131955.29	1.45	20.49
61.00	90074.13	89698.53	1901008.32	21.10	0.31	27537.45	99313.89	1.10	20.00
62.00	89322.94	88936.99	1811309.79	20.28	0.26	23568.30	71776.44	0.80	19.47
63.00	88551.05	88110.51	1722372.79	19.45	0.26	22644.40	48208.13	0.54	18.91
64.00	87669.97	87208.29	1634262.29	18.64	0.22	18836.99	25563.73	0.29	18.35
65.00	86746.62	86240.26	1547053.99	17.83	0.08	6726.74	6726.74	0.08	17.76

2000

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of be-longing to labour force	Expected period outside the labour force
16.00	99279.03	99260.77	6293722.73	63.39	0.09	9330.51	3046748.56	30.69	32.71
17.00	99242.50	99218.01	6194461.97	62.42	0.21	20835.78	3037418.05	30.61	31.81
18.00	99193.52	99169.80	6095243.96	61.45	0.32	31635.17	3016582.27	30.41	31.04
19.00	99146.09	99120.57	5996074.15	60.48	0.39	38756.14	2984947.10	30.11	30.37
20.00	99095.04	99066.34	5896953.59	59.51	0.47	47056.51	2946190.96	29.73	29.78

21.00	99037.64	99009.66	5797887.25	58.54	0.55	54752.34	2899134.45	29.27	29.27
22.00	98981.68	98954.51	5698877.59	57.58	0.63	62242.39	2844382.11	28.74	28.84
23.00	98927.34	98900.49	5599923.08	56.61	0.69	68340.24	2782139.72	28.12	28.48
24.00	98873.64	98842.69	5501022.59	55.64	0.75	73835.49	2713799.48	27.45	28.19
25.00	98811.74	98781.62	5402179.90	54.67	0.79	78235.04	2639963.99	26.72	27.95
26.00	98751.50	98719.81	5303398.28	53.70	0.83	81542.56	2561728.95	25.94	27.76
27.00	98688.11	98657.47	5204678.47	52.74	0.83	82181.68	2480186.39	25.13	27.61
28.00	98626.84	98592.35	5106021.00	51.77	0.84	83310.54	2398004.71	24.31	27.46
29.00	98557.87	98525.20	5007428.65	50.81	0.84	83253.80	2314694.18	23.49	27.32
30.00	98492.54	98454.79	4908903.45	49.84	0.86	84474.21	2231440.38	22.66	27.18
31.00	98417.03	98377.34	4810448.66	48.88	0.84	82341.83	2146966.17	21.81	27.06
32.00	98337.64	98294.63	4712071.32	47.92	0.83	81682.84	2064624.34	21.00	26.92
33.00	98251.62	98205.68	4613776.69	46.96	0.83	81216.10	1982941.51	20.18	26.78
34.00	98159.74	98113.12	4515571.01	46.00	0.81	79667.85	1901725.41	19.37	26.63
35.00	98066.50	98012.75	4417457.89	45.05	0.81	79782.38	1822057.55	18.58	26.47
36.00	97959.00	97900.40	4319445.14	44.09	0.80	78320.32	1742275.17	17.79	26.31
37.00	97841.80	97781.67	4221544.74	43.15	0.80	78714.24	1663954.85	17.01	26.14
38.00	97721.53	97657.45	4123763.07	42.20	0.81	79395.51	1585240.61	16.22	25.98
39.00	97593.37	97527.92	4026105.62	41.25	0.81	79192.67	1505845.10	15.43	25.82
40.00	97462.47	97382.96	3928577.70	40.31	0.81	78588.05	1426652.43	14.64	25.67
41.00	97303.45	97227.95	3831194.74	39.37	0.79	77004.53	1348064.38	13.85	25.52
42.00	97152.44	97066.86	3733966.80	38.43	0.79	76974.02	1271059.85	13.08	25.35
43.00	96981.28	96891.27	3636899.94	37.50	0.79	76931.66	1194085.83	12.31	25.19
44.00	96801.25	96700.95	3540008.67	36.57	0.77	74363.03	1117154.17	11.54	25.03
45.00	96600.65	96495.67	3443307.72	35.64	0.77	73915.68	1042791.14	10.79	24.85
46.00	96390.69	96281.18	3346812.05	34.72	0.77	73847.66	968875.45	10.05	24.67
47.00	96171.66	96043.53	3250530.87	33.80	0.73	69727.60	895027.79	9.31	24.49
48.00	95915.39	95787.46	3154487.35	32.89	0.72	69350.12	825300.19	8.60	24.28
49.00	95659.54	95516.37	3058699.88	31.97	0.72	68389.72	755950.06	7.90	24.07
50.00	95373.21	95215.47	2963183.51	31.07	0.69	65317.81	687560.34	7.21	23.86
51.00	95057.73	94892.98	2867968.04	30.17	0.67	63483.41	622242.53	6.55	23.62
52.00	94728.23	94545.63	2773075.06	29.27	0.66	62116.48	558759.12	5.90	23.38
53.00	94363.02	94176.84	2678529.43	28.39	0.62	58012.93	496642.65	5.26	23.12
54.00	93990.66	93784.99	2584352.59	27.50	0.61	56833.71	438629.72	4.67	22.83
55.00	93579.33	93357.83	2490567.60	26.61	0.58	54427.61	381796.01	4.08	22.53
56.00	93136.33	92891.75	2397209.77	25.74	0.55	50718.90	327368.40	3.51	22.22
57.00	92647.18	92389.89	2304318.02	24.87	0.52	47765.57	276649.50	2.99	21.89
58.00	92132.59	91868.92	2211928.13	24.01	0.47	43362.13	228883.93	2.48	21.52
59.00	91605.24	91305.39	2120059.22	23.14	0.45	41178.73	185521.80	2.03	21.12
60.00	91005.55	90674.83	2028753.83	22.29	0.41	37630.06	144343.07	1.59	20.71
61.00	90344.12	89982.31	1938078.99	21.45	0.37	33293.45	106713.01	1.18	20.27
62.00	89620.49	89234.70	1848096.69	20.62	0.31	27484.29	73419.56	0.82	19.80
63.00	88848.91	88427.21	1758861.98	19.80	0.25	21841.52	45935.27	0.52	19.28
64.00	88005.50	87554.46	1670434.78	18.98	0.20	17598.45	24093.75	0.27	18.71
65.00	87103.42	86604.04	1582880.32	18.17	0.07	6495.30	6495.30	0.07	18.10

2001

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99339.95	99323.43	6322948.90	63.65	0.09	8839.79	3012330.98	30.32	33.33
17.00	99306.92	99284.95	6223625.46	62.67	0.19	18864.14	3003491.20	30.24	32.43
18.00	99262.98	99240.43	6124340.51	61.70	0.32	31260.73	2984627.06	30.07	31.63
19.00	99217.87	99192.46	6025100.09	60.73	0.40	39577.79	2953366.32	29.77	30.96
20.00	99167.04	99139.04	5925907.63	59.76	0.48	47785.02	2913788.53	29.38	30.37
21.00	99111.04	99086.26	5826768.59	58.79	0.54	54002.01	2866003.51	28.92	29.87
22.00	99061.48	99034.04	5727682.33	57.82	0.63	62094.34	2812001.50	28.39	29.43
23.00	99006.60	98981.21	5628648.29	56.85	0.67	66218.43	2749907.16	27.77	29.08
24.00	98955.82	98930.84	5529667.07	55.88	0.71	70636.62	2683688.72	27.12	28.76
25.00	98905.86	98878.78	5430736.23	54.91	0.79	77817.60	2613052.10	26.42	28.49
26.00	98851.71	98824.33	5331857.45	53.94	0.81	80047.71	2535234.50	25.65	28.29
27.00	98796.96	98768.61	5233033.11	52.97	0.83	81681.64	2455186.79	24.85	28.12
28.00	98740.26	98707.84	5134264.50	52.00	0.84	83309.42	2373505.15	24.04	27.96
29.00	98675.42	98643.37	5035556.67	51.03	0.85	83748.22	2290195.74	23.21	27.82
30.00	98611.32	98574.75	4936913.30	50.06	0.83	81422.74	2206447.52	22.38	27.69
31.00	98538.17	98500.51	4838338.55	49.10	0.82	81262.92	2125024.77	21.57	27.54
32.00	98462.85	98420.27	4739838.04	48.14	0.81	79523.58	2043761.85	20.76	27.38
33.00	98377.69	98331.46	4641417.77	47.18	0.82	80238.47	1964238.27	19.97	27.21
34.00	98285.24	98237.76	4543086.31	46.22	0.80	78393.74	1883999.80	19.17	27.05
35.00	98190.29	98140.16	4444848.54	45.27	0.79	77628.86	1805606.07	18.39	26.88
36.00	98090.02	98034.65	4346708.39	44.31	0.78	76565.06	1727977.20	17.62	26.70
37.00	97979.28	97921.19	4248673.74	43.36	0.80	78239.03	1651412.15	16.85	26.51
38.00	97863.11	97797.25	4150752.55	42.41	0.78	75792.87	1573173.11	16.08	26.34
39.00	97731.39	97661.16	4052955.30	41.47	0.78	76566.35	1497380.24	15.32	26.15
40.00	97590.93	97519.67	3955294.14	40.53	0.79	76650.46	1420813.90	14.56	25.97
41.00	97448.41	97372.51	3857774.48	39.59	0.78	75658.44	1344163.44	13.79	25.79
42.00	97296.62	97220.07	3760401.96	38.65	0.78	75637.21	1268505.00	13.04	25.61
43.00	97143.52	97056.33	3663181.90	37.71	0.77	74636.31	1192867.78	12.28	25.43
44.00	96969.13	96878.16	3566125.57	36.78	0.76	73724.28	1118231.47	11.53	25.24
45.00	96787.19	96685.81	3469247.41	35.84	0.75	72224.30	1044507.19	10.79	25.05
46.00	96584.42	96475.16	3372561.61	34.92	0.76	73128.17	972282.89	10.07	24.85
47.00	96365.89	96244.31	3276086.45	34.00	0.73	70643.32	899154.73	9.33	24.67
48.00	96122.72	95992.64	3179842.14	33.08	0.71	67962.79	828511.40	8.62	24.46
49.00	95862.55	95717.50	3083849.51	32.17	0.71	67672.27	760548.62	7.93	24.24

50.00	95572.45	95418.05	2988132.01	31.27	0.71	67460.56	692876.35	7.25	24.02
51.00	95263.64	95104.19	2892713.96	30.37	0.67	63719.81	625415.79	6.57	23.80
52.00	94944.74	94764.80	2797609.77	29.47	0.65	61312.83	561695.98	5.92	23.55
53.00	94584.86	94386.60	2702844.97	28.58	0.63	59086.01	500383.15	5.29	23.29
54.00	94188.33	93986.51	2608458.37	27.69	0.58	54982.11	441297.14	4.69	23.01
55.00	93784.68	93551.75	2514471.86	26.81	0.58	54540.67	386315.03	4.12	22.69
56.00	93318.82	93083.44	2420920.11	25.94	0.53	49148.06	331774.36	3.56	22.39
57.00	92848.06	92576.72	2327836.67	25.07	0.52	48325.05	282626.31	3.04	22.03
58.00	92305.38	92025.21	2235259.95	24.22	0.50	46104.63	234301.26	2.54	21.68
59.00	91745.03	91465.34	2143234.75	23.36	0.44	40702.08	188196.63	2.05	21.31
60.00	91185.65	90858.87	2051769.41	22.50	0.41	36979.56	147494.56	1.62	20.88
61.00	90532.09	90183.45	1960910.54	21.66	0.35	31564.21	110515.00	1.22	20.44
62.00	89834.81	89461.91	1870727.09	20.82	0.34	30506.51	78950.79	0.88	19.95
63.00	89089.00	88675.01	1781265.18	19.99	0.26	22789.48	48444.28	0.54	19.45
64.00	88261.01	87808.19	1692590.17	19.18	0.21	18790.95	25654.80	0.29	18.89
65.00	87355.37	86884.16	1604781.98	18.37	0.08	6863.85	6863.85	0.08	18.29

2002

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99327.86	99311.47	6332641.34	63.75	0.11	11321.51	3081589.41	31.02	32.73
17.00	99295.09	99277.44	6233329.87	62.78	0.19	18862.71	3070267.90	30.92	31.86
18.00	99259.79	99238.35	6134052.43	61.80	0.29	29176.08	3051405.19	30.74	31.06
19.00	99216.91	99192.90	6034814.08	60.82	0.40	40173.12	3022229.11	30.46	30.36
20.00	99168.88	99140.86	5935621.18	59.85	0.49	48182.46	2982055.99	30.07	29.78
21.00	99112.83	99086.28	5836480.33	58.89	0.55	54398.37	2933873.53	29.60	29.29
22.00	99059.73	99029.83	5737394.05	57.92	0.61	60705.28	2879475.16	29.07	28.85
23.00	98999.93	98973.82	5638364.22	56.95	0.70	69479.62	2818769.88	28.47	28.48
24.00	98947.72	98922.95	5539390.39	55.98	0.74	73598.67	2749290.25	27.79	28.20
25.00	98898.18	98873.72	5440467.45	55.01	0.78	76824.88	2675691.58	27.06	27.96
26.00	98849.27	98822.01	5341593.72	54.04	0.84	82714.03	2598866.70	26.29	27.75
27.00	98794.76	98765.56	5242771.71	53.07	0.84	83160.60	2516152.67	25.47	27.60
28.00	98736.35	98706.91	5144006.15	52.10	0.85	84394.41	2432992.07	24.64	27.46
29.00	98677.47	98645.03	5045299.24	51.13	0.87	85426.60	2348597.66	23.80	27.33
30.00	98612.60	98577.78	4946654.21	50.16	0.84	83101.07	2263171.06	22.95	27.21
31.00	98542.96	98507.46	4848076.43	49.20	0.86	84519.40	2180070.00	22.12	27.07
32.00	98471.95	98433.31	4749568.97	48.23	0.82	81207.48	2095550.60	21.28	26.95
33.00	98394.67	98352.30	4651135.66	47.27	0.84	82320.87	2014343.12	20.47	26.80
34.00	98309.93	98264.94	4552783.36	46.31	0.83	81952.96	1932022.24	19.65	26.66
35.00	98219.94	98173.27	4454518.43	45.35	0.82	80502.08	1850069.29	18.84	26.52
36.00	98126.59	98074.54	4356345.16	44.40	0.81	79048.08	1769567.21	18.03	26.36
37.00	98022.49	97965.65	4258270.62	43.44	0.80	77980.66	1690519.13	17.25	26.20
38.00	97908.81	97851.33	4160304.97	42.49	0.82	79846.69	1612538.47	16.47	26.02
39.00	97793.86	97726.94	4062453.64	41.54	0.81	78767.92	1532691.78	15.67	25.87
40.00	97660.03	97590.02	3964726.69	40.60	0.82	79926.22	1453923.87	14.89	25.71
41.00	97520.00	97442.41	3867136.68	39.65	0.79	77369.27	1373997.65	14.09	25.57
42.00	97364.82	97287.70	3769694.27	38.72	0.80	77441.01	1296628.37	13.32	25.40
43.00	97210.58	97123.44	3672406.57	37.78	0.80	78087.25	1219187.37	12.54	25.24
44.00	97036.30	96941.54	3575283.13	36.84	0.77	75032.75	1141100.12	11.76	25.09
45.00	96846.78	96744.59	3478341.60	35.92	0.78	75170.55	1066067.37	11.01	24.91
46.00	96642.41	96529.15	3381597.00	34.99	0.78	75099.68	990896.82	10.25	24.74
47.00	96415.90	96292.36	3285067.85	34.07	0.75	71930.39	915797.14	9.50	24.57
48.00	96168.82	96034.47	3188775.49	33.16	0.72	69528.96	843866.75	8.77	24.38
49.00	95900.12	95757.79	3092741.02	32.25	0.73	69807.43	774337.79	8.07	24.18
50.00	95615.45	95465.06	2996983.24	31.34	0.70	66443.68	704530.37	7.37	23.98
51.00	95314.67	95153.88	2901518.17	30.44	0.70	66607.71	638086.68	6.69	23.75
52.00	94993.08	94824.12	2806364.30	29.54	0.65	61730.50	571478.97	6.02	23.53
53.00	94655.16	94465.88	2711540.17	28.65	0.65	61024.96	509748.47	5.39	23.26
54.00	94276.60	94062.54	2617074.29	27.76	0.60	56155.33	448723.51	4.76	23.00
55.00	93848.47	93646.33	2523011.76	26.88	0.58	54408.52	392568.17	4.18	22.70
56.00	93444.18	93202.04	2429365.43	26.00	0.54	50422.30	338159.66	3.62	22.38
57.00	92959.89	92707.38	2336163.39	25.13	0.54	50154.69	287737.35	3.10	22.04
58.00	92454.87	92182.47	2243456.01	24.27	0.50	46367.78	237582.66	2.57	21.70
59.00	91910.07	91611.60	2151273.54	23.41	0.48	44065.18	191214.88	2.08	21.33
60.00	91313.12	90990.74	2059661.94	22.56	0.41	37761.16	147149.70	1.61	20.94
61.00	90668.35	90327.44	1968671.20	21.71	0.37	33150.17	109388.54	1.21	20.51
62.00	89986.54	89609.64	1878343.76	20.87	0.31	27958.21	76238.37	0.85	20.03
63.00	89232.75	88821.20	1788734.11	20.05	0.26	23448.80	48280.16	0.54	19.50
64.00	88409.64	87969.36	1699912.92	19.23	0.21	18737.47	24831.37	0.28	18.95
65.00	87529.08	87055.60	1611943.56	18.42	0.07	6093.89	6093.89	0.07	18.35

2003

Age	Number alive at age x	Years lived in the age interval	Years lived at age x and	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age	Expected period of belonging	Expected period outside the

		x	beyond				x and beyond	to labour force	labour force
16.00	99335.71	99317.81	6329847.61	63.72	0.07	7150.88	3138531.63	31.60	32.13
17.00	99299.90	99278.97	6230529.80	62.74	0.20	19458.68	3131380.75	31.53	31.21
18.00	99258.04	99233.65	6131250.83	61.77	0.29	28480.06	3111922.07	31.35	30.42
19.00	99209.25	99182.98	6032017.18	60.80	0.43	43144.60	3083442.01	31.08	29.72
20.00	99156.71	99128.34	5932834.20	59.83	0.50	49167.66	3040297.42	30.66	29.17
21.00	99099.97	99073.49	5833705.86	58.87	0.59	58354.28	2991129.76	30.18	28.68
22.00	99047.01	99021.55	5734632.38	57.90	0.63	62383.58	2932775.48	29.61	28.29
23.00	98996.09	98969.52	5635610.82	56.93	0.69	68387.94	2870391.90	29.00	27.93
24.00	98942.95	98917.70	5536641.30	55.96	0.75	73792.61	2802003.96	28.32	27.64
25.00	98892.46	98864.78	5437723.60	54.99	0.81	80377.07	2728211.35	27.59	27.40
26.00	98837.10	98811.68	5338858.82	54.02	0.85	83891.12	2647834.28	26.79	27.23
27.00	98786.26	98759.02	5240047.14	53.04	0.87	86117.87	2563943.17	25.95	27.09
28.00	98731.79	98705.03	5141288.11	52.07	0.87	85675.97	2477825.30	25.10	26.98
29.00	98678.27	98646.97	5042583.08	51.10	0.88	86316.10	2392149.33	24.24	26.86
30.00	98615.66	98583.22	4943936.12	50.13	0.88	86654.65	2305833.24	23.38	26.75
31.00	98550.78	98514.52	4845352.90	49.17	0.87	85313.58	2219178.59	22.52	26.65
32.00	98478.27	98440.34	4746838.37	48.20	0.85	83969.61	2133865.01	21.67	26.53
33.00	98402.40	98361.75	4648398.04	47.24	0.83	82033.70	2049895.40	20.83	26.41
34.00	98321.10	98275.57	4550036.28	46.28	0.85	83927.34	1967861.70	20.01	26.26
35.00	98230.03	98184.41	4451760.71	45.32	0.85	83064.02	1883934.36	19.18	26.14
36.00	98138.80	98089.20	4353576.30	44.36	0.83	81021.68	1800870.35	18.35	26.01
37.00	98039.59	97988.30	4255487.10	43.41	0.82	80840.35	1719848.67	17.54	25.86
38.00	97937.01	97873.58	4157498.80	42.45	0.81	79375.48	1639008.32	16.74	25.72
39.00	97810.16	97748.73	4059625.22	41.51	0.82	79762.96	1559632.85	15.95	25.56
40.00	97687.30	97618.66	3961876.49	40.56	0.83	80730.63	1479869.88	15.15	25.41
41.00	97550.02	97471.29	3864257.83	39.61	0.81	79244.16	1399139.25	14.34	25.27
42.00	97392.57	97309.39	3766786.54	38.68	0.81	79015.22	1319895.09	13.55	25.12
43.00	97226.21	97137.97	3669477.15	37.74	0.80	78098.93	1240879.87	12.76	24.98
44.00	97049.73	96953.12	3572339.17	36.81	0.80	77271.63	1162780.94	11.98	24.83
45.00	96856.50	96751.77	3475386.06	35.88	0.78	75079.37	1085509.30	11.21	24.67
46.00	96647.03	96536.47	3378634.29	34.96	0.78	74815.76	1010429.93	10.45	24.50
47.00	96425.90	96305.55	3282097.83	34.04	0.77	73962.67	935614.17	9.70	24.33
48.00	96185.21	96044.85	3185792.27	33.12	0.75	71745.51	861651.51	8.96	24.16
49.00	95904.50	95767.11	3089747.42	32.22	0.74	70580.36	789906.00	8.24	23.98
50.00	95629.71	95481.78	2993980.31	31.31	0.72	69128.81	719325.64	7.52	23.79
51.00	95333.84	95174.36	2898498.54	30.40	0.68	64528.21	650196.84	6.82	23.58
52.00	95014.87	94836.21	2803324.18	29.50	0.69	65531.82	585668.62	6.16	23.34
53.00	94657.54	94471.54	2708487.97	28.61	0.65	61217.56	520136.81	5.49	23.12
54.00	94285.55	94082.02	2614016.43	27.72	0.63	59083.51	458919.25	4.87	22.86
55.00	93878.49	93651.87	2519934.41	26.84	0.57	53568.87	399835.74	4.26	22.58
56.00	93425.25	93200.42	2426282.54	25.97	0.57	53497.04	346266.87	3.71	22.26
57.00	92975.59	92713.74	2333082.11	25.09	0.52	48582.00	292769.82	3.15	21.94
58.00	92451.88	92177.30	2240368.38	24.23	0.51	47102.60	244187.83	2.64	21.59
59.00	91902.71	91602.59	2148191.08	23.37	0.49	45068.47	197085.23	2.14	21.23
60.00	91302.46	90973.37	2056588.50	22.53	0.40	36116.43	152016.75	1.66	20.86
61.00	90644.28	90313.72	1965615.12	21.68	0.36	32332.31	115900.33	1.28	20.41
62.00	89983.15	89622.22	1875301.41	20.84	0.36	31995.13	83568.01	0.93	19.91
63.00	89261.29	88843.36	1785679.18	20.01	0.29	25764.57	51572.88	0.58	19.43
64.00	88425.42	87998.43	1696835.83	19.19	0.22	19711.65	25808.31	0.29	18.90
65.00	87571.43	87095.15	1608837.40	18.37	0.07	6096.66	6096.66	0.07	18.30

2004

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99368.97	99353.90	6379965.65	64.20	0.10	9438.62	3184644.52	32.05	32.16
17.00	99338.83	99318.13	6280611.74	63.22	0.17	17082.72	3175205.90	31.96	31.26
18.00	99297.42	99273.63	6181293.62	62.25	0.32	31271.19	3158123.18	31.80	30.45
19.00	99249.85	99227.52	6082019.98	61.28	0.42	41278.65	3126851.99	31.50	29.78
20.00	99205.20	99182.09	5982792.46	60.31	0.48	47706.59	3085573.34	31.10	29.20
21.00	99158.99	99136.11	5883610.37	59.34	0.59	58985.99	3037866.75	30.64	28.70
22.00	99113.24	99089.56	5784474.25	58.36	0.64	63813.68	2978880.76	30.06	28.31
23.00	99065.88	99040.45	5685384.69	57.39	0.72	71012.00	2915067.09	29.43	27.96
24.00	99015.02	98992.00	5586344.25	56.42	0.74	73551.06	2844055.08	28.72	27.70
25.00	98968.98	98943.82	5487352.25	55.45	0.82	81034.99	2770504.03	27.99	27.45
26.00	98918.67	98894.95	5388408.42	54.47	0.83	82577.28	2689469.04	27.19	27.28
27.00	98871.23	98845.14	5289513.48	53.50	0.87	86291.81	2606891.76	26.37	27.13
28.00	98819.06	98790.08	5190668.33	52.53	0.88	86441.32	2520599.95	25.51	27.02
29.00	98761.11	98733.84	5091878.25	51.56	0.89	87675.65	2434158.63	24.65	26.91
30.00	98706.58	98678.31	4993144.41	50.59	0.88	86540.88	2346482.97	23.77	26.81
31.00	98650.05	98616.73	4894466.10	49.61	0.89	87374.42	2259942.09	22.91	26.71
32.00	98583.41	98551.34	4795849.37	48.65	0.86	84458.50	2172567.67	22.04	26.61
33.00	98519.27	98482.86	4697298.03	47.68	0.85	83907.39	2088109.18	21.19	26.48
34.00	98446.44	98408.11	4598815.18	46.71	0.85	83450.08	2004201.78	20.36	26.36
35.00	98369.78	98326.57	4500407.06	45.75	0.86	84167.54	1920751.70	19.53	26.22
36.00	98283.35	98237.33	4402080.49	44.79	0.84	82322.88	1836584.16	18.69	26.10
37.00	98191.30	98135.75	4303843.17	43.83	0.84	82041.48	1754261.28	17.87	25.97
38.00	98080.19	98025.97	4205707.42	42.88	0.82	80675.37	1672219.80	17.05	25.83
39.00	97971.75	97906.85	4107681.45	41.93	0.84	82143.85	1591544.42	16.24	25.68
40.00	97841.96	97780.23	4009774.60	40.98	0.82	80179.79	1509400.57	15.43	25.56
41.00	97718.50	97649.27	3911994.37	40.03	0.82	80560.65	1429220.79	14.63	25.41

42.00	97580.04	97504.96	3814345.10	39.09	0.80	78101.47	1348660.14	13.82	25.27
43.00	97429.88	97349.51	3716840.14	38.15	0.83	80508.05	1270558.67	13.04	25.11
44.00	97269.14	97175.37	3619490.63	37.21	0.80	77545.95	1190050.62	12.23	24.98
45.00	97081.60	96977.18	3522315.26	36.28	0.79	76805.93	1112504.67	11.46	24.82
46.00	96872.76	96764.59	3425338.08	35.36	0.79	76153.74	1035698.75	10.69	24.67
47.00	96656.43	96536.37	3328573.49	34.44	0.78	75491.45	959545.01	9.93	24.51
48.00	96416.32	96281.63	3232037.11	33.52	0.76	72981.47	884053.57	9.17	24.35
49.00	96146.93	96011.41	3135755.48	32.61	0.75	71816.54	811072.10	8.44	24.18
50.00	95875.89	95722.69	3039744.07	31.70	0.74	70930.52	739255.56	7.71	23.99
51.00	95569.49	95400.84	2944021.38	30.81	0.71	68020.80	668325.04	6.99	23.81
52.00	95232.18	95059.61	2848620.54	29.91	0.69	65401.01	600304.25	6.30	23.61
53.00	94887.05	94700.54	2753560.93	29.02	0.68	64869.87	534903.23	5.64	23.38
54.00	94514.04	94320.43	2658860.38	28.13	0.64	60648.04	470033.36	4.97	23.16
55.00	94126.82	93915.94	2564539.95	27.25	0.59	55879.98	409385.32	4.35	22.90
56.00	93705.06	93465.91	2470624.01	26.37	0.59	54957.95	353505.34	3.77	22.59
57.00	93226.76	92990.16	2377158.10	25.50	0.54	49935.72	298547.38	3.20	22.30
58.00	92753.56	92493.50	2284167.94	24.63	0.52	47911.63	248611.67	2.68	21.95
59.00	92233.43	91945.52	2191674.45	23.76	0.48	44133.85	200700.04	2.18	21.59
60.00	91657.61	91345.55	2099728.92	22.91	0.45	40740.12	156566.19	1.71	21.20
61.00	91033.49	90698.42	2008383.37	22.06	0.35	32197.94	115826.07	1.27	20.79
62.00	90363.34	90036.99	1917684.96	21.22	0.32	28721.80	83628.13	0.93	20.30
63.00	89710.63	89341.49	1827647.97	20.37	0.31	28053.23	54906.33	0.61	19.76
64.00	88972.36	88547.99	1738306.48	19.54	0.23	20277.49	26853.11	0.30	19.24
65.00	88123.63	87674.86	1649758.48	18.72	0.07	6575.61	6575.61	0.07	18.65

2005

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99399.92	99384.48	6381881.54	64.20	0.12	11429.22	3237639.99	32.57	31.63
17.00	99369.04	99349.91	6282497.05	63.22	0.19	18876.48	3226210.78	32.47	30.76
18.00	99330.78	99309.16	6183147.14	62.25	0.34	33467.19	3207334.29	32.29	29.96
19.00	99287.55	99262.29	6083837.98	61.27	0.45	44370.24	3173867.10	31.97	29.31
20.00	99237.03	99213.66	5984575.69	60.31	0.54	53178.52	3129496.86	31.54	28.77
21.00	99190.29	99166.21	5885362.03	59.33	0.64	63168.87	3076318.34	31.01	28.32
22.00	99142.12	99119.16	5786195.82	58.36	0.68	67202.79	3013149.47	30.39	27.97
23.00	99096.20	99073.14	5687076.66	57.39	0.73	72026.17	2945946.67	29.73	27.66
24.00	99050.09	99027.21	5588003.52	56.42	0.77	76349.98	2873920.50	29.01	27.40
25.00	99004.33	98980.07	5488976.31	55.44	0.82	81262.64	2797570.52	28.26	27.18
26.00	98955.81	98933.77	5389996.24	54.47	0.84	82807.57	2716307.88	27.45	27.02
27.00	98911.74	98887.58	5291062.47	53.49	0.87	86229.97	2633500.31	26.62	26.87
28.00	98863.41	98841.94	5192174.89	52.52	0.86	85399.43	2547270.35	25.77	26.75
29.00	98820.46	98795.96	5093332.95	51.54	0.89	87829.61	2461870.91	24.91	26.63
30.00	98771.45	98745.69	4994536.99	50.57	0.86	84921.30	2374041.31	24.04	26.53
31.00	98719.93	98689.45	4895791.30	49.59	0.85	84083.41	2289120.01	23.19	26.40
32.00	98658.97	98624.19	4797101.85	48.62	0.87	85605.80	2205036.60	22.35	26.27
33.00	98589.42	98555.36	4698477.66	47.66	0.87	85447.50	2119430.80	21.50	26.16
34.00	98521.31	98484.00	4599922.29	46.69	0.86	84499.27	2033983.30	20.65	26.04
35.00	98446.70	98402.99	4501438.29	45.72	0.83	81576.08	1949484.03	19.80	25.92
36.00	98359.28	98315.09	4403035.30	44.76	0.86	84550.97	1867907.95	18.99	25.77
37.00	98270.89	98221.33	4304720.22	43.80	0.83	81229.04	1783356.97	18.15	25.66
38.00	98171.76	98115.99	4206498.89	42.85	0.84	82613.66	1702127.94	17.34	25.51
39.00	98060.22	98002.22	4108382.90	41.90	0.83	81439.84	1619514.27	16.52	25.38
40.00	97944.22	97881.42	4010380.68	40.95	0.83	81143.70	1538074.43	15.70	25.24
41.00	97818.62	97749.20	3912499.26	40.00	0.81	78981.35	1456930.73	14.89	25.10
42.00	97679.77	97605.12	3814750.07	39.05	0.82	80329.01	1377949.38	14.11	24.95
43.00	97530.46	97452.62	3717144.95	38.11	0.81	78839.17	1297620.37	13.30	24.81
44.00	97374.78	97284.27	3619692.33	37.17	0.81	78702.97	1218781.20	12.52	24.66
45.00	97193.76	97097.68	3522408.06	36.24	0.81	78357.83	1140078.23	11.73	24.51
46.00	97001.61	96895.55	3425310.37	35.31	0.80	77807.13	1061720.40	10.95	24.37
47.00	96789.49	96673.89	3328414.82	34.39	0.78	75308.96	983913.27	10.17	24.22
48.00	96558.29	96436.52	3231740.93	33.47	0.77	74063.25	908604.31	9.41	24.06
49.00	96314.75	96180.02	3135304.41	32.55	0.77	74250.97	834541.06	8.66	23.89
50.00	96045.28	95895.49	3039124.40	31.64	0.72	68948.85	760290.09	7.92	23.73
51.00	95745.69	95590.47	2943228.91	30.74	0.74	70736.95	691341.24	7.22	23.52
52.00	95435.26	95262.18	2847638.44	29.84	0.70	66778.79	620604.29	6.50	23.34
53.00	95089.10	94909.19	2752376.26	28.95	0.67	63304.43	553825.50	5.82	23.12
54.00	94729.28	94525.50	2657467.08	28.05	0.68	63804.71	490521.07	5.18	22.88
55.00	94321.72	94110.67	2562941.57	27.17	0.65	60983.71	426716.36	4.52	22.65
56.00	93899.62	93676.23	2468830.90	26.29	0.59	54894.27	365732.64	3.89	22.40
57.00	93452.83	93201.78	2375154.68	25.42	0.56	52565.81	310838.38	3.33	22.09
58.00	92950.74	92695.98	2281952.89	24.55	0.54	50333.92	258272.57	2.78	21.77
59.00	92441.23	92141.97	2189256.91	23.68	0.52	48282.39	207938.65	2.25	21.43
60.00	91842.71	91529.57	2097114.94	22.83	0.43	39723.84	159656.26	1.74	21.10
61.00	91216.44	90885.58	2005585.37	21.99	0.39	35445.38	119932.42	1.31	20.67
62.00	90554.72	90193.46	1914699.78	21.14	0.34	30846.16	84487.05	0.93	20.21
63.00	89832.20	89469.39	1824506.32	20.31	0.29	25767.19	53640.88	0.60	19.71
64.00	89106.59	88707.00	1735036.93	19.47	0.23	20846.15	27873.70	0.31	19.16
65.00	88307.41	87844.38	1646329.93	18.64	0.08	7027.55	7027.55	0.08	18.56

2006

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99433.07	99418.77	6437652.37	64.74	0.09	8649.43	3287336.15	33.06	31.68
17.00	99404.47	99388.01	6338233.60	63.76	0.21	20473.93	3278686.72	32.98	30.78
18.00	99371.55	99351.41	6238845.59	62.78	0.37	37058.08	3258212.79	32.79	29.99
19.00	99331.27	99311.94	6139494.18	61.81	0.46	45584.18	3221154.71	32.43	29.38
20.00	99292.60	99270.90	6040182.24	60.83	0.56	55988.79	3175570.53	31.98	28.85
21.00	99249.19	99227.53	5940911.35	59.86	0.60	59536.52	3119581.74	31.43	28.43
22.00	99205.86	99183.65	5841683.82	58.88	0.68	67544.07	3060045.23	30.85	28.04
23.00	99161.44	99141.87	5742500.17	57.91	0.74	73563.27	2992501.16	30.18	27.73
24.00	99122.31	99101.93	5643358.30	56.93	0.78	77299.51	2918937.89	29.45	27.49
25.00	99081.55	99060.48	5544256.37	55.96	0.84	83607.04	2841638.39	28.68	27.28
26.00	99039.40	99016.13	5445195.89	54.98	0.85	84658.79	2758031.34	27.85	27.13
27.00	98992.85	98970.42	5346179.76	54.01	0.87	86005.29	2673372.55	27.01	27.00
28.00	98947.98	98926.82	5247209.35	53.03	0.87	85868.48	2587367.26	26.15	26.88
29.00	98905.65	98883.35	5148282.53	52.05	0.89	88006.19	2501498.79	25.29	26.76
30.00	98861.06	98835.28	5049399.18	51.08	0.88	87469.22	2413492.60	24.41	26.66
31.00	98809.50	98782.01	4950563.90	50.10	0.89	87915.99	2326023.38	23.54	26.56
32.00	98754.52	98725.48	4851781.89	49.13	0.85	84212.84	2238107.39	22.66	26.47
33.00	98696.45	98667.64	4753056.40	48.16	0.87	85544.85	2153894.55	21.82	26.33
34.00	98638.84	98605.48	4654388.76	47.19	0.87	85983.98	2068349.71	20.97	26.22
35.00	98572.12	98535.96	4555783.28	46.22	0.86	84346.78	1982365.73	20.11	26.11
36.00	98499.79	98458.62	4457247.32	45.25	0.85	83788.29	1898018.95	19.27	25.98
37.00	98417.45	98372.33	4358788.70	44.29	0.86	84796.95	1814230.66	18.43	25.85
38.00	98327.21	98276.52	4260416.37	43.33	0.84	82355.72	1729433.71	17.59	25.74
39.00	98225.82	98165.88	4162139.85	42.37	0.85	83146.50	1647077.99	16.77	25.60
40.00	98105.94	98045.50	4063973.97	41.42	0.84	82162.13	1563931.48	15.94	25.48
41.00	97985.07	97922.90	3965928.46	40.47	0.83	81080.16	1481769.35	15.12	25.35
42.00	97860.74	97791.04	3868005.56	39.53	0.82	79993.07	1400689.19	14.31	25.21
43.00	97721.33	97640.14	3770214.52	38.58	0.83	81236.59	1320696.12	13.51	25.07
44.00	97558.94	97468.23	3672574.39	37.64	0.81	79046.74	1239459.53	12.70	24.94
45.00	97377.52	97286.02	3575106.16	36.71	0.82	79385.39	1160412.79	11.92	24.80
46.00	97194.51	97090.94	3477820.14	35.78	0.80	77284.39	1081027.40	11.12	24.66
47.00	96987.37	96878.43	3380729.20	34.86	0.79	76921.47	1003743.01	10.35	24.51
48.00	96769.48	96645.38	3283850.77	33.93	0.79	76253.21	926821.54	9.58	24.36
49.00	96521.29	96396.76	3187205.39	33.02	0.78	75382.27	850568.34	8.81	24.21
50.00	96272.23	96127.48	3090808.63	32.10	0.77	73633.65	775186.07	8.05	24.05
51.00	95982.73	95824.60	2994681.14	31.20	0.75	71676.80	701552.42	7.31	23.89
52.00	95666.48	95496.52	2898856.54	30.30	0.72	68375.51	629875.61	6.58	23.72
53.00	95326.56	95141.51	2803360.02	29.41	0.71	67645.61	561500.11	5.89	23.52
54.00	94956.46	94759.62	2708218.51	28.52	0.65	61593.75	493854.49	5.20	23.32
55.00	94562.78	94356.66	2613458.89	27.64	0.63	59539.05	432260.74	4.57	23.07
56.00	94150.54	93924.62	2519102.23	26.76	0.65	61426.70	372721.69	3.96	22.80
57.00	93698.70	93454.97	2425177.61	25.88	0.59	54764.61	311294.98	3.32	22.56
58.00	93211.23	92946.79	2331722.64	25.02	0.54	49726.53	256530.37	2.75	22.26
59.00	92682.35	92409.18	2238775.85	24.16	0.50	46019.77	206803.84	2.23	21.92
60.00	92136.02	91821.91	2146366.67	23.30	0.45	41044.40	160784.07	1.75	21.55
61.00	91507.81	91196.65	2054544.75	22.45	0.38	35110.71	119739.67	1.31	21.14
62.00	90885.50	90534.30	1963348.10	21.60	0.34	30872.20	84628.96	0.93	20.67
63.00	90183.10	89814.20	1872813.80	20.77	0.28	25507.23	53756.76	0.60	20.17
64.00	89445.31	89056.85	1782999.60	19.93	0.23	20661.19	28249.53	0.32	19.62
65.00	88668.39	88236.52	1693942.75	19.10	0.09	7588.34	7588.34	0.09	19.02

2007

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99442.97	99429.53	6441015.70	64.77	0.10	9744.09	3322451.34	33.41	31.36
17.00	99416.09	99398.29	6341586.17	63.79	0.22	22265.22	3312707.25	33.32	30.47
18.00	99380.48	99361.04	6242187.88	62.81	0.33	32689.78	3290442.03	33.11	29.70
19.00	99341.60	99321.89	6142826.84	61.84	0.47	47177.90	3257752.25	32.79	29.04
20.00	99302.18	99281.38	6043504.95	60.86	0.54	53810.51	3210574.35	32.33	28.53
21.00	99260.58	99243.85	5944223.57	59.89	0.62	61828.92	3156763.84	31.80	28.08
22.00	99227.11	99207.12	5844979.72	58.91	0.67	66667.19	3094934.92	31.19	27.71
23.00	99187.13	99167.99	5745772.60	57.93	0.74	73285.14	3028267.74	30.53	27.40
24.00	99148.84	99128.52	5646604.61	56.95	0.76	75734.19	2954982.59	29.80	27.15
25.00	99108.21	99088.13	5547476.09	55.97	0.83	81846.79	2879248.40	29.05	26.92
26.00	99068.04	99045.87	5448387.96	55.00	0.85	84288.04	2797401.61	28.24	26.76
27.00	99023.70	99003.21	5349342.09	54.02	0.88	87617.84	2713113.57	27.40	26.62
28.00	98982.72	98960.92	5250338.88	53.04	0.86	85007.43	2625495.73	26.52	26.52
29.00	98939.11	98915.65	5151377.96	52.07	0.90	88529.51	2540488.30	25.68	26.39
30.00	98892.19	98867.27	5052462.31	51.09	0.89	87596.40	2451958.79	24.79	26.30
31.00	98842.35	98817.01	4953595.04	50.12	0.89	88342.41	2364362.39	23.92	26.20
32.00	98791.67	98767.35	4854778.03	49.14	0.88	86915.27	2276019.99	23.04	26.10
33.00	98743.04	98714.64	4756010.68	48.17	0.87	86276.60	2189104.72	22.17	26.00

34.00	98686.24	98654.66	4657296.04	47.19	0.87	86125.52	2102828.12	21.31	25.88
35.00	98623.07	98588.99	4558641.38	46.22	0.87	86166.78	2016702.60	20.45	25.77
36.00	98554.91	98515.86	4460052.39	45.25	0.87	85413.25	1930535.83	19.59	25.67
37.00	98476.81	98435.71	4361536.52	44.29	0.85	84162.53	1845122.57	18.74	25.55
38.00	98394.60	98347.36	4263100.82	43.33	0.84	82316.74	1760960.04	17.90	25.43
39.00	98300.13	98244.88	4164753.46	42.37	0.84	82329.21	1678643.30	17.08	25.29
40.00	98189.64	98130.52	4066508.57	41.41	0.83	81153.94	1596314.09	16.26	25.16
41.00	98071.40	98006.24	3968378.05	40.46	0.83	81443.19	1515160.15	15.45	25.01
42.00	97941.08	97863.61	3870371.81	39.52	0.84	82303.30	1433716.96	14.64	24.88
43.00	97786.15	97708.99	3772508.20	38.58	0.83	81489.30	1351413.66	13.82	24.76
44.00	97631.84	97549.41	3674799.21	37.64	0.84	81551.31	1269924.36	13.01	24.63
45.00	97466.98	97372.66	3577249.79	36.70	0.83	80429.82	1188373.06	12.19	24.51
46.00	97278.34	97182.04	3479877.13	35.77	0.81	79106.18	1107943.24	11.39	24.38
47.00	97085.74	96974.46	3382695.09	34.84	0.81	78355.37	1028837.06	10.60	24.25
48.00	96863.19	96745.96	3285720.63	33.92	0.78	75752.08	950481.69	9.81	24.11
49.00	96628.72	96501.05	3188974.67	33.00	0.78	75753.32	874729.61	9.05	23.95
50.00	96373.38	96231.35	3092473.63	32.09	0.77	73809.45	798976.29	8.29	23.80
51.00	96089.33	95939.15	2996242.27	31.18	0.78	74352.84	725166.84	7.55	23.64
52.00	95788.97	95621.56	2900303.12	30.28	0.74	70855.58	650813.99	6.79	23.48
53.00	95454.15	95269.70	2804681.55	29.38	0.71	68117.83	579958.41	6.08	23.31
54.00	95085.24	94885.10	2709411.86	28.49	0.69	65660.49	511840.58	5.38	23.11
55.00	94684.95	94479.39	2614526.76	27.61	0.64	60844.73	446180.09	4.71	22.90
56.00	94273.83	94053.41	2520047.37	26.73	0.63	59441.75	385335.37	4.09	22.64
57.00	93832.99	93596.21	2425993.96	25.85	0.61	57374.48	325893.61	3.47	22.38
58.00	93359.44	93095.22	2332397.75	24.98	0.58	53622.85	268519.14	2.88	22.11
59.00	92831.01	92554.48	2239302.53	24.12	0.51	47110.23	214896.29	2.31	21.81
60.00	92277.95	91973.68	2146748.05	23.26	0.46	42031.97	167786.06	1.82	21.45
61.00	91669.41	91342.13	2054774.37	22.42	0.39	35258.06	125754.08	1.37	21.04
62.00	91014.85	90678.46	1963432.23	21.57	0.35	31828.14	90496.02	0.99	20.58
63.00	90342.06	89976.20	1872753.78	20.73	0.30	27082.84	58667.88	0.65	20.08
64.00	89610.34	89196.86	1782777.58	19.89	0.26	22923.59	31585.05	0.35	19.54
65.00	88783.38	88382.19	1693580.72	19.08	0.10	8661.45	8661.45	0.10	18.98

2008

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99465.65	99452.24	6470313.61	65.05	0.08	7657.82	3377727.90	33.96	31.09
17.00	99438.82	99421.52	6370861.38	64.07	0.18	17796.45	3370070.08	33.89	30.18
18.00	99404.21	99387.20	6271439.86	63.09	0.34	34288.58	3352273.63	33.72	29.37
19.00	99370.19	99349.92	6172052.66	62.11	0.46	45402.91	3317985.05	33.39	28.72
20.00	99329.64	99310.90	6072702.75	61.14	0.56	55216.86	3272582.14	32.95	28.19
21.00	99292.15	99275.38	5973391.85	60.16	0.64	63635.52	3217365.28	32.40	27.76
22.00	99258.61	99241.92	5874116.47	59.18	0.67	66789.81	3153729.76	31.77	27.41
23.00	99225.23	99207.62	5774874.55	58.20	0.76	74901.76	3086939.95	31.11	27.09
24.00	99190.02	99167.86	5675666.93	57.22	0.78	77152.60	3012038.19	30.37	26.85
25.00	99145.70	99126.26	5576499.07	56.25	0.84	82869.56	2934885.60	29.60	26.64
26.00	99106.82	99089.12	5477372.81	55.27	0.87	86009.35	2852016.04	28.78	26.49
27.00	99071.41	99050.44	5378283.69	54.29	0.87	86570.08	2766006.69	27.92	26.37
28.00	99029.46	99008.10	5279233.25	53.31	0.89	87919.19	2679436.61	27.06	26.25
29.00	98986.73	98965.39	5180225.16	52.33	0.89	87782.31	2591517.42	26.18	26.15
30.00	98944.06	98922.26	5081259.76	51.35	0.90	88931.11	2503735.11	25.30	26.05
31.00	98900.46	98877.95	4982337.50	50.38	0.90	89089.03	2414804.00	24.42	25.96
32.00	98855.44	98831.45	4883459.55	49.40	0.89	87762.33	2325714.97	23.53	25.87
33.00	98807.47	98780.85	4784628.10	48.42	0.88	86630.80	2237952.63	22.65	25.77
34.00	98754.23	98724.42	4685847.25	47.45	0.88	87371.11	2151321.83	21.78	25.66
35.00	98694.62	98661.01	4587122.83	46.48	0.88	86525.70	2063950.72	20.91	25.57
36.00	98627.39	98588.86	4488461.82	45.51	0.88	86265.25	1977425.02	20.05	25.46
37.00	98550.32	98511.29	4389872.96	44.54	0.86	85212.27	1891159.76	19.19	25.35
38.00	98472.27	98430.41	4291361.67	43.58	0.85	83468.99	1805947.49	18.34	25.24
39.00	98388.56	98340.19	4192931.26	42.62	0.87	85260.95	1722478.50	17.51	25.11
40.00	98291.82	98236.15	4094591.06	41.66	0.87	85858.39	1637217.56	16.66	25.00
41.00	98180.47	98120.25	3996354.92	40.70	0.85	83402.21	1551359.17	15.80	24.90
42.00	98060.03	97994.58	3898234.67	39.75	0.85	83197.40	1467956.96	14.97	24.78
43.00	97929.14	97855.34	3800240.09	38.81	0.85	83079.18	1384759.56	14.14	24.67
44.00	97781.54	97698.83	3702384.75	37.86	0.84	81676.22	1301680.37	13.31	24.55
45.00	97616.13	97523.80	3604685.92	36.93	0.83	81432.38	1220004.15	12.50	24.43
46.00	97431.48	97332.85	3507162.11	36.00	0.83	80883.60	1138571.77	11.69	24.31
47.00	97234.22	97124.06	3409829.26	35.07	0.81	78864.74	1057688.17	10.88	24.19
48.00	97013.90	96897.69	3312705.20	34.15	0.81	78487.13	978823.43	10.09	24.06
49.00	96781.48	96648.02	3215807.51	33.23	0.81	78284.89	900336.31	9.30	23.92
50.00	96514.56	96367.09	3119159.50	32.32	0.80	76804.57	822051.41	8.52	23.80
51.00	96219.63	96069.43	3022792.40	31.42	0.75	71763.86	745246.84	7.75	23.67
52.00	95919.22	95750.55	2926722.97	30.51	0.75	71717.16	673482.98	7.02	23.49
53.00	95581.87	95402.90	2830972.43	29.62	0.74	70216.53	601765.82	6.30	23.32
54.00	95223.93	95033.48	2735569.53	28.73	0.70	66618.47	531549.28	5.58	23.15
55.00	94843.02	94637.12	2640536.05	27.84	0.68	64826.43	464930.82	4.90	22.94
56.00	94431.21	94216.94	2545898.93	26.96	0.66	61900.53	400104.39	4.24	22.72
57.00	94002.67	93765.98	2451681.99	26.08	0.62	58134.91	338203.86	3.60	22.48
58.00	93529.30	93270.60	2357916.01	25.21	0.58	53910.41	280068.95	2.99	22.22
59.00	93011.90	92746.47	2264645.41	24.35	0.55	51010.56	226158.55	2.43	21.92
60.00	92481.03	92173.26	2171898.95	23.48	0.44	40556.23	175147.99	1.89	21.59
61.00	91865.48	91560.49	2079725.69	22.64	0.42	38272.29	134591.76	1.47	21.17
62.00	91255.51	90909.51	1988165.20	21.79	0.35	32000.15	96319.47	1.06	20.73

63.00	90563.51	90208.27	1897255.69	20.95	0.34	30219.77	64319.33	0.71	20.24
64.00	89853.03	89477.65	1807047.42	20.11	0.28	25053.74	34099.56	0.38	19.73
65.00	89102.27	88684.45	1717569.77	19.28	0.10	9045.81	9045.81	0.10	19.17

2009

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99497.66	99488.36	6501861.52	65.35	0.05	4974.42	3364058.33	33.81	31.54
17.00	99479.07	99466.27	6402373.15	64.36	0.12	12234.35	3359083.91	33.77	30.59
18.00	99453.47	99435.49	6302906.88	63.38	0.27	26847.58	3346849.56	33.65	29.72
19.00	99417.51	99403.28	6203471.40	62.40	0.40	39363.70	3320001.98	33.39	29.00
20.00	99389.05	99374.53	6104068.12	61.42	0.50	49786.64	3280638.28	33.01	28.41
21.00	99360.02	99343.53	6004693.58	60.43	0.57	57122.53	3230851.64	32.52	27.92
22.00	99327.04	99311.29	5905350.05	59.45	0.68	67630.99	3173729.11	31.95	27.50
23.00	99295.54	99278.24	5806038.76	58.47	0.70	69991.16	3106098.12	31.28	27.19
24.00	99260.94	99244.28	5706760.52	57.49	0.79	78303.73	3036106.96	30.59	26.91
25.00	99227.61	99207.61	5607516.24	56.51	0.82	81151.82	2957803.22	29.81	26.70
26.00	99187.60	99167.35	5508308.63	55.53	0.86	85779.76	2876651.40	29.00	26.53
27.00	99147.10	99128.73	5409141.29	54.56	0.86	85746.35	2790871.64	28.15	26.41
28.00	99110.36	99090.24	5310012.56	53.58	0.89	88388.49	2705125.30	27.29	26.28
29.00	99070.12	99049.88	5210922.32	52.60	0.91	89838.24	2616736.80	26.41	26.19
30.00	99029.64	99010.10	5111872.44	51.62	0.89	88118.99	2526898.56	25.52	26.10
31.00	98990.56	98968.40	5012862.34	50.64	0.88	87587.04	2438779.57	24.64	26.00
32.00	98946.24	98924.43	4913893.94	49.66	0.90	88834.14	2351192.54	23.76	25.90
33.00	98902.62	98877.79	4814969.51	48.68	0.88	87407.96	2262358.40	22.87	25.81
34.00	98852.96	98824.31	4716091.72	47.71	0.88	87459.51	2174950.44	22.00	25.71
35.00	98795.66	98766.09	4617267.42	46.74	0.88	86914.16	2087490.92	21.13	25.61
36.00	98736.52	98702.42	4518501.33	45.76	0.87	85673.70	2000576.77	20.26	25.50
37.00	98668.33	98633.98	4419798.91	44.79	0.88	86403.37	1914903.06	19.41	25.39
38.00	98599.63	98557.47	4321164.93	43.83	0.88	86927.69	1828499.70	18.54	25.28
39.00	98515.31	98473.79	4222607.46	42.86	0.86	84785.94	1741572.01	17.68	25.18
40.00	98432.28	98381.05	4124133.66	41.90	0.87	85394.75	1656786.07	16.83	25.07
41.00	98329.82	98270.58	4025752.61	40.94	0.86	84414.43	1571391.32	15.98	24.96
42.00	98211.34	98149.42	3927482.03	39.99	0.86	84604.80	1486976.89	15.14	24.85
43.00	98087.50	98021.10	3829332.61	39.04	0.86	84396.16	1402372.10	14.30	24.74
44.00	97954.70	97882.79	3731311.52	38.09	0.86	84472.85	1317975.93	13.45	24.64
45.00	97810.89	97722.84	3633428.73	37.15	0.83	81012.24	1233503.08	12.61	24.54
46.00	97634.80	97540.27	3535705.88	36.21	0.84	81543.67	1152490.85	11.80	24.41
47.00	97445.74	97339.51	3438165.61	35.28	0.84	81765.19	1070947.18	10.99	24.29
48.00	97233.27	97124.13	3340826.11	34.36	0.82	79350.42	989181.99	10.17	24.19
49.00	97014.99	96888.23	3243701.97	33.44	0.81	78188.80	909831.58	9.38	24.06
50.00	96761.47	96623.76	3146813.74	32.52	0.81	78361.87	831642.78	8.59	23.93
51.00	96486.05	96341.56	3050189.99	31.61	0.79	76206.17	753280.91	7.81	23.81
52.00	96197.06	96044.30	2953848.43	30.71	0.74	71553.00	677074.74	7.04	23.67
53.00	95891.53	95718.05	2857804.13	29.80	0.74	70927.08	605521.73	6.31	23.49
54.00	95544.57	95345.10	2762086.08	28.91	0.71	67695.02	534594.66	5.60	23.31
55.00	95145.64	94947.49	2666740.98	28.03	0.69	65893.56	466899.64	4.91	23.12
56.00	94749.34	94530.83	2571793.49	27.14	0.66	62484.88	401006.08	4.23	22.91
57.00	94312.32	94075.58	2477262.66	26.27	0.63	59173.54	338521.20	3.59	22.68
58.00	93838.83	93588.86	2383187.08	25.40	0.59	55685.37	279347.66	2.98	22.42
59.00	93338.89	93071.41	2289598.22	24.53	0.56	52026.92	223662.29	2.40	22.13
60.00	92803.93	92522.37	2196526.81	23.67	0.45	41635.07	171635.37	1.85	21.82
61.00	92240.81	91931.07	2104004.44	22.81	0.39	35761.19	130000.30	1.41	21.40
62.00	91621.32	91288.07	2012073.37	21.96	0.37	34141.74	94239.12	1.03	20.93
63.00	90954.81	90600.18	1920785.31	21.12	0.31	28086.06	60097.38	0.66	20.46
64.00	90245.55	89871.32	1830185.13	20.28	0.27	23905.77	32011.33	0.35	19.93
65.00	89497.09	89072.04	1740313.80	19.45	0.09	8105.56	8105.56	0.09	19.35

2010

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99516.32	99506.84	6536486.20	65.68	0.04	4278.79	3393907.01	34.10	31.58
17.00	99497.36	99486.82	6436979.36	64.69	0.10	9849.20	3389628.22	34.07	30.63
18.00	99476.29	99463.20	6337492.54	63.71	0.24	23871.17	3379779.02	33.98	29.73
19.00	99450.11	99435.60	6238029.34	62.73	0.37	36393.43	3355907.86	33.74	28.98
20.00	99421.10	99405.27	6138593.74	61.74	0.48	48012.75	3319514.43	33.39	28.35
21.00	99389.45	99376.67	6039188.46	60.76	0.58	57837.22	3271501.68	32.92	27.85
22.00	99363.90	99347.84	5939811.79	59.78	0.65	64476.75	3213664.45	32.34	27.44
23.00	99331.78	99316.79	5840463.95	58.80	0.71	70713.56	3149187.71	31.70	27.09
24.00	99301.81	99286.81	5741147.15	57.82	0.76	75259.40	3078474.15	31.00	26.81
25.00	99271.81	99254.97	5641860.34	56.83	0.81	80793.55	3003214.75	30.25	26.58

26.00	99238.13	99224.38	5542605.37	55.85	0.83	82653.91	2922421.20	29.45	26.40
27.00	99210.63	99194.77	5443380.99	54.87	0.90	89572.88	2839767.29	28.62	26.24
28.00	99178.92	99162.46	5344186.22	53.88	0.89	88353.75	2750194.41	27.73	26.15
29.00	99146.00	99127.61	5245023.76	52.90	0.90	89512.23	2661840.66	26.85	26.05
30.00	99109.22	99090.04	5145896.14	51.92	0.91	90072.84	2572328.42	25.95	25.97
31.00	99070.85	99052.08	5046806.11	50.94	0.90	88849.72	2482255.58	25.06	25.89
32.00	99033.31	99011.59	4947754.02	49.96	0.89	88021.30	2393405.86	24.17	25.79
33.00	98989.86	98966.87	4848742.44	48.98	0.90	88971.22	2305384.56	23.29	25.69
34.00	98943.88	98919.00	4749775.57	48.00	0.91	89917.37	2216413.34	22.40	25.60
35.00	98894.12	98866.91	4650856.56	47.03	0.89	87991.55	2126495.97	21.50	25.53
36.00	98839.70	98809.36	4551989.65	46.05	0.89	88137.95	2038504.42	20.62	25.43
37.00	98779.02	98745.75	4453180.29	45.08	0.90	88377.45	1950366.47	19.74	25.34
38.00	98712.49	98676.11	4354434.54	44.11	0.88	86834.98	1861989.02	18.86	25.25
39.00	98639.74	98598.80	4255758.42	43.14	0.89	87654.33	1775154.04	18.00	25.15
40.00	98557.87	98510.51	4157159.62	42.18	0.87	85901.17	1687499.70	17.12	25.06
41.00	98463.16	98411.96	4058649.11	41.22	0.87	85323.17	1601598.54	16.27	24.95
42.00	98360.77	98300.97	3960237.14	40.26	0.86	84833.74	1516275.36	15.42	24.85
43.00	98241.18	98176.03	3861936.17	39.31	0.87	85805.85	1431441.62	14.57	24.74
44.00	98110.88	98036.49	3763760.14	38.36	0.85	83134.94	1345635.77	13.72	24.65
45.00	97962.10	97882.45	3665723.65	37.42	0.84	82319.14	1262500.83	12.89	24.53
46.00	97802.79	97710.27	3567841.20	36.48	0.84	82467.46	1180181.69	12.07	24.41
47.00	97617.74	97516.92	3470130.94	35.55	0.84	81816.70	1097714.23	11.25	24.30
48.00	97416.10	97309.67	3372614.02	34.62	0.81	79307.38	1015897.53	10.43	24.19
49.00	97203.24	97083.30	3275304.35	33.70	0.84	81647.05	936590.15	9.64	24.06
50.00	96963.36	96831.79	3178221.05	32.78	0.82	79208.40	854943.09	8.82	23.96
51.00	96700.22	96554.25	3081389.26	31.87	0.82	78981.38	775734.69	8.02	23.84
52.00	96408.28	96245.37	2984835.01	30.96	0.76	73146.48	696753.32	7.23	23.73
53.00	96082.45	95914.61	2888589.65	30.06	0.76	72511.44	623606.84	6.49	23.57
54.00	95746.76	95561.73	2792675.04	29.17	0.74	70715.68	551095.40	5.76	23.41
55.00	95376.70	95179.15	2697113.31	28.28	0.72	68433.81	480379.72	5.04	23.24
56.00	94981.60	94765.74	2601934.16	27.39	0.66	63019.22	411945.91	4.34	23.06
57.00	94549.88	94311.38	2507168.41	26.52	0.66	62245.51	348926.69	3.69	22.83
58.00	94072.87	93827.76	2412857.04	25.65	0.59	55452.21	286681.18	3.05	22.60
59.00	93582.66	93309.02	2319029.27	24.78	0.59	55425.56	231228.97	2.47	22.31
60.00	93035.37	92755.39	2225720.26	23.92	0.50	46841.47	175803.41	1.89	22.03
61.00	92475.40	92186.59	2132964.87	23.07	0.39	36044.96	128961.94	1.39	21.67
62.00	91897.79	91565.63	2040778.28	22.21	0.36	32872.06	92916.99	1.01	21.20
63.00	91233.48	90895.01	1949212.64	21.37	0.32	29177.30	60044.92	0.66	20.71
64.00	90556.54	90182.76	1858317.63	20.52	0.26	23267.15	30867.63	0.34	20.18
65.00	89808.99	89417.32	1768134.87	19.69	0.08	7600.47	7600.47	0.08	19.60

2011

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99521.34	99514.22	6551701.71	65.83	0.03	3184.45	3408487.63	34.25	31.58
17.00	99507.10	99495.86	6452187.49	64.84	0.09	8855.13	3405303.18	34.22	30.62
18.00	99484.63	99471.69	6352691.62	63.86	0.23	22977.96	3396448.05	34.14	29.72
19.00	99458.75	99443.55	6253219.93	62.87	0.31	31225.27	3373470.09	33.92	28.95
20.00	99428.34	99413.67	6153776.39	61.89	0.41	40958.43	3342244.81	33.61	28.28
21.00	99399.00	99383.03	6054362.71	60.91	0.56	55256.96	3301286.38	33.21	27.70
22.00	99367.06	99353.22	5954979.68	59.93	0.65	64281.53	3246029.42	32.67	27.26
23.00	99339.38	99326.38	5855626.46	58.95	0.68	67740.59	3181747.88	32.03	26.92
24.00	99313.39	99298.96	5756300.08	57.96	0.78	77850.38	3114007.29	31.36	26.61
25.00	99284.53	99268.89	5657001.12	56.98	0.80	79911.46	3036156.91	30.58	26.40
26.00	99253.26	99238.95	5557732.23	56.00	0.85	84551.59	2956245.45	29.78	26.21
27.00	99224.65	99208.45	5458493.28	55.01	0.88	87105.02	2871693.86	28.94	26.07
28.00	99192.24	99175.77	5359284.83	54.03	0.89	88663.14	2784588.84	28.07	25.96
29.00	99159.30	99141.95	5260109.06	53.05	0.91	90120.03	2695925.70	27.19	25.86
30.00	99124.61	99104.34	5160967.11	52.07	0.90	89193.90	2605805.67	26.29	25.78
31.00	99084.07	99063.65	5061862.77	51.09	0.90	89355.41	2516611.77	25.40	25.69
32.00	99043.23	99023.58	4962799.12	50.11	0.90	88923.18	2427256.36	24.51	25.60
33.00	99003.94	98981.42	4863775.54	49.13	0.91	90172.07	2338333.18	23.62	25.51
34.00	98958.89	98935.66	4764794.12	48.15	0.90	88646.35	2248161.11	22.72	25.43
35.00	98912.43	98886.54	4665858.46	47.17	0.90	89492.32	2159514.75	21.83	25.34
36.00	98860.65	98832.13	4566971.92	46.20	0.90	89146.58	2070022.44	20.94	25.26
37.00	98803.60	98771.33	4468139.79	45.22	0.90	88696.66	1980875.86	20.05	25.17
38.00	98739.06	98704.88	4369368.46	44.25	0.90	88340.86	1892179.20	19.16	25.09
39.00	98670.69	98630.80	4270663.59	43.28	0.89	87386.89	1803838.34	18.28	25.00
40.00	98590.91	98546.53	4172032.78	42.32	0.88	87213.68	1716451.45	17.41	24.91
41.00	98502.15	98454.37	4073486.25	41.35	0.88	86639.85	1629237.77	16.54	24.81
42.00	98406.59	98351.43	3975031.88	40.39	0.88	86352.56	1542597.92	15.68	24.72
43.00	98296.27	98230.32	3876680.45	39.44	0.86	84772.77	1456245.36	14.81	24.62
44.00	98164.38	98095.96	3778450.13	38.49	0.86	83970.14	1371472.59	13.97	24.52
45.00	98027.54	97953.15	3680354.17	37.54	0.85	83554.04	1287502.46	13.13	24.41
46.00	97878.76	97794.72	3582401.02	36.60	0.86	83907.87	1203948.42	12.30	24.30
47.00	97710.67	97612.61	3484606.30	35.66	0.86	83654.01	1120040.55	11.46	24.20
48.00	97514.55	97409.24	3386993.69	34.73	0.83	80947.08	1036386.55	10.63	24.11
49.00	97303.94	97185.99	3289584.45	33.81	0.83	80955.93	955439.46	9.82	23.99
50.00	97068.05	96938.07	3192398.46	32.89	0.80	78035.15	874483.53	9.01	23.88
51.00	96808.09	96663.64	3095460.39	31.98	0.81	78104.22	796448.39	8.23	23.75
52.00	96519.18	96355.83	2998796.75	31.07	0.78	74675.77	718344.17	7.44	23.63
53.00	96192.48	96026.35	2902440.92	30.17	0.78	75092.60	643668.40	6.69	23.48
54.00	95860.21	95678.85	2806414.57	29.28	0.75	72141.85	568575.80	5.93	23.34

55.00	95497.49	95311.18	2710735.72	28.39	0.73	69863.09	496433.94	5.20	23.19
56.00	95124.86	94902.60	2615424.55	27.49	0.70	66526.72	426570.85	4.48	23.01
57.00	94680.34	94450.12	2520521.95	26.62	0.66	62431.53	360044.13	3.80	22.82
58.00	94219.91	93975.73	2426071.83	25.75	0.65	61084.22	297612.60	3.16	22.59
59.00	93731.55	93464.82	2332096.10	24.88	0.57	53368.41	236528.38	2.52	22.36
60.00	93198.10	92910.97	2238631.28	24.02	0.50	46548.39	183159.96	1.97	22.05
61.00	92623.83	92330.78	2145720.31	23.17	0.43	40071.56	136611.57	1.47	21.69
62.00	92037.73	91716.39	2053389.54	22.31	0.39	35677.67	96540.01	1.05	21.26
63.00	91395.04	91036.61	1961673.15	21.46	0.34	30497.27	60862.34	0.67	20.80
64.00	90678.18	90325.80	1870636.54	20.63	0.24	21497.54	30365.07	0.33	20.29
65.00	89973.42	89571.01	1780310.73	19.79	0.10	8867.53	8867.53	0.10	19.69

2012

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99536.31	99528.00	6556688.30	65.87	0.02	2090.09	3423134.06	34.39	31.48
17.00	99519.69	99510.27	6457160.30	64.88	0.07	7164.74	3421043.97	34.38	30.51
18.00	99500.85	99491.61	6357650.03	63.90	0.21	21092.22	3413879.23	34.31	29.59
19.00	99482.37	99469.61	6258158.42	62.91	0.29	29244.07	3392787.01	34.10	28.80
20.00	99456.86	99443.34	6158688.81	61.92	0.42	41467.87	3363542.94	33.82	28.10
21.00	99429.83	99416.92	6059245.46	60.94	0.49	48813.71	3322075.07	33.41	27.53
22.00	99404.01	99390.26	5959828.55	59.96	0.62	61423.18	3273261.36	32.93	27.03
23.00	99376.51	99362.64	5860438.29	58.97	0.70	69255.76	3211838.18	32.32	26.65
24.00	99348.76	99335.25	5761075.65	57.99	0.77	76885.48	3142582.43	31.63	26.36
25.00	99321.73	99306.95	5661740.41	57.00	0.82	81332.39	3065696.95	30.87	26.14
26.00	99292.16	99276.68	5562433.46	56.02	0.86	85874.33	2984364.56	30.06	25.96
27.00	99261.20	99245.09	5463156.78	55.04	0.88	87534.17	2898490.23	29.20	25.84
28.00	99228.98	99215.81	5363911.69	54.06	0.90	89095.80	2810956.06	28.33	25.73
29.00	99202.64	99184.40	5264695.88	53.07	0.90	89166.77	2721860.26	27.44	25.63
30.00	99166.15	99147.82	5165511.48	52.09	0.91	90224.52	2632693.49	26.55	25.54
31.00	99129.48	99108.98	5066363.66	51.11	0.91	89990.96	2542468.97	25.65	25.46
32.00	99088.48	99067.70	4967254.68	50.13	0.91	90448.81	2452478.01	24.75	25.38
33.00	99046.92	99025.62	4868186.97	49.15	0.90	89123.06	2362029.20	23.85	25.30
34.00	99004.31	98980.83	4769161.36	48.17	0.90	89577.65	2272906.15	22.96	25.21
35.00	98957.36	98932.29	4670180.52	47.19	0.91	89632.66	2183328.49	22.06	25.13
36.00	98907.23	98880.10	4571248.23	46.22	0.91	89980.89	2093695.83	21.17	25.05
37.00	98852.98	98821.35	4472368.13	45.24	0.91	89828.61	2003714.94	20.27	24.97
38.00	98789.72	98756.66	4373546.78	44.27	0.90	88880.99	1913886.34	19.37	24.90
39.00	98723.60	98686.28	4274790.12	43.30	0.90	89212.40	1825005.34	18.49	24.81
40.00	98648.97	98606.46	4176103.84	42.33	0.89	87661.14	1735792.94	17.60	24.74
41.00	98563.95	98518.86	4077497.38	41.37	0.86	85218.81	1648131.80	16.72	24.65
42.00	98473.77	98424.30	3978978.52	40.41	0.89	87499.20	1562912.99	15.87	24.54
43.00	98374.83	98314.42	3880554.22	39.45	0.87	85926.81	1475413.78	15.00	24.45
44.00	98254.01	98184.41	3782239.80	38.49	0.88	86009.54	1389486.98	14.14	24.35
45.00	98114.80	98040.47	3684055.39	37.55	0.86	84805.01	1303477.44	13.29	24.26
46.00	97966.15	97885.63	3586014.92	36.60	0.86	84279.52	1218672.43	12.44	24.16
47.00	97805.10	97712.42	3488129.29	35.66	0.85	83544.12	1134392.90	11.60	24.07
48.00	97619.73	97511.32	3390416.87	34.73	0.86	83762.23	1050848.79	10.76	23.97
49.00	97402.91	97287.92	3292905.55	33.81	0.85	82986.60	967086.56	9.93	23.88
50.00	97172.93	97055.92	3195617.63	32.89	0.82	79974.08	884099.97	9.10	23.79
51.00	96938.90	96800.57	3098561.71	31.96	0.83	80344.47	804125.89	8.30	23.67
52.00	96662.23	96512.10	3001761.15	31.05	0.79	76341.07	723781.42	7.49	23.57
53.00	96361.97	96194.84	2905249.05	30.15	0.78	75224.37	647440.35	6.72	23.43
54.00	96027.71	95852.08	2809054.21	29.25	0.74	71409.80	572215.98	5.96	23.29
55.00	95676.45	95490.71	2713202.13	28.36	0.73	69803.71	500806.18	5.23	23.12
56.00	95304.98	95100.01	2617711.41	27.47	0.71	67901.41	431002.47	4.52	22.94
57.00	94895.04	94663.71	2522611.40	26.58	0.68	64465.99	363101.06	3.83	22.76
58.00	94432.38	94191.25	2427947.69	25.71	0.65	61601.08	298635.08	3.16	22.55
59.00	93950.11	93689.73	2333756.44	24.84	0.61	56963.35	237034.00	2.52	22.32
60.00	93429.34	93148.47	2240066.72	23.98	0.52	48344.05	180070.65	1.93	22.05
61.00	92867.59	92559.39	2146918.25	23.12	0.43	39893.10	131726.59	1.42	21.70
62.00	92251.19	91928.14	2054358.86	22.27	0.35	32358.71	91833.50	1.00	21.27
63.00	91605.09	91261.52	1962430.72	21.42	0.33	29842.52	59474.79	0.65	20.77
64.00	90917.94	90544.13	1871169.20	20.58	0.24	21730.59	29632.28	0.33	20.25
65.00	90170.32	89791.87	1780625.07	19.75	0.09	7901.68	7901.68	0.09	19.66

2013

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99583.13	99576.27	6597374.83	66.25	0.03	2788.14	3436054.84	34.50	31.75
17.00	99569.40	99561.91	6497798.56	65.26	0.10	9458.38	3433266.71	34.48	30.78

18.00	99554.42	99543.28	6398236.65	64.27	0.19	18813.68	3423808.33	34.39	29.88
19.00	99532.15	99522.02	6298693.37	63.28	0.31	30851.83	3404994.65	34.21	29.07
20.00	99511.90	99500.03	6199171.35	62.30	0.42	41790.01	3374142.82	33.91	28.39
21.00	99488.16	99475.82	6099671.32	61.31	0.50	49340.01	3332352.81	33.49	27.82
22.00	99463.48	99451.10	6000195.50	60.33	0.59	58576.70	3283012.80	33.01	27.32
23.00	99438.71	99427.18	5900744.40	59.34	0.68	68107.62	3224436.10	32.43	26.91
24.00	99415.65	99403.89	5801317.22	58.35	0.75	74751.73	3156328.48	31.75	26.61
25.00	99392.13	99378.63	5701913.33	57.37	0.81	80894.20	3081576.76	31.00	26.36
26.00	99365.12	99351.03	5602534.70	56.38	0.85	84448.38	3000682.56	30.20	26.18
27.00	99336.95	99322.27	5503183.67	55.40	0.88	87006.31	2916234.18	29.36	26.04
28.00	99307.59	99293.56	5403861.40	54.42	0.90	89264.91	2829227.87	28.49	25.93
29.00	99279.53	99263.59	5304567.83	53.43	0.90	89337.24	2739962.96	27.60	25.83
30.00	99247.66	99230.52	5205304.24	52.45	0.90	89406.70	2650625.72	26.71	25.74
31.00	99213.39	99197.54	5106073.72	51.47	0.92	91360.93	2561219.02	25.82	25.65
32.00	99181.69	99164.34	5006876.18	50.48	0.91	90239.55	2469858.09	24.90	25.58
33.00	99146.99	99126.64	4907711.84	49.50	0.91	90601.75	2379618.54	24.00	25.50
34.00	99106.28	99084.31	4808585.20	48.52	0.92	90761.22	2289016.79	23.10	25.42
35.00	99062.33	99039.24	4709500.89	47.54	0.91	89927.63	2198255.57	22.19	25.35
36.00	99016.14	98989.87	4610461.66	46.56	0.90	88991.90	2108327.94	21.29	25.27
37.00	98963.60	98936.05	4511471.79	45.59	0.91	90229.68	2019336.04	20.40	25.18
38.00	98908.49	98878.83	4412535.74	44.61	0.91	89683.10	1929106.37	19.50	25.11
39.00	98849.17	98813.37	4313656.91	43.64	0.90	89030.85	1839423.27	18.61	25.03
40.00	98777.57	98741.09	4214843.53	42.67	0.90	89064.47	1750392.42	17.72	24.95
41.00	98704.61	98662.02	4116102.44	41.70	0.90	89289.13	1661327.95	16.83	24.87
42.00	98619.43	98568.99	4017440.42	40.74	0.87	86149.29	1572038.82	15.94	24.80
43.00	98518.54	98464.64	3918871.43	39.78	0.88	86550.42	1485889.53	15.08	24.70
44.00	98410.75	98349.38	3820406.79	38.82	0.88	86842.50	1399339.11	14.22	24.60
45.00	98288.01	98215.44	3722057.41	37.87	0.85	83679.56	1312496.60	13.35	24.52
46.00	98142.87	98064.38	3623841.96	36.92	0.86	84139.24	1228817.05	12.52	24.40
47.00	97985.89	97895.66	3525777.59	35.98	0.86	84092.37	1144677.81	11.68	24.30
48.00	97805.42	97706.07	3427881.93	35.05	0.84	82366.22	1060585.44	10.84	24.20
49.00	97606.71	97494.60	3330175.86	34.12	0.84	81992.96	978219.23	10.02	24.10
50.00	97382.49	97258.16	3232681.26	33.20	0.83	80627.01	896226.26	9.20	23.99
51.00	97133.83	96998.88	3135423.10	32.28	0.83	80509.07	815599.25	8.40	23.88
52.00	96863.94	96712.23	3038424.22	31.37	0.82	79013.89	735090.18	7.59	23.78
53.00	96560.52	96399.30	2941711.98	30.46	0.79	75866.25	656076.28	6.79	23.67
54.00	96238.09	96065.09	2845312.68	29.57	0.76	73105.53	580210.03	6.03	23.54
55.00	95892.10	95700.70	2749247.59	28.67	0.73	69765.81	507104.50	5.29	23.38
56.00	95509.30	95300.07	2653546.89	27.78	0.73	69378.45	437338.69	4.58	23.20
57.00	95090.85	94868.67	2558246.82	26.90	0.69	65174.78	367960.24	3.87	23.03
58.00	94646.49	94411.77	2463378.15	26.03	0.66	62406.18	302785.46	3.20	22.83
59.00	94177.06	93921.51	2368966.37	25.15	0.62	58231.33	240379.28	2.55	22.60
60.00	93665.95	93381.38	2275044.87	24.29	0.53	49118.61	182147.94	1.94	22.34
61.00	93096.81	92802.54	2181663.48	23.43	0.44	41018.72	133029.33	1.43	22.01
62.00	92508.27	92195.99	2088860.94	22.58	0.35	32268.60	92010.61	0.99	21.59
63.00	91883.71	91539.16	1996664.96	21.73	0.31	28010.98	59742.02	0.65	21.08
64.00	91194.61	90827.69	1905125.80	20.89	0.27	24886.79	31731.03	0.35	20.54
65.00	90460.77	90055.86	1814298.10	20.06	0.08	6844.25	6844.25	0.08	19.98

2014

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Activity rate	Years in labour force at age x	Years in labour force at age x and beyond	Expected period of belonging to labour force	Expected period outside the labour force
16.00	99570.29	99563.90	6609503.16	66.38	0.03	2588.66	3452764.57	34.68	31.70
17.00	99557.51	99550.65	6509939.26	65.39	0.08	7665.40	3450175.91	34.66	30.73
18.00	99543.78	99534.22	6410388.61	64.40	0.18	18413.83	3442510.51	34.58	29.81
19.00	99524.65	99513.55	6310854.40	63.41	0.30	29456.01	3424096.68	34.40	29.01
20.00	99502.45	99488.99	6211340.85	62.42	0.37	36910.42	3394640.67	34.12	28.31
21.00	99475.54	99462.09	6111851.86	61.44	0.48	47741.80	3357730.25	33.75	27.69
22.00	99448.64	99434.95	6012389.77	60.46	0.59	58467.75	3309988.45	33.28	27.17
23.00	99421.26	99407.96	5912954.82	59.47	0.66	66006.89	3251520.70	32.70	26.77
24.00	99394.66	99382.00	5813546.86	58.49	0.74	73542.68	3185513.81	32.05	26.44
25.00	99369.34	99356.84	5714164.86	57.50	0.82	81075.19	3111971.13	31.32	26.19
26.00	99344.35	99331.52	5614808.01	56.52	0.85	84630.46	3030895.95	30.51	26.01
27.00	99318.70	99304.77	5515476.49	55.53	0.87	86792.37	2946265.49	29.66	25.87
28.00	99290.85	99276.82	5416171.72	54.55	0.90	89051.31	2859473.12	28.80	25.75
29.00	99262.80	99248.70	5316894.89	53.56	0.90	89522.32	2770421.81	27.91	25.65
30.00	99234.59	99217.47	5217646.20	52.58	0.92	90783.98	2680899.48	27.02	25.56
31.00	99200.35	99181.44	5118428.73	51.60	0.91	90552.65	2590115.50	26.11	25.49
32.00	99162.53	99144.50	5019247.29	50.62	0.91	90221.49	2499562.85	25.21	25.41
33.00	99126.46	99105.33	4920102.80	49.63	0.91	90086.74	2409341.36	24.31	25.33
34.00	99084.19	99063.01	4820997.47	48.66	0.91	90345.46	2319254.61	23.41	25.25
35.00	99041.82	99020.51	4721934.46	47.68	0.91	90108.67	2228909.15	22.50	25.17
36.00	98999.20	98977.20	4622913.95	46.70	0.90	89277.43	2138800.49	21.60	25.09
37.00	98955.19	98930.14	4523936.75	45.72	0.90	89136.06	2049523.05	20.71	25.01
38.00	98905.10	98876.39	4425006.61	44.74	0.92	90471.90	1960386.99	19.82	24.92
39.00	98847.69	98816.80	4326130.22	43.77	0.92	90615.01	1869915.10	18.92	24.85
40.00	98785.91	98747.98	4227313.42	42.79	0.90	89268.18	1779300.09	18.01	24.78
41.00	98710.05	98667.64	4128565.43	41.83	0.89	87715.53	1690031.91	17.12	24.70
42.00	98625.23	98579.03	4029897.80	40.86	0.90	88622.54	1602316.38	16.25	24.61
43.00	98532.83	98478.76	3931318.77	39.90	0.88	86759.79	1513693.84	15.36	24.54
44.00	98424.70	98363.89	3832840.00	38.94	0.89	87642.23	1426934.05	14.50	24.44
45.00	98303.08	98231.32	3734476.11	37.99	0.88	86345.33	1339291.82	13.62	24.37
46.00	98159.55	98082.92	3636244.80	37.04	0.85	83370.48	1252946.49	12.76	24.28

47.00	98006.29	97920.82	3538161.88	36.10	0.86	83918.14	1169576.01	11.93	24.17
48.00	97835.35	97737.52	3440241.06	35.16	0.85	83467.84	1085657.87	11.10	24.07
49.00	97639.69	97530.49	3342503.54	34.23	0.85	82510.79	1002190.03	10.26	23.97
50.00	97421.28	97304.81	3244973.05	33.31	0.84	81346.82	919679.23	9.44	23.87
51.00	97188.35	97057.57	3147668.24	32.39	0.82	80072.50	838332.41	8.63	23.76
52.00	96926.80	96782.27	3050610.66	31.47	0.82	79361.46	758259.91	7.82	23.65
53.00	96637.74	96485.36	2953828.39	30.57	0.81	78056.66	678898.45	7.03	23.54
54.00	96332.98	96162.17	2857343.03	29.66	0.79	75968.11	600841.79	6.24	23.42
55.00	95991.36	95800.50	2761180.86	28.76	0.74	71083.97	524873.68	5.47	23.30
56.00	95609.64	95408.04	2665380.36	27.88	0.73	69934.09	453789.71	4.75	23.13
57.00	95206.44	94993.52	2569972.32	26.99	0.71	67160.42	383855.62	4.03	22.96
58.00	94780.60	94545.94	2474978.80	26.11	0.66	62400.32	316695.20	3.34	22.77
59.00	94311.28	94053.97	2380432.86	25.24	0.63	59536.16	254294.88	2.70	22.54
60.00	93796.66	93520.90	2286378.89	24.38	0.56	51904.10	194758.71	2.08	22.30
61.00	93245.13	92945.07	2192857.99	23.52	0.47	43498.29	142854.61	1.53	21.99
62.00	92645.00	92326.69	2099912.93	22.67	0.43	39792.80	99356.32	1.07	21.59
63.00	92008.38	91671.86	2007586.24	21.82	0.31	28418.28	59563.52	0.65	21.17
64.00	91335.34	90983.23	1915914.37	20.98	0.26	23564.66	31145.24	0.34	20.64
65.00	90631.13	90245.06	1824931.14	20.14	0.08	7580.58	7580.58	0.08	20.05

C.2 Employment expectancy

1976

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	97635.44	97607.76	5780003.33	59.20	0.38	37481.38	2600041.24	26.63	32.57
17.00	97580.08	97553.22	5682395.57	58.23	0.48	46532.88	2562559.86	26.26	31.97
18.00	97526.36	97490.95	5584842.35	57.26	0.51	49427.91	2516026.98	25.80	31.47
19.00	97455.54	97420.28	5487351.40	56.31	0.56	54360.52	2466599.07	25.31	31.00
20.00	97385.03	97347.52	5389931.12	55.35	0.57	55877.48	2412238.55	24.77	30.58
21.00	97310.01	97277.28	5292583.60	54.39	0.41	40175.52	2356361.07	24.21	30.17
22.00	97244.55	97208.55	5195306.32	53.43	0.49	47632.19	2316185.55	23.82	29.61
23.00	97172.55	97138.62	5098097.76	52.46	0.60	58671.72	2268553.36	23.35	29.12
24.00	97104.68	97066.87	5000959.15	51.50	0.63	61055.06	2209881.64	22.76	28.74
25.00	97029.06	96990.00	4903892.27	50.54	0.62	60327.78	2148826.57	22.15	28.39
26.00	96950.93	96914.32	4806902.28	49.58	0.61	59214.65	2088498.80	21.54	28.04
27.00	96877.70	96841.40	4709987.96	48.62	0.62	60138.51	2029284.15	20.95	27.67
28.00	96805.10	96762.47	4613146.56	47.65	0.60	58057.48	1969145.64	20.34	27.31
29.00	96719.83	96676.92	4516384.09	46.70	0.61	59456.30	1911088.16	19.76	26.94
30.00	96634.00	96586.66	4419707.18	45.74	0.61	59304.21	1851631.85	19.16	26.58
31.00	96539.31	96494.04	4323120.52	44.78	0.58	56352.52	1792327.65	18.57	26.22
32.00	96448.77	96405.27	4226626.48	43.82	0.62	60156.89	1735975.13	18.00	25.82
33.00	96361.77	96305.49	4130221.20	42.86	0.60	58264.82	1675818.24	17.39	25.47
34.00	96249.22	96196.53	4033915.71	41.91	0.59	56371.17	1617553.41	16.81	25.11
35.00	96143.85	96081.91	3937719.18	40.96	0.63	60435.52	1561182.25	16.24	24.72
36.00	96019.97	95952.49	3841637.27	40.01	0.59	56803.88	1500746.73	15.63	24.38
37.00	95885.02	95814.49	3745684.78	39.06	0.58	55764.04	1443942.85	15.06	24.01
38.00	95743.97	95670.02	3649870.28	38.12	0.63	59889.43	1388178.81	14.50	23.62
39.00	95596.07	95519.14	3554200.26	37.18	0.60	57120.45	1328289.38	13.89	23.28
40.00	95442.21	95352.61	3458681.13	36.24	0.60	56925.51	1271168.94	13.32	22.92
41.00	95263.02	95174.15	3363328.51	35.31	0.63	60054.89	1214243.43	12.75	22.56
42.00	95085.29	94986.47	3268154.36	34.37	0.61	58226.71	1154188.54	12.14	22.23
43.00	94887.66	94773.45	3173167.89	33.44	0.58	55158.15	1095961.83	11.55	21.89
44.00	94659.24	94530.95	3078394.44	32.52	0.61	57663.88	1040803.68	11.00	21.53
45.00	94402.65	94263.23	2983863.49	31.61	0.60	56557.94	983139.80	10.41	21.19
46.00	94123.80	93966.52	2889600.26	30.70	0.61	57507.51	926581.87	9.84	20.86
47.00	93809.25	93635.56	2795633.74	29.80	0.60	56368.61	869074.35	9.26	20.54
48.00	93461.87	93277.86	2701998.18	28.91	0.59	55220.49	812705.75	8.70	20.21
49.00	93093.86	92892.67	2608720.32	28.02	0.61	56385.85	757485.25	8.14	19.89
50.00	92691.48	92464.57	2515827.65	27.14	0.59	54646.56	701099.40	7.56	19.58
51.00	92237.67	91997.23	2423363.07	26.27	0.58	53726.38	646452.84	7.01	19.26
52.00	91756.80	91499.95	2331365.84	25.41	0.58	53252.97	592726.45	6.46	18.95
53.00	91243.10	90962.10	2239865.89	24.55	0.56	50938.77	539473.48	5.91	18.64
54.00	90681.09	90365.07	2148903.79	23.70	0.59	53405.76	488534.71	5.39	18.31
55.00	90049.06	89712.94	2058538.72	22.86	0.56	49880.39	435128.95	4.83	18.03
56.00	89376.82	89001.24	1968825.78	22.03	0.52	46369.65	385248.56	4.31	17.72
57.00	88625.66	88243.21	1879824.54	21.21	0.53	46504.17	338878.91	3.82	17.39
58.00	87860.76	87435.43	1791581.33	20.39	0.51	44504.63	292374.74	3.33	17.06
59.00	87010.10	86535.76	1704145.90	19.59	0.52	44912.06	247870.11	2.85	16.74
60.00	86061.42	85567.19	1617610.15	18.80	0.48	40729.98	202958.05	2.36	16.44
61.00	85072.96	84564.07	1532042.96	18.01	0.46	39237.73	162228.07	1.91	16.10
62.00	84055.18	83476.23	1447478.89	17.22	0.43	36228.68	122990.34	1.46	15.76
63.00	82897.29	82264.00	1364002.66	16.45	0.41	33892.77	86761.65	1.05	15.41
64.00	81630.72	80959.94	1281738.65	15.70	0.37	30198.06	52868.89	0.65	15.05
65.00	80289.16	79546.76	1200778.71	14.96	0.28	22670.83	22670.83	0.28	14.67

1977

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	97756.44	97730.01	5823677.91	59.57	0.33	32153.17	2575178.53	26.34	33.23
17.00	97703.58	97674.60	5725947.90	58.61	0.44	43367.52	2543025.36	26.03	32.58
18.00	97645.62	97611.79	5628273.30	57.64	0.49	47439.33	2499657.83	25.60	32.04
19.00	97577.96	97542.66	5530661.51	56.68	0.54	52673.04	2452218.50	25.13	31.55
20.00	97507.36	97471.35	5433118.85	55.72	0.54	52342.11	2399545.47	24.61	31.11
21.00	97435.34	97396.46	5335647.50	54.76	0.38	36621.07	2347203.35	24.09	30.67
22.00	97357.58	97321.68	5238251.04	53.80	0.51	49439.41	2310582.28	23.73	30.07
23.00	97285.78	97247.18	5140929.36	52.84	0.60	58445.55	2261142.87	23.24	29.60
24.00	97208.57	97170.92	5043682.18	51.89	0.59	57622.36	2202697.32	22.66	29.23
25.00	97133.27	97095.28	4946511.26	50.92	0.61	59616.50	2145074.96	22.08	28.84
26.00	97057.30	97016.89	4849415.98	49.96	0.62	59762.40	2085458.46	21.49	28.48
27.00	96976.48	96940.33	4752399.08	49.01	0.61	59230.54	2025696.05	20.89	28.12
28.00	96904.18	96863.91	4655458.75	48.04	0.63	61024.27	1966465.51	20.29	27.75
29.00	96823.65	96783.24	4558594.84	47.08	0.61	59037.78	1905441.24	19.68	27.40
30.00	96742.84	96699.02	4461811.59	46.12	0.61	58889.70	1846403.46	19.09	27.03
31.00	96655.20	96609.07	4365112.57	45.16	0.59	57482.39	1787513.76	18.49	26.67
32.00	96562.93	96516.12	4268503.51	44.20	0.62	60033.03	1730031.37	17.92	26.29
33.00	96469.30	96420.47	4171987.39	43.25	0.60	58334.39	1669998.34	17.31	25.94
34.00	96371.64	96314.81	4075566.92	42.29	0.61	58944.66	1611663.96	16.72	25.57
35.00	96257.97	96207.23	3979252.11	41.34	0.61	58494.00	1552719.29	16.13	25.21
36.00	96156.50	96097.99	3883044.88	40.38	0.62	59772.95	1494225.30	15.54	24.84
37.00	96039.48	95973.89	3786946.89	39.43	0.60	57872.25	1434452.34	14.94	24.50
38.00	95908.29	95834.48	3690973.00	38.48	0.58	55775.67	1376580.09	14.35	24.13
39.00	95760.67	95678.48	3595138.52	37.54	0.62	59320.66	1320804.42	13.79	23.75
40.00	95596.29	95511.30	3499460.04	36.61	0.60	57306.78	1261483.76	13.20	23.41
41.00	95426.30	95338.16	3403948.74	35.67	0.60	57298.23	1204176.99	12.62	23.05
42.00	95250.02	95147.17	3308610.58	34.74	0.62	59466.98	1146878.75	12.04	22.70
43.00	95044.33	94935.84	3213463.41	33.81	0.60	57341.25	1087411.77	11.44	22.37
44.00	94827.35	94704.95	3118527.57	32.89	0.59	55686.51	1030070.52	10.86	22.02
45.00	94582.54	94445.12	3023822.62	31.97	0.61	57422.63	974384.01	10.30	21.67
46.00	94307.70	94164.47	2929377.50	31.06	0.61	57252.00	916961.38	9.72	21.34
47.00	94021.24	93864.14	2835213.04	30.16	0.60	56412.35	859709.38	9.14	21.01
48.00	93707.05	93537.40	2741348.89	29.25	0.60	56028.90	803297.03	8.57	20.68
49.00	93367.74	93173.25	2647811.50	28.36	0.58	53760.97	747268.13	8.00	20.36
50.00	92978.76	92766.15	2554638.24	27.48	0.59	54639.26	693507.17	7.46	20.02
51.00	92553.54	92327.67	2461872.09	26.60	0.60	55027.29	638867.90	6.90	19.70
52.00	92101.80	91848.42	2369544.41	25.73	0.58	53088.38	583840.61	6.34	19.39
53.00	91595.03	91322.39	2277696.00	24.87	0.57	52419.05	530752.22	5.79	19.07
54.00	91049.76	90757.30	2186373.61	24.01	0.56	50824.09	478333.17	5.25	18.76
55.00	90464.85	90139.69	2095616.30	23.16	0.56	50748.64	427509.08	4.73	18.44
56.00	89814.52	89458.34	2005476.62	22.33	0.54	48754.79	376760.44	4.19	18.13
57.00	89102.15	88710.48	1916018.28	21.50	0.53	47105.27	328005.64	3.68	17.82
58.00	88318.82	87910.71	1827307.80	20.69	0.51	44746.55	280900.38	3.18	17.51
59.00	87502.60	87044.83	1739397.09	19.88	0.49	43000.14	236153.83	2.70	17.18
60.00	86587.05	86090.85	1652352.26	19.08	0.46	39860.06	193153.68	2.23	16.85
61.00	85594.64	85088.69	1566261.41	18.30	0.42	36077.61	153293.62	1.79	16.51
62.00	84582.75	84033.19	1481172.72	17.51	0.42	35041.84	117216.01	1.39	16.13
63.00	83483.62	82876.85	1397139.53	16.74	0.39	32404.85	82174.18	0.98	15.75
64.00	82270.07	81607.81	1314262.69	15.97	0.37	30113.28	49769.33	0.60	15.37
65.00	80945.55	80228.76	1232654.87	15.23	0.24	19656.05	19656.05	0.24	14.99

1978

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	97816.22	97792.03	5839978.44	59.70	0.28	27186.19	2508527.89	25.65	34.06
17.00	97767.85	97738.07	5742186.40	58.73	0.36	35283.44	2481341.70	25.38	33.35
18.00	97708.30	97669.20	5644448.33	57.77	0.46	44439.49	2446058.26	25.03	32.73
19.00	97630.10	97590.49	5546779.13	56.81	0.47	46062.71	2401618.77	24.60	32.22
20.00	97550.89	97511.69	5449188.64	55.86	0.45	43685.24	2355556.06	24.15	31.71
21.00	97472.50	97437.13	5351676.95	54.90	0.35	34103.00	2311870.82	23.72	31.19
22.00	97401.77	97360.90	5254239.81	53.94	0.51	49361.98	2277767.82	23.39	30.56
23.00	97320.03	97279.30	5156878.91	52.99	0.61	59243.09	2228405.84	22.90	30.09
24.00	97238.56	97196.40	5059599.61	52.03	0.59	57637.46	2169162.75	22.31	29.73
25.00	97154.24	97115.00	4962403.21	51.08	0.62	60017.07	2111525.29	21.73	29.34
26.00	97075.76	97037.34	4865288.21	50.12	0.60	58125.37	2051508.22	21.13	28.99
27.00	96998.92	96956.90	4768250.87	49.16	0.61	59434.58	1993382.85	20.55	28.61
28.00	96914.87	96873.64	4671293.97	48.20	0.58	56477.33	1933948.27	19.96	28.24
29.00	96832.41	96793.81	4574420.33	47.24	0.61	58753.84	1877470.94	19.39	27.85
30.00	96755.21	96708.67	4477626.52	46.28	0.60	58412.04	1818717.09	18.80	27.48
31.00	96662.13	96617.44	4380917.85	45.32	0.63	61062.22	1760305.06	18.21	27.11
32.00	96572.75	96520.59	4284300.41	44.36	0.58	56368.03	1699242.84	17.60	26.77
33.00	96468.43	96414.27	4187779.82	43.41	0.60	58330.63	1642874.81	17.03	26.38
34.00	96360.10	96309.49	4091365.55	42.46	0.60	57400.45	1584544.18	16.44	26.02
35.00	96258.87	96201.75	3995056.06	41.50	0.59	56855.24	1527143.72	15.86	25.64

36.00	96144.64	96085.25	3898854.31	40.55	0.60	58035.49	1470288.49	15.29	25.26
37.00	96025.85	95967.74	3802769.06	39.60	0.61	58540.32	1412253.00	14.71	24.89
38.00	95909.63	95833.64	3706801.32	38.65	0.61	58266.85	1353712.67	14.11	24.53
39.00	95757.64	95683.03	3610967.68	37.71	0.60	57122.77	1295445.82	13.53	24.18
40.00	95608.42	95519.94	3515284.65	36.77	0.57	54923.97	1238323.05	12.95	23.82
41.00	95431.46	95340.78	3419764.70	35.83	0.59	56727.77	1183399.08	12.40	23.43
42.00	95250.10	95148.85	3324423.92	34.90	0.60	57089.31	1126671.32	11.83	23.07
43.00	95047.60	94935.44	3229275.07	33.98	0.61	57530.88	1069582.01	11.25	22.72
44.00	94823.27	94702.42	3134339.63	33.05	0.59	56253.24	1012051.13	10.67	22.38
45.00	94581.57	94446.94	3039637.20	32.14	0.58	54968.12	955797.89	10.11	22.03
46.00	94312.30	94171.14	2945190.27	31.23	0.61	57256.05	900829.77	9.55	21.68
47.00	94029.97	93871.80	2851019.13	30.32	0.58	54257.90	843573.72	8.97	21.35
48.00	93713.63	93536.50	2757147.33	29.42	0.58	54718.85	789315.82	8.42	21.00
49.00	93359.36	93172.75	2663610.84	28.53	0.58	53667.50	734596.97	7.87	20.66
50.00	92986.13	92772.75	2570438.09	27.64	0.56	52045.51	680929.47	7.32	20.32
51.00	92559.36	92335.76	2477665.34	26.77	0.57	52908.39	628883.96	6.79	19.97
52.00	92112.16	91865.89	2385329.59	25.90	0.56	51720.50	575975.57	6.25	19.64
53.00	91619.62	91346.50	2293463.70	25.03	0.54	49509.80	524255.08	5.72	19.31
54.00	91073.37	90780.81	2202117.20	24.18	0.58	52289.75	474745.27	5.21	18.97
55.00	90488.25	90174.18	2111336.39	23.33	0.55	49235.10	422455.53	4.67	18.66
56.00	89860.10	89522.07	2021162.21	22.49	0.55	49058.09	373220.43	4.15	18.34
57.00	89184.03	88809.34	1931640.15	21.66	0.53	47068.95	324162.33	3.63	18.02
58.00	88434.64	88018.42	1842830.81	20.84	0.52	45769.58	277093.39	3.13	17.71
59.00	87602.20	87164.03	1754812.39	20.03	0.50	43669.18	231323.81	2.64	17.39
60.00	86725.85	86242.58	1667648.36	19.23	0.43	37256.80	187654.63	2.16	17.07
61.00	85759.31	85243.86	1581405.77	18.44	0.42	35972.91	150397.83	1.75	16.69
62.00	84728.42	84178.47	1496161.91	17.66	0.40	33250.50	114424.92	1.35	16.31
63.00	83628.53	83050.66	1411983.44	16.88	0.38	31891.45	81174.42	0.97	15.91
64.00	82472.79	81833.01	1328932.78	16.11	0.38	30769.21	49282.97	0.60	15.52
65.00	81193.24	80494.61	1247099.77	15.36	0.23	18513.76	18513.76	0.23	15.13

1979

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	97954.68	97929.22	5881670.39	60.04	0.24	23111.30	2462232.84	25.14	34.91
17.00	97903.77	97872.62	5783741.17	59.08	0.34	33570.31	2439121.54	24.91	34.16
18.00	97841.47	97806.81	5685868.55	58.11	0.40	39122.73	2405551.23	24.59	33.53
19.00	97772.16	97733.95	5588061.74	57.15	0.44	42905.20	2366428.51	24.20	32.95
20.00	97695.73	97656.88	5490327.79	56.20	0.42	40918.23	2323523.30	23.78	32.41
21.00	97618.02	97580.65	5392670.92	55.24	0.34	33079.84	2282605.07	23.38	31.86
22.00	97543.27	97504.29	5295090.27	54.28	0.53	51872.28	2249525.23	23.06	31.22
23.00	97465.31	97426.00	5197585.98	53.33	0.56	54461.13	2197652.95	22.55	30.78
24.00	97386.69	97349.76	5100159.98	52.37	0.58	56462.86	2143191.82	22.01	30.36
25.00	97312.83	97274.05	5002810.22	51.41	0.61	59531.72	2086728.96	21.44	29.97
26.00	97235.26	97193.79	4905536.18	50.45	0.59	57733.11	2027197.24	20.85	29.60
27.00	97152.32	97113.11	4808342.39	49.49	0.60	58073.64	1969464.13	20.27	29.22
28.00	97073.91	97034.06	4711229.27	48.53	0.62	60549.25	1911390.49	19.69	28.84
29.00	96994.21	96954.00	4614195.22	47.57	0.59	57493.72	1850841.24	19.08	28.49
30.00	96913.78	96868.13	4517241.22	46.61	0.60	58411.48	1793347.52	18.50	28.11
31.00	96822.49	96777.87	4420373.09	45.65	0.59	57098.94	1734936.03	17.92	27.74
32.00	96733.24	96689.34	4323595.22	44.70	0.58	56273.20	1677837.09	17.34	27.35
33.00	96645.44	96591.75	4226905.88	43.74	0.61	58534.60	1621563.90	16.78	26.96
34.00	96538.06	96487.16	4130314.13	42.78	0.58	56348.50	1563029.30	16.19	26.59
35.00	96436.27	96379.57	4033826.97	41.83	0.60	58020.50	1506680.80	15.62	26.21
36.00	96322.87	96264.07	3937447.40	40.88	0.61	59106.14	1448660.29	15.04	25.84
37.00	96205.26	96146.08	3841183.33	39.93	0.60	57303.06	1389554.16	14.44	25.48
38.00	96086.90	96015.18	3745037.25	38.98	0.60	57513.09	1332251.09	13.87	25.11
39.00	95943.45	95861.44	3649022.08	38.03	0.59	56654.11	1274738.00	13.29	24.75
40.00	95779.44	95697.25	3553160.63	37.10	0.59	56844.17	1218083.89	12.72	24.38
41.00	95615.07	95524.50	3457463.38	36.16	0.60	57696.80	1161239.72	12.14	24.02
42.00	95433.93	95330.72	3361938.88	35.23	0.61	58342.40	1103542.92	11.56	23.66
43.00	95227.51	95120.02	3266608.15	34.30	0.57	54694.01	1045200.52	10.98	23.33
44.00	95012.53	94889.49	3171488.13	33.38	0.59	56174.58	990506.51	10.43	22.95
45.00	94766.45	94632.51	3076598.65	32.47	0.58	54508.33	934331.93	9.86	22.61
46.00	94498.58	94361.04	2981966.14	31.56	0.59	55389.93	879823.60	9.31	22.25
47.00	94223.50	94070.52	2887605.10	30.65	0.58	54278.69	824433.68	8.75	21.90
48.00	93917.54	93747.11	2793534.58	29.74	0.58	54373.32	770154.99	8.20	21.54
49.00	93576.68	93396.48	2699787.47	28.85	0.60	56131.28	715781.66	7.65	21.20
50.00	93216.27	93005.81	2606390.99	27.96	0.57	53292.33	659650.38	7.08	20.88
51.00	92795.34	92575.79	2513385.18	27.09	0.56	51564.71	606358.05	6.53	20.55
52.00	92356.24	92106.61	2420809.39	26.21	0.57	52961.30	554793.34	6.01	20.20
53.00	91856.99	91591.60	2328702.78	25.35	0.54	49276.28	501832.03	5.46	19.89
54.00	91326.22	91041.88	2237111.18	24.50	0.53	48525.32	452555.75	4.96	19.54
55.00	90757.54	90446.75	2146069.30	23.65	0.54	49112.59	404030.43	4.45	19.19
56.00	90135.96	89807.58	2055622.55	22.81	0.53	47687.82	354917.84	3.94	18.87
57.00	89479.20	89117.57	1965814.97	21.97	0.50	44647.91	307230.02	3.43	18.54
58.00	88755.95	88358.55	1876697.39	21.14	0.50	44090.92	262582.11	2.96	18.19
59.00	87961.14	87521.27	1788338.85	20.33	0.46	40522.35	218491.20	2.48	17.85
60.00	87081.39	86597.36	1700817.58	19.53	0.40	35071.93	177968.85	2.04	17.49
61.00	86113.33	85626.59	1614220.22	18.75	0.42	36048.79	142896.92	1.66	17.09
62.00	85139.85	84586.84	1528593.62	17.95	0.39	32819.69	106848.13	1.25	16.70
63.00	84033.83	83467.26	1444006.79	17.18	0.36	29797.81	74028.43	0.88	16.30
64.00	82900.70	82280.19	1360539.52	16.41	0.32	26329.66	44230.62	0.53	15.88
65.00	81659.68	80999.81	1278259.33	15.65	0.22	17900.96	17900.96	0.22	15.43

1980

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98181.13	98157.14	5929720.16	60.40	0.19	18748.01	2381504.55	24.26	36.14
17.00	98133.15	98106.68	5831563.02	59.43	0.27	26586.91	2362756.53	24.08	35.35
18.00	98080.22	98051.21	5733456.34	58.46	0.32	31376.39	2336169.62	23.82	34.64
19.00	98022.20	97988.53	5635405.13	57.49	0.38	36941.67	2304793.23	23.51	33.98
20.00	97954.85	97921.83	5537416.61	56.53	0.34	33293.42	2267851.56	23.15	33.38
21.00	97888.80	97851.47	5439494.78	55.57	0.33	32584.54	2234558.14	22.83	32.74
22.00	97814.14	97778.81	5341643.31	54.61	0.47	46444.94	2201973.60	22.51	32.10
23.00	97743.48	97706.70	5243864.50	53.65	0.53	51979.96	2155528.66	22.05	31.60
24.00	97669.92	97630.50	5146157.80	52.69	0.54	52720.47	2103548.70	21.54	31.15
25.00	97591.08	97551.68	5048527.29	51.73	0.56	55019.15	2050828.23	21.01	30.72
26.00	97512.27	97474.57	4950975.61	50.77	0.60	58289.79	1995809.08	20.47	30.31
27.00	97436.87	97398.98	4853501.04	49.81	0.57	55712.22	1937519.29	19.88	29.93
28.00	97361.10	97323.58	4756102.06	48.85	0.58	56934.30	1881807.07	19.33	29.52
29.00	97286.07	97244.06	4658778.48	47.89	0.60	58249.19	1824872.77	18.76	29.13
30.00	97202.06	97158.35	4561534.42	46.93	0.59	57614.90	1766623.58	18.17	28.75
31.00	97114.63	97067.88	4464376.07	45.97	0.58	56008.17	1709008.68	17.60	28.37
32.00	97021.12	96972.37	4367308.19	45.01	0.59	57019.75	1653000.51	17.04	27.98
33.00	96923.61	96878.00	4270335.82	44.06	0.59	57158.02	1595980.76	16.47	27.59
34.00	96832.39	96781.92	4173457.82	43.10	0.57	55456.04	1538822.74	15.89	27.21
35.00	96731.45	96678.69	4076675.91	42.14	0.59	57137.11	1483366.70	15.33	26.81
36.00	96625.94	96564.51	3979997.21	41.19	0.57	55524.59	1426229.60	14.76	26.43
37.00	96503.07	96442.61	3883432.70	40.24	0.60	58058.45	1370705.00	14.20	26.04
38.00	96382.15	96321.89	3786990.10	39.29	0.59	56637.27	1312646.55	13.62	25.67
39.00	96261.63	96187.18	3690668.21	38.34	0.59	56846.62	1256009.28	13.05	25.29
40.00	96112.73	96027.67	3594481.02	37.40	0.57	54831.80	1199162.66	12.48	24.92
41.00	95942.61	95856.33	3498453.35	36.46	0.59	56555.23	1144330.86	11.93	24.54
42.00	95770.04	95665.60	3402597.03	35.53	0.56	53381.41	1087775.63	11.36	24.17
43.00	95561.16	95462.96	3306931.43	34.61	0.61	58041.48	1034394.22	10.82	23.78
44.00	95364.76	95248.19	3211468.47	33.68	0.56	53815.23	976352.74	10.24	23.44
45.00	95131.62	95003.89	3116220.28	32.76	0.58	55007.25	922537.51	9.70	23.06
46.00	94876.16	94747.74	3021216.38	31.84	0.58	54858.94	867530.26	9.14	22.70
47.00	94619.31	94477.00	2926468.65	30.93	0.57	54229.80	812671.32	8.59	22.34
48.00	94334.69	94171.40	2831991.65	30.02	0.57	53395.18	758441.52	8.04	21.98
49.00	94008.10	93831.47	2737820.25	29.12	0.57	53108.61	705046.34	7.50	21.62
50.00	93654.84	93445.43	2643988.78	28.23	0.55	51675.32	651937.73	6.96	21.27
51.00	93236.02	93023.41	2550543.35	27.36	0.56	52000.09	600262.40	6.44	20.92
52.00	92810.80	92579.67	2457519.94	26.48	0.54	50178.18	548262.32	5.91	20.57
53.00	92348.55	92087.77	2364940.27	25.61	0.55	50740.36	498084.14	5.39	20.22
54.00	91827.00	91553.50	2272852.49	24.75	0.53	48157.14	447343.77	4.87	19.88
55.00	91280.01	90975.77	2181298.99	23.90	0.52	47398.38	399186.63	4.37	19.52
56.00	90671.54	90340.50	2090323.22	23.05	0.52	46615.70	351788.25	3.88	19.17
57.00	90009.45	89662.23	1999982.72	22.22	0.52	46355.37	305172.56	3.39	18.83
58.00	89315.00	88939.12	1910320.50	21.39	0.48	42601.84	258817.19	2.90	18.49
59.00	88563.25	88142.97	1821381.37	20.57	0.49	43101.91	216215.35	2.44	18.12
60.00	87722.70	87259.73	1733238.40	19.76	0.42	36387.31	173113.43	1.97	17.78
61.00	86796.76	86331.19	1645978.67	18.96	0.38	32719.52	136726.13	1.58	17.39
62.00	85865.63	85329.84	1559647.48	18.16	0.36	30718.74	104006.60	1.21	16.95
63.00	84794.05	84235.92	1474317.64	17.39	0.33	28134.80	73287.86	0.86	16.52
64.00	83677.79	83067.06	1390081.72	16.61	0.32	26747.59	45153.06	0.54	16.07
65.00	82456.33	81802.09	1307014.66	15.85	0.22	18405.47	18405.47	0.22	15.63

1981

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98249.49	98225.53	5946106.49	60.52	0.15	14930.28	2315772.67	23.57	36.95
17.00	98201.58	98177.41	5847880.95	59.55	0.23	22188.09	2300842.39	23.43	36.12
18.00	98153.24	98122.99	5749703.55	58.58	0.29	28259.42	2278654.29	23.22	35.36
19.00	98092.74	98057.56	5651580.55	57.61	0.32	31378.42	2250394.87	22.94	34.67
20.00	98022.38	97986.51	5553523.00	56.66	0.28	27240.25	2219016.45	22.64	34.02
21.00	97950.65	97911.25	5455536.48	55.70	0.32	31331.60	2191776.20	22.38	33.32
22.00	97871.86	97838.36	5357625.23	54.74	0.46	44516.46	2160444.60	22.07	32.67
23.00	97804.87	97769.27	5259786.86	53.78	0.52	51133.33	2115928.15	21.63	32.14
24.00	97733.66	97699.55	5162017.60	52.82	0.53	52073.86	2064794.82	21.13	31.69
25.00	97665.44	97626.77	5064318.05	51.85	0.55	54085.23	2012720.96	20.61	31.25
26.00	97588.10	97556.92	4966691.28	50.89	0.54	52583.18	1958635.73	20.07	30.82
27.00	97525.74	97487.95	4869134.36	49.93	0.58	56737.98	1906052.55	19.54	30.38
28.00	97450.15	97411.11	4771646.42	48.96	0.56	54452.81	1849314.57	18.98	29.99
29.00	97372.08	97334.31	4674235.31	48.00	0.58	56161.90	1794861.76	18.43	29.57
30.00	97296.55	97253.63	4576900.99	47.04	0.59	57282.39	1738699.86	17.87	29.17

31.00	97210.72	97168.53	4479647.36	46.08	0.57	55677.57	1681417.47	17.30	28.79
32.00	97126.35	97084.12	4382478.82	45.12	0.58	56017.54	1625739.90	16.74	28.38
33.00	97041.90	96995.02	4285394.70	44.16	0.56	53929.23	1569722.36	16.18	27.98
34.00	96948.15	96902.14	4188399.68	43.20	0.58	56203.24	1515793.12	15.64	27.57
35.00	96856.13	96801.63	4091497.54	42.24	0.57	55273.73	1459589.89	15.07	27.17
36.00	96747.14	96689.94	3994695.91	41.29	0.58	55983.47	1404316.15	14.52	26.77
37.00	96632.73	96570.83	3898005.97	40.34	0.58	55914.51	1348332.68	13.95	26.39
38.00	96508.93	96444.68	3801435.14	39.39	0.60	57673.92	1292418.17	13.39	26.00
39.00	96380.43	96313.82	3704990.46	38.44	0.58	55573.07	1234744.25	12.81	25.63
40.00	96247.21	96167.52	3608676.64	37.49	0.58	56065.66	1179171.18	12.25	25.24
41.00	96087.83	95996.85	3512509.12	36.56	0.58	55486.18	1123105.51	11.69	24.87
42.00	95905.86	95813.68	3416512.27	35.62	0.56	54134.73	1067619.33	11.13	24.49
43.00	95721.51	95611.49	3320698.59	34.69	0.58	55837.11	1013484.60	10.59	24.10
44.00	95501.48	95393.12	3225087.10	33.77	0.57	54851.05	957647.49	10.03	23.74
45.00	95284.77	95159.58	3129693.97	32.85	0.55	52052.29	902796.44	9.47	23.37
46.00	95034.38	94900.14	3034534.40	31.93	0.58	55231.88	850744.16	8.95	22.98
47.00	94765.91	94612.99	2939634.25	31.02	0.58	55348.60	795512.27	8.39	22.63
48.00	94460.08	94301.79	2845021.26	30.12	0.54	51111.57	740163.67	7.84	22.28
49.00	94143.50	93966.61	2750719.47	29.22	0.57	53936.83	689052.10	7.32	21.90
50.00	93789.71	93587.93	2656752.87	28.33	0.56	52877.18	635115.27	6.77	21.56
51.00	93386.15	93179.63	2563164.93	27.45	0.54	50410.18	582238.09	6.23	21.21
52.00	92973.11	92736.98	2469985.30	26.57	0.54	49707.02	531827.91	5.72	20.85
53.00	92500.85	92251.91	2377248.33	25.70	0.53	48616.76	482120.89	5.21	20.49
54.00	92002.97	91724.53	2284996.42	24.84	0.52	47696.76	433504.13	4.71	20.12
55.00	91446.10	91158.08	2193271.88	23.98	0.49	44576.30	385807.38	4.22	19.77
56.00	90870.06	90559.55	2102113.80	23.13	0.50	45279.77	341231.07	3.76	19.38
57.00	90249.03	89902.43	2011554.25	22.29	0.49	44052.19	295951.30	3.28	19.01
58.00	89555.83	89182.06	1921651.82	21.46	0.48	43074.93	251899.11	2.81	18.64
59.00	88808.29	88396.52	1832469.77	20.63	0.45	39601.64	208824.18	2.35	18.28
60.00	87984.75	87537.96	1744073.25	19.82	0.43	37466.25	169222.54	1.92	17.90
61.00	87091.17	86587.14	1656535.29	19.02	0.38	33336.05	131756.29	1.51	17.51
62.00	86083.10	85552.74	1569948.15	18.24	0.38	32424.49	98420.24	1.14	17.09
63.00	85022.37	84463.33	1484395.42	17.46	0.32	26605.95	65995.75	0.78	16.68
64.00	83904.28	83287.17	1399932.09	16.68	0.27	22737.40	39389.81	0.47	16.22
65.00	82670.05	82031.58	1316644.93	15.93	0.20	16652.41	16652.41	0.20	15.73

1982

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98412.25	98390.24	5998288.19	60.95	0.12	12003.61	2293420.20	23.30	37.65
17.00	98368.22	98340.78	5899897.95	59.98	0.20	20061.52	2281416.60	23.19	36.79
18.00	98313.33	98284.53	5801557.17	59.01	0.26	25652.26	2261355.08	23.00	36.01
19.00	98255.72	98225.53	5703272.65	58.05	0.29	28878.31	2235702.81	22.75	35.29
20.00	98195.34	98163.11	5605047.12	57.08	0.25	24344.45	2206824.51	22.47	34.61
21.00	98130.89	98097.88	5506884.00	56.12	0.32	31195.13	2182480.06	22.24	33.88
22.00	98064.88	98029.38	5408786.12	55.16	0.42	41172.34	2151284.93	21.94	33.22
23.00	97993.88	97960.42	5310756.74	54.19	0.51	49959.81	2110112.59	21.53	32.66
24.00	97926.97	97893.06	5212796.32	53.23	0.52	50512.82	2060152.78	21.04	32.19
25.00	97859.16	97825.63	5114903.26	52.27	0.55	53901.92	2009639.96	20.54	31.73
26.00	97792.10	97756.14	5017077.63	51.30	0.55	53863.64	1955738.03	20.00	31.30
27.00	97720.19	97683.41	4919321.48	50.34	0.55	54116.61	1901874.40	19.46	30.88
28.00	97646.64	97609.90	4821638.07	49.38	0.59	57297.01	1847757.79	18.92	30.46
29.00	97573.17	97538.17	4724028.17	48.42	0.57	55206.60	1790460.77	18.35	30.07
30.00	97503.18	97465.71	4626489.99	47.45	0.60	58576.89	1735254.17	17.80	29.65
31.00	97428.24	97386.89	4529024.29	46.49	0.57	55705.30	1676677.28	17.21	29.28
32.00	97345.55	97305.03	4431637.39	45.52	0.60	57993.80	1620971.98	16.65	28.87
33.00	97264.52	97222.36	4334332.36	44.56	0.56	54638.97	1562978.18	16.07	28.49
34.00	97180.21	97131.84	4237110.00	43.60	0.57	55850.81	1508339.21	15.52	28.08
35.00	97083.46	97032.30	4139978.16	42.64	0.59	56860.93	1452488.40	14.96	27.68
36.00	96981.13	96928.81	4042945.86	41.69	0.57	54958.63	1395627.48	14.39	27.30
37.00	96876.48	96819.52	3946017.06	40.73	0.59	56833.06	1340668.84	13.84	26.89
38.00	96762.56	96700.06	3849197.53	39.78	0.58	56472.83	1283835.78	13.27	26.51
39.00	96637.56	96562.79	3752497.48	38.83	0.58	55716.73	1227362.95	12.70	26.13
40.00	96488.02	96412.30	3655934.69	37.89	0.57	55244.25	1171646.22	12.14	25.75
41.00	96336.58	96259.43	3559522.39	36.95	0.60	58236.95	1116401.97	11.59	25.36
42.00	96182.27	96084.48	3463262.96	36.01	0.58	55344.66	1058165.02	11.00	25.01
43.00	95986.69	95886.51	3367178.48	35.08	0.57	54655.31	1002820.36	10.45	24.63
44.00	95786.33	95679.21	3271291.97	34.15	0.59	56259.37	948165.05	9.90	24.25
45.00	95572.08	95452.67	3175612.76	33.23	0.56	53358.04	891905.67	9.33	23.90
46.00	95333.26	95203.92	3080160.10	32.31	0.56	53504.60	838547.63	8.80	23.51
47.00	95074.58	94933.16	2984956.17	31.40	0.55	52023.37	785043.03	8.26	23.14
48.00	94791.74	94641.41	2890023.01	30.49	0.57	54229.53	733019.66	7.73	22.76
49.00	94491.08	94317.12	2795381.61	29.58	0.54	51402.83	678790.13	7.18	22.40
50.00	94143.16	93953.34	2701064.49	28.69	0.55	51956.20	627387.30	6.66	22.03
51.00	93763.53	93553.43	2607111.14	27.81	0.54	50612.41	575431.10	6.14	21.67
52.00	93343.33	93124.15	2513557.71	26.93	0.52	48145.19	524818.69	5.62	21.31
53.00	92904.98	92654.94	2420433.56	26.05	0.54	49755.70	476673.51	5.13	20.92
54.00	92404.90	92143.32	2327778.62	25.19	0.51	47361.67	426917.80	4.62	20.57
55.00	91881.73	91586.74	2235635.30	24.33	0.53	48632.56	379556.14	4.13	20.20
56.00	91291.75	90985.60	2144048.56	23.49	0.50	45492.80	330923.58	3.62	19.86
57.00	90679.44	90338.59	2053062.96	22.64	0.46	41917.10	285430.78	3.15	19.49
58.00	89997.73	89634.98	1962724.37	21.81	0.46	40963.19	243513.67	2.71	19.10
59.00	89272.24	88886.69	1873089.39	20.98	0.44	39199.03	202550.49	2.27	18.71
60.00	88501.15	88072.66	1784202.70	20.16	0.39	34612.55	163351.46	1.85	18.31

61.00	87644.17	87180.61	1696130.04	19.35	0.38	32867.09	128738.90	1.47	17.88
62.00	86717.05	86194.48	1608949.43	18.55	0.35	30426.65	95871.81	1.11	17.45
63.00	85671.91	85137.60	1522754.95	17.77	0.33	27754.86	65445.16	0.76	17.01
64.00	84603.30	84015.14	1437617.35	16.99	0.28	23944.32	37690.30	0.45	16.55
65.00	83426.98	82807.16	1353602.21	16.22	0.17	13745.99	13745.99	0.16	16.06

1983

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98417.88	98397.46	5981199.91	60.77	0.12	11709.30	2259778.49	22.96	37.81
17.00	98377.03	98349.68	5882802.46	59.80	0.18	17702.94	2248069.19	22.85	36.95
18.00	98322.33	98290.81	5784452.77	58.83	0.22	21427.40	2230366.24	22.68	36.15
19.00	98259.29	98222.87	5686161.96	57.87	0.28	27698.85	2208938.85	22.48	35.39
20.00	98186.44	98154.81	5587939.09	56.91	0.22	21594.06	2181240.00	22.22	34.70
21.00	98123.18	98087.97	5489784.28	55.95	0.32	31290.06	2159645.94	22.01	33.94
22.00	98052.77	98012.40	5391696.31	54.99	0.41	40479.12	2128355.88	21.71	33.28
23.00	97972.03	97935.18	5293683.91	54.03	0.46	44854.31	2087876.76	21.31	32.72
24.00	97898.32	97860.77	5195748.74	53.07	0.52	50789.74	2043022.45	20.87	32.20
25.00	97823.22	97786.08	5097887.96	52.11	0.54	52804.49	1992232.71	20.37	31.75
26.00	97748.95	97711.01	5000101.88	51.15	0.56	55206.72	1939428.22	19.84	31.31
27.00	97673.08	97634.62	4902390.87	50.19	0.56	54382.49	1884221.50	19.29	30.90
28.00	97596.17	97557.49	4804756.24	49.23	0.58	56680.90	1829839.01	18.75	30.48
29.00	97518.82	97479.49	4707198.75	48.27	0.58	56928.02	1773158.11	18.18	30.09
30.00	97440.16	97401.36	4609719.26	47.31	0.58	56687.59	1716230.09	17.61	29.70
31.00	97362.56	97317.73	4512317.90	46.35	0.60	58001.37	1659542.50	17.04	29.30
32.00	97272.91	97230.95	4415000.17	45.39	0.59	57463.49	1601541.13	16.46	28.92
33.00	97188.99	97144.69	4317769.22	44.43	0.59	57606.80	1544077.63	15.89	28.54
34.00	97100.38	97051.11	4220624.53	43.47	0.57	55319.13	1486470.84	15.31	28.16
35.00	97001.83	96950.67	4123573.42	42.51	0.59	56813.09	1431151.71	14.75	27.76
36.00	96899.51	96846.72	4026622.75	41.55	0.59	56849.02	1374338.61	14.18	27.37
37.00	96793.93	96731.94	3929776.03	40.60	0.57	55620.87	1317489.59	13.61	26.99
38.00	96669.95	96603.32	3833044.09	39.65	0.56	54484.27	1261868.72	13.05	26.60
39.00	96536.69	96465.39	3736440.77	38.70	0.56	54020.62	1207384.45	12.51	26.20
40.00	96394.08	96314.30	3639975.38	37.76	0.58	55477.04	1153363.83	11.97	25.80
41.00	96234.52	96157.00	3543661.08	36.82	0.58	55386.43	1097886.79	11.41	25.41
42.00	96079.48	95984.88	3447504.08	35.88	0.57	55191.31	1042500.36	10.85	25.03
43.00	95890.28	95794.15	3351519.20	34.95	0.57	54506.87	987309.05	10.30	24.66
44.00	95698.02	95596.44	3255725.05	34.02	0.57	54298.78	932802.18	9.75	24.27
45.00	95494.85	95366.67	3160128.61	33.09	0.58	55503.40	878503.40	9.20	23.89
46.00	95238.48	95108.41	3064761.94	32.18	0.56	53736.25	823000.00	8.64	23.54
47.00	94978.34	94836.83	2969653.53	31.27	0.54	51022.21	769263.75	8.10	23.17
48.00	94695.31	94534.48	2874816.70	30.36	0.56	53033.84	718241.54	7.58	22.77
49.00	94373.64	94209.86	2780282.23	29.46	0.54	50873.32	665207.70	7.05	22.41
50.00	94046.08	93860.86	2686072.37	28.56	0.54	50591.00	614334.37	6.53	22.03
51.00	93675.63	93470.35	2592211.51	27.67	0.53	49445.82	563743.37	6.02	21.65
52.00	93265.07	93047.55	2498741.16	26.79	0.53	48943.01	514297.55	5.51	21.28
53.00	92830.02	92594.13	2405693.61	25.92	0.53	48797.11	465354.54	5.01	20.90
54.00	92358.24	92091.30	2313099.48	25.04	0.50	45677.28	416557.44	4.51	20.53
55.00	91824.36	91538.10	2221008.18	24.19	0.48	43755.21	370880.16	4.04	20.15
56.00	91251.83	90942.12	2129470.09	23.34	0.50	45925.77	327124.95	3.58	19.75
57.00	90632.41	90308.80	2038527.97	22.49	0.47	42716.06	281199.18	3.10	19.39
58.00	89985.20	89617.69	1948219.16	21.65	0.42	37908.28	238483.11	2.65	19.00
59.00	89250.17	88836.76	1858601.48	20.82	0.44	39265.85	200574.83	2.25	18.58
60.00	88423.36	87981.72	1769764.71	20.01	0.40	34752.78	161308.98	1.82	18.19
61.00	87540.09	87071.96	1681782.99	19.21	0.35	30301.04	126556.20	1.45	17.77
62.00	86603.83	86098.40	1594711.03	18.41	0.37	31684.21	96255.16	1.11	17.30
63.00	85592.96	85036.85	1508612.63	17.63	0.30	25936.24	64570.95	0.75	16.87
64.00	84480.73	83891.57	1423575.78	16.85	0.29	24664.12	38634.71	0.46	16.39
65.00	83302.40	82666.20	1339684.22	16.08	0.17	13970.59	13970.59	0.17	15.91

1984

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98538.17	98515.89	6012366.28	61.02	0.11	10935.26	2171820.01	22.04	38.98
17.00	98493.61	98465.99	5913850.39	60.04	0.16	16246.89	2160884.75	21.94	38.10
18.00	98438.36	98406.85	5815384.41	59.08	0.20	19582.96	2144637.86	21.79	37.29
19.00	98375.35	98337.62	5716977.55	58.11	0.23	22420.98	2125054.90	21.60	36.51
20.00	98299.88	98264.23	5618639.94	57.16	0.18	18178.88	2102633.92	21.39	35.77
21.00	98228.57	98190.03	5520375.71	56.20	0.30	29064.25	2084455.04	21.22	34.98
22.00	98151.48	98115.78	5422185.68	55.24	0.38	37382.11	2055390.79	20.94	34.30
23.00	98080.07	98043.71	5324069.91	54.28	0.45	44119.67	2018008.68	20.58	33.71
24.00	98007.36	97970.15	5226026.20	53.32	0.46	45360.18	1973889.01	20.14	33.18
25.00	97932.95	97897.93	5128056.05	52.36	0.51	49732.15	1928528.83	19.69	32.67

26.00	97862.91	97826.84	5030158.12	51.40	0.54	52924.32	1878796.68	19.20	32.20
27.00	97790.77	97754.32	4932331.28	50.44	0.55	53764.88	1825872.36	18.67	31.77
28.00	97717.87	97684.11	4834576.96	49.47	0.56	55191.52	1772107.49	18.13	31.34
29.00	97650.35	97611.31	4736892.84	48.51	0.56	54369.50	1716915.96	17.58	30.93
30.00	97572.27	97533.18	4639281.53	47.55	0.60	58910.04	1662546.46	17.04	30.51
31.00	97494.09	97453.80	4541748.35	46.58	0.57	55353.76	1603636.42	16.45	30.14
32.00	97413.52	97369.42	4444294.55	45.62	0.58	56474.26	1548282.66	15.89	29.73
33.00	97325.31	97280.92	4346925.13	44.66	0.58	56909.34	1491808.40	15.33	29.34
34.00	97236.53	97188.43	4249644.21	43.70	0.55	53648.01	1434899.06	14.76	28.95
35.00	97140.33	97086.67	4152455.79	42.75	0.55	53494.76	1381251.05	14.22	28.53
36.00	97033.02	96975.97	4055369.11	41.79	0.57	54888.40	1327756.29	13.68	28.11
37.00	96918.92	96858.02	3958393.14	40.84	0.57	54821.64	1272867.90	13.13	27.71
38.00	96797.13	96732.81	3861535.12	39.89	0.57	55040.97	1218046.25	12.58	27.31
39.00	96668.50	96597.54	3764802.31	38.95	0.58	56219.77	1163005.28	12.03	26.91
40.00	96526.59	96449.89	3668204.76	38.00	0.59	56905.44	1106785.51	11.47	26.54
41.00	96373.20	96295.57	3571754.87	37.06	0.57	54792.18	1049880.08	10.89	26.17
42.00	96217.94	96125.84	3475459.30	36.12	0.55	53157.59	995087.90	10.34	25.78
43.00	96033.73	95934.65	3379333.46	35.19	0.56	54107.14	941930.31	9.81	25.38
44.00	95835.57	95719.47	3283398.81	34.26	0.53	50348.44	887823.16	9.26	25.00
45.00	95603.37	95484.94	3187679.34	33.34	0.51	48983.78	837474.72	8.76	24.58
46.00	95366.51	95233.18	3092194.40	32.42	0.54	51616.38	788490.95	8.27	24.16
47.00	95099.85	94956.14	2996961.22	31.51	0.54	51751.10	736874.56	7.75	23.77
48.00	94812.44	94658.40	2902005.07	30.61	0.54	50736.90	685123.46	7.23	23.38
49.00	94504.37	94335.38	2807346.67	29.71	0.52	48960.06	634386.56	6.71	22.99
50.00	94166.39	93977.22	2713011.29	28.81	0.53	50089.86	585426.50	6.22	22.59
51.00	93788.05	93592.01	2619034.07	27.93	0.53	49416.58	535336.64	5.71	22.22
52.00	93395.97	93182.19	2525442.06	27.04	0.50	46311.55	485920.06	5.20	21.84
53.00	92968.41	92732.57	2432259.87	26.16	0.49	45809.89	439608.51	4.73	21.43
54.00	92496.73	92247.00	2339527.30	25.29	0.49	45385.53	393798.62	4.26	21.04
55.00	91997.27	91714.43	2247280.29	24.43	0.47	43105.78	348413.09	3.79	20.64
56.00	91431.58	91127.03	2155565.87	23.58	0.46	42191.82	305307.31	3.34	20.24
57.00	90822.48	90480.00	2064438.84	22.73	0.46	41892.24	263115.50	2.90	19.83
58.00	90137.52	89779.54	1973958.84	21.90	0.41	37078.95	221223.26	2.45	19.45
59.00	89421.56	89019.64	1884179.30	21.07	0.40	35785.90	184144.31	2.06	19.01
60.00	88617.73	88173.26	1795159.66	20.26	0.36	32006.89	148358.41	1.67	18.58
61.00	87728.80	87257.84	1706986.39	19.46	0.33	28795.09	116351.52	1.33	18.13
62.00	86786.87	86294.29	1619728.56	18.66	0.30	26060.88	87556.43	1.01	17.65
63.00	85801.71	85253.50	1533434.27	17.87	0.31	26172.83	61495.56	0.72	17.16
64.00	84705.30	84103.86	1448180.76	17.10	0.28	23969.60	35322.73	0.42	16.68
65.00	83502.42	82869.57	1364076.90	16.34	0.14	11353.13	11353.13	0.14	16.20

1985

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98633.47	98610.99	6008298.83	60.92	0.09	9269.43	2159553.54	21.89	39.02
17.00	98588.52	98562.88	5909687.84	59.94	0.16	16164.31	2150284.11	21.81	38.13
18.00	98537.23	98507.71	5811124.96	58.97	0.20	19504.53	2134119.79	21.66	37.32
19.00	98478.18	98444.87	5712617.26	58.01	0.22	21756.32	2114615.27	21.47	36.54
20.00	98411.56	98377.13	5614172.39	57.05	0.19	18986.79	2092858.95	21.27	35.78
21.00	98342.69	98304.36	5515795.26	56.09	0.30	29393.00	2073872.17	21.09	35.00
22.00	98266.03	98226.72	5417490.90	55.13	0.37	36245.66	2044479.16	20.81	34.33
23.00	98187.42	98149.76	5319264.17	54.17	0.40	39358.05	2008233.50	20.45	33.72
24.00	98112.11	98069.81	5221114.41	53.22	0.46	45210.18	1968875.45	20.07	33.15
25.00	98027.51	97987.19	5123044.61	52.26	0.49	48111.71	1923665.27	19.62	32.64
26.00	97946.87	97907.02	5025057.42	51.30	0.50	49051.42	1875553.56	19.15	32.16
27.00	97867.17	97830.42	4927150.40	50.35	0.56	54393.71	1826502.14	18.66	31.68
28.00	97793.67	97756.79	4829319.98	49.38	0.54	53277.45	1772108.43	18.12	31.26
29.00	97719.92	97679.65	4731563.19	48.42	0.56	54700.61	1718830.97	17.59	30.83
30.00	97639.39	97598.01	4633883.53	47.46	0.58	56606.84	1664130.37	17.04	30.42
31.00	97556.63	97517.03	4536285.52	46.50	0.60	58802.77	1607523.52	16.48	30.02
32.00	97477.42	97434.24	4438768.50	45.54	0.56	54660.61	1548720.76	15.89	29.65
33.00	97391.06	97346.62	4341334.26	44.58	0.58	56363.69	1494060.15	15.34	29.24
34.00	97302.18	97251.92	4243987.64	43.62	0.58	56211.61	1437696.46	14.78	28.84
35.00	97201.66	97148.48	4146735.72	42.66	0.57	55471.78	1381484.85	14.21	28.45
36.00	97095.31	97039.21	4049587.24	41.71	0.59	56962.02	1326013.06	13.66	28.05
37.00	96983.11	96923.47	3952548.03	40.76	0.56	54761.76	1269051.05	13.09	27.67
38.00	96863.83	96800.80	3855624.56	39.80	0.56	54692.45	1214289.29	12.54	27.27
39.00	96737.76	96664.98	3758823.76	38.86	0.57	54809.04	1159596.84	11.99	26.87
40.00	96592.19	96514.04	3662158.79	37.91	0.56	53661.80	1104787.80	11.44	26.48
41.00	96435.89	96354.56	3565644.75	36.97	0.56	54343.97	1051125.99	10.90	26.07
42.00	96273.24	96173.19	3469290.19	36.04	0.56	54145.51	996782.02	10.35	25.68
43.00	96073.14	95975.92	3373117.00	35.11	0.55	52978.71	942636.51	9.81	25.30
44.00	95878.71	95778.93	3277141.07	34.18	0.57	54977.11	889657.80	9.28	24.90
45.00	95679.16	95556.11	3181362.14	33.25	0.55	52173.63	834680.69	8.72	24.53
46.00	95433.05	95301.39	3085806.03	32.33	0.54	51843.96	782507.06	8.20	24.14
47.00	95169.74	95029.22	2990504.64	31.42	0.54	51695.90	730663.10	7.68	23.75
48.00	94888.71	94732.57	2895475.41	30.51	0.53	50113.53	678967.20	7.16	23.36
49.00	94576.42	94402.76	2800742.85	29.61	0.53	50033.46	628853.68	6.65	22.96
50.00	94229.10	94044.79	2706340.08	28.72	0.50	46928.35	578820.21	6.14	22.58
51.00	93860.48	93664.60	2612295.29	27.83	0.51	47581.62	531891.86	5.67	22.16
52.00	93468.73	93246.68	2518630.69	26.95	0.51	47928.79	484310.24	5.18	21.76
53.00	93024.63	92780.50	2425384.01	26.07	0.49	45555.22	436381.45	4.69	21.38
54.00	92536.37	92272.50	2332603.52	25.21	0.49	45305.80	390826.23	4.22	20.98
55.00	92008.63	91728.38	2240331.02	24.35	0.48	43754.44	345520.43	3.76	20.59

56.00	91448.13	91142.17	2148602.64	23.50	0.48	44112.81	301765.99	3.30	20.20
57.00	90836.21	90497.98	2057460.48	22.65	0.45	40362.10	257653.19	2.84	19.81
58.00	90159.76	89798.21	1966962.50	21.82	0.44	39511.21	217291.09	2.41	19.41
59.00	89436.67	89049.69	1877164.28	20.99	0.39	34729.38	177779.87	1.99	19.00
60.00	88662.71	88226.48	1788114.59	20.17	0.37	32379.12	143050.49	1.61	18.55
61.00	87790.25	87329.96	1699888.11	19.36	0.33	28731.56	110671.38	1.26	18.10
62.00	86869.68	86370.13	1612558.15	18.56	0.29	25133.71	81939.82	0.94	17.62
63.00	85870.58	85328.18	1526188.02	17.77	0.28	23891.89	56806.11	0.66	17.11
64.00	84785.78	84201.98	1440859.84	16.99	0.25	21050.50	32914.22	0.39	16.61
65.00	83618.18	82963.10	1356657.85	16.22	0.14	11863.72	11863.72	0.14	16.08

1986

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98635.21	98610.30	6031725.87	61.15	0.09	9072.15	2193955.70	22.24	38.91
17.00	98585.39	98557.51	5933115.56	60.18	0.16	15966.32	2184883.55	22.16	38.02
18.00	98529.63	98495.90	5834558.05	59.22	0.21	20388.65	2168917.24	22.01	37.20
19.00	98462.17	98425.02	5736062.15	58.26	0.24	23228.30	2148528.59	21.82	36.44
20.00	98387.87	98353.38	5637637.13	57.30	0.22	21834.45	2125300.28	21.60	35.70
21.00	98318.89	98277.70	5539283.75	56.34	0.30	29876.42	2103465.83	21.39	34.95
22.00	98236.52	98196.60	5441006.05	55.39	0.39	38002.08	2073589.41	21.11	34.28
23.00	98156.67	98116.81	5342809.45	54.43	0.44	43073.28	2035587.33	20.74	33.69
24.00	98076.94	98034.89	5244692.64	53.48	0.46	45194.08	1992514.05	20.32	33.16
25.00	97992.83	97952.12	5146657.76	52.52	0.51	50053.53	1947319.96	19.87	32.65
26.00	97911.41	97869.32	5048705.63	51.56	0.54	53240.91	1897266.43	19.38	32.19
27.00	97827.23	97787.74	4950836.31	50.61	0.58	56619.10	1844025.52	18.85	31.76
28.00	97748.25	97707.99	4853048.57	49.65	0.57	56182.09	1787406.42	18.29	31.36
29.00	97667.72	97627.30	4755340.58	48.69	0.58	57111.97	1731224.32	17.73	30.96
30.00	97586.88	97546.60	4657713.28	47.73	0.58	57064.76	1674112.35	17.16	30.57
31.00	97506.31	97462.45	4560166.69	46.77	0.60	58574.93	1617047.59	16.58	30.18
32.00	97418.59	97376.11	4462704.24	45.81	0.59	57938.78	1558472.66	16.00	29.81
33.00	97333.62	97286.06	4365328.13	44.85	0.60	58079.78	1500533.88	15.42	29.43
34.00	97238.50	97191.32	4268042.07	43.89	0.60	58120.41	1442454.10	14.83	29.06
35.00	97144.15	97086.54	4170850.75	42.93	0.59	57669.41	1384333.69	14.25	28.68
36.00	97028.94	96970.16	4073764.21	41.99	0.58	56048.75	1326664.29	13.67	28.31
37.00	96911.38	96852.15	3976794.05	41.04	0.60	58304.99	1270615.53	13.11	27.92
38.00	96792.91	96725.95	3879941.90	40.08	0.57	54940.34	1212310.54	12.52	27.56
39.00	96658.98	96591.33	3783215.96	39.14	0.57	55250.24	1157370.21	11.97	27.17
40.00	96523.68	96451.22	3686624.63	38.19	0.58	56038.16	1102119.97	11.42	26.78
41.00	96378.77	96296.93	3590173.41	37.25	0.56	54022.58	1046081.80	10.85	26.40
42.00	96215.09	96125.93	3493876.48	36.31	0.56	54022.77	992059.23	10.31	26.00
43.00	96036.78	95936.06	3397750.54	35.38	0.57	54299.81	938036.45	9.77	25.61
44.00	95835.33	95737.85	3301814.49	34.45	0.54	51889.91	883736.65	9.22	25.23
45.00	95640.37	95523.47	3206076.64	33.52	0.57	54161.81	831846.73	8.70	24.82
46.00	95406.57	95278.59	3110553.17	32.60	0.55	52593.78	777684.93	8.15	24.45
47.00	95150.61	95010.44	3015274.58	31.69	0.54	51780.69	725091.14	7.62	24.07
48.00	94870.27	94713.17	2920264.14	30.78	0.55	51997.53	673310.45	7.10	23.68
49.00	94556.07	94390.29	2825550.97	29.88	0.51	48516.61	621312.92	6.57	23.31
50.00	94224.50	94039.38	2731160.68	28.99	0.52	49088.56	572796.31	6.08	22.91
51.00	93854.26	93655.49	2637121.30	28.10	0.54	50199.34	523707.76	5.58	22.52
52.00	93456.71	93249.04	2543465.81	27.22	0.51	47930.01	473508.42	5.07	22.15
53.00	93041.37	92810.49	2450216.77	26.33	0.50	46312.43	425578.41	4.57	21.76
54.00	92579.61	92327.01	2357406.29	25.46	0.50	46348.16	379265.98	4.10	21.37
55.00	92074.41	91799.41	2265079.27	24.60	0.47	42962.13	332917.82	3.62	20.98
56.00	91524.42	91233.27	2173279.86	23.75	0.45	40872.50	289955.69	3.17	20.58
57.00	90942.11	90617.39	2082046.59	22.89	0.42	38421.77	249083.19	2.74	20.16
58.00	90292.66	89944.47	1991429.21	22.06	0.43	38945.96	210661.42	2.33	19.72
59.00	89596.29	89200.06	1901484.74	21.22	0.39	34966.42	171715.46	1.92	19.31
60.00	88803.83	88388.80	1812284.68	20.41	0.34	29610.25	136749.04	1.54	18.87
61.00	87973.76	87517.04	1723895.88	19.60	0.32	28005.45	107138.79	1.22	18.38
62.00	87060.32	86561.75	1636378.84	18.80	0.30	25968.52	79133.34	0.91	17.89
63.00	86063.18	85538.74	1549817.09	18.01	0.25	21641.30	53164.81	0.62	17.39
64.00	85014.30	84452.61	1464278.35	17.22	0.25	21113.15	31523.51	0.37	16.85
65.00	83890.92	83282.88	1379825.74	16.45	0.12	10410.36	10410.36	0.12	16.32

1987

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98703.57	98677.99	6048690.74	61.28	0.12	11644.00	2286450.24	23.16	38.12
17.00	98652.41	98623.40	5950012.74	60.31	0.19	18738.45	2274806.24	23.06	37.25
18.00	98594.39	98550.58	5851389.35	59.35	0.23	23060.83	2256067.79	22.88	36.47
19.00	98506.77	98463.62	5752838.77	58.40	0.25	24714.37	2233006.96	22.67	35.73
20.00	98420.48	98380.50	5654375.14	57.45	0.28	27054.64	2208292.59	22.44	35.01

21.00	98340.51	98299.33	5555994.65	56.50	0.38	36960.55	2181237.95	22.18	34.32
22.00	98258.14	98213.05	5457695.32	55.54	0.44	43704.81	2144277.40	21.82	33.72
23.00	98167.95	98120.58	5359482.27	54.60	0.46	44742.99	2100572.60	21.40	33.20
24.00	98073.21	98026.02	5261361.69	53.65	0.51	49993.27	2055829.61	20.96	32.69
25.00	97978.83	97934.91	5163335.67	52.70	0.54	52591.05	2005836.34	20.47	32.23
26.00	97890.99	97844.50	5065400.76	51.75	0.56	55184.30	1953245.30	19.95	31.79
27.00	97798.01	97752.92	4967556.26	50.79	0.59	57478.71	1898061.00	19.41	31.39
28.00	97707.82	97667.19	4869803.35	49.84	0.59	57818.97	1840582.28	18.84	31.00
29.00	97626.55	97582.68	4772136.16	48.88	0.61	59915.77	1782763.31	18.26	30.62
30.00	97538.82	97492.02	4674553.48	47.93	0.64	62687.37	1722847.54	17.66	30.26
31.00	97445.22	97399.76	4577061.46	46.97	0.63	61751.44	1660160.17	17.04	29.93
32.00	97354.29	97304.72	4479661.70	46.01	0.62	60134.32	1598408.73	16.42	29.60
33.00	97255.15	97206.51	4382356.98	45.06	0.62	60559.65	1538274.41	15.82	29.24
34.00	97157.86	97107.58	4285150.47	44.11	0.62	60012.48	1477714.76	15.21	28.90
35.00	97057.29	97004.63	4188042.90	43.15	0.62	59948.86	1417702.28	14.61	28.54
36.00	96951.98	96892.24	4091038.27	42.20	0.61	59201.16	1357753.41	14.00	28.19
37.00	96832.49	96774.02	3994146.03	41.25	0.58	56612.80	1298552.26	13.41	27.84
38.00	96715.56	96652.05	3897372.01	40.30	0.61	58667.80	1241939.45	12.84	27.46
39.00	96588.55	96509.82	3800719.95	39.35	0.57	55203.62	1183271.66	12.25	27.10
40.00	96431.09	96357.51	3704210.13	38.41	0.58	56080.07	1128068.04	11.70	26.71
41.00	96283.92	96197.66	3607852.62	37.47	0.61	58872.97	1071987.97	11.13	26.34
42.00	96111.40	96022.29	3511654.97	36.54	0.59	56365.09	1013115.00	10.54	26.00
43.00	95933.19	95834.92	3415632.67	35.60	0.60	57596.78	956749.92	9.97	25.63
44.00	95736.64	95627.72	3319797.76	34.68	0.57	54220.92	899153.13	9.39	25.28
45.00	95518.80	95406.94	3224170.04	33.75	0.58	55049.80	844932.22	8.85	24.91
46.00	95295.07	95174.16	3128763.10	32.83	0.57	54154.10	789882.41	8.29	24.54
47.00	95053.25	94908.63	3033588.94	31.91	0.59	56280.82	735728.32	7.74	24.17
48.00	94764.02	94612.21	2938680.31	31.01	0.56	53361.29	679447.49	7.17	23.84
49.00	94460.41	94293.55	2844068.09	30.11	0.56	52521.51	626086.21	6.63	23.48
50.00	94126.70	93942.39	2749774.54	29.21	0.53	49413.70	573564.70	6.09	23.12
51.00	93758.09	93564.61	2655832.15	28.33	0.53	49589.24	524151.00	5.59	22.74
52.00	93371.14	93162.99	2562267.54	27.44	0.51	47419.96	474561.76	5.08	22.36
53.00	92954.85	92721.91	2469104.54	26.56	0.53	48864.44	427141.79	4.60	21.97
54.00	92488.96	92242.11	2376382.64	25.69	0.49	45567.60	378277.35	4.09	21.60
55.00	91995.26	91738.41	2284140.53	24.83	0.48	44493.13	332709.75	3.62	21.21
56.00	91481.56	91190.78	2192402.12	23.97	0.44	40488.71	288216.62	3.15	20.81
57.00	90899.99	90583.60	2101211.34	23.12	0.43	38769.78	247727.91	2.73	20.39
58.00	90267.21	89924.88	2010627.74	22.27	0.40	36329.65	208958.13	2.31	19.96
59.00	89582.55	89202.31	1920702.86	21.44	0.41	36305.34	172628.48	1.93	19.51
60.00	88822.06	88409.90	1831500.55	20.62	0.34	29705.73	136323.14	1.53	19.09
61.00	87997.74	87559.48	1743090.65	19.81	0.32	27843.92	106617.41	1.21	18.60
62.00	87121.22	86651.05	1655531.17	19.00	0.27	23135.83	78773.50	0.90	18.10
63.00	86180.87	85655.24	1568880.12	18.20	0.28	24069.12	55637.67	0.65	17.56
64.00	85129.61	84573.81	1483224.88	17.42	0.25	21058.88	31568.55	0.37	17.05
65.00	84018.01	83410.05	1398651.07	16.65	0.13	10509.67	10509.67	0.13	16.52

1988

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98772.24	98749.18	6048877.97	61.24	0.13	12442.40	2319217.09	23.48	37.76
17.00	98726.11	98692.20	5950128.79	60.27	0.21	21218.82	2306774.69	23.37	36.90
18.00	98658.28	98621.83	5851436.59	59.31	0.24	24162.35	2285555.87	23.17	36.14
19.00	98585.39	98545.25	5752814.76	58.35	0.21	20891.59	2261393.52	22.94	35.42
20.00	98505.12	98459.01	5654269.51	57.40	0.33	32885.31	2240501.93	22.75	34.66
21.00	98412.90	98367.41	5555810.50	56.45	0.40	39248.60	2207616.62	22.43	34.02
22.00	98321.93	98276.77	5457443.09	55.51	0.46	44912.48	2168368.02	22.05	33.45
23.00	98231.60	98183.52	5359166.32	54.56	0.48	47619.01	2123455.54	21.62	32.94
24.00	98135.44	98087.90	5260982.80	53.61	0.53	52378.94	2075836.53	21.15	32.46
25.00	98040.37	97992.06	5162894.89	52.66	0.54	53307.68	2023457.59	20.64	32.02
26.00	97943.76	97893.07	5064902.83	51.71	0.57	55896.94	1970149.91	20.12	31.60
27.00	97842.38	97791.91	4967009.76	50.77	0.59	57892.81	1914252.96	19.56	31.20
28.00	97741.45	97688.98	4869217.85	49.82	0.58	56854.99	1856360.15	18.99	30.82
29.00	97636.50	97590.27	4771528.87	48.87	0.63	61481.87	1799505.17	18.43	30.44
30.00	97544.05	97491.80	4673938.60	47.92	0.62	60737.39	1738023.29	17.82	30.10
31.00	97439.56	97391.91	4576446.79	46.97	0.64	61843.86	1677285.90	17.21	29.75
32.00	97344.26	97292.57	4479054.88	46.01	0.64	62169.95	1615442.04	16.60	29.42
33.00	97240.87	97190.04	4381762.32	45.06	0.62	59869.07	1553272.09	15.97	29.09
34.00	97139.21	97087.67	4284572.28	44.11	0.64	62621.55	1493403.02	15.37	28.73
35.00	97036.13	96981.65	4187484.61	43.15	0.63	60904.48	1430781.48	14.74	28.41
36.00	96927.17	96866.06	4090502.96	42.20	0.62	60347.56	1369877.00	14.13	28.07
37.00	96804.95	96737.84	3993636.89	41.25	0.62	59590.51	1309529.44	13.53	27.73
38.00	96670.73	96600.32	3896899.06	40.31	0.60	57766.99	1249938.93	12.93	27.38
39.00	96529.91	96459.64	3800298.74	39.37	0.61	58551.00	1192171.94	12.35	27.02
40.00	96389.37	96309.07	3703839.09	38.43	0.61	58459.61	1133620.94	11.76	26.66
41.00	96228.77	96147.37	3607530.02	37.49	0.61	58457.60	1075161.33	11.17	26.32
42.00	96065.96	95977.49	3511382.65	36.55	0.58	56146.83	1016703.73	10.58	25.97
43.00	95889.02	95793.91	3415405.16	35.62	0.59	56805.79	960556.90	10.02	25.60
44.00	95698.80	95589.27	3319611.26	34.69	0.59	56110.90	903751.11	9.44	25.24
45.00	95479.75	95361.92	3224021.98	33.77	0.58	55596.00	847640.21	8.88	24.89
46.00	95244.08	95115.93	3128660.06	32.85	0.59	56213.51	792044.21	8.32	24.53
47.00	94987.78	94853.12	3033544.14	31.94	0.59	55583.93	735830.70	7.75	24.19
48.00	94718.46	94559.03	2938691.02	31.03	0.56	52953.06	680246.77	7.18	23.84
49.00	94399.60	94234.29	2844131.98	30.13	0.56	52394.26	627293.71	6.65	23.48
50.00	94068.97	93882.64	2749897.70	29.23	0.54	50227.21	574899.45	6.11	23.12

51.00	93696.31	93499.01	2656015.06	28.35	0.53	49273.98	524672.24	5.60	22.75
52.00	93301.71	93084.24	2562516.05	27.46	0.52	48683.06	475398.26	5.10	22.37
53.00	92866.78	92633.78	2469431.80	26.59	0.51	47428.50	426715.20	4.59	22.00
54.00	92400.79	92161.25	2376798.02	25.72	0.51	47186.56	379286.70	4.10	21.62
55.00	91921.71	91647.04	2284636.77	24.85	0.50	45823.52	332100.14	3.61	21.24
56.00	91372.37	91080.25	2192989.73	24.00	0.46	41623.67	286276.62	3.13	20.87
57.00	90788.12	90472.54	2101909.49	23.15	0.42	38360.36	244652.95	2.69	20.46
58.00	90156.96	89815.96	2011436.95	22.31	0.42	37543.07	206292.59	2.29	20.02
59.00	89474.96	89097.19	1921620.99	21.48	0.38	34302.42	168749.52	1.89	19.59
60.00	88719.42	88308.53	1832523.80	20.66	0.35	30554.75	134447.11	1.52	19.14
61.00	87897.65	87455.97	1744215.26	19.84	0.30	26586.62	103892.35	1.18	18.66
62.00	87014.30	86557.42	1656759.29	19.04	0.28	23803.29	77305.74	0.89	18.15
63.00	86100.54	85582.67	1570201.87	18.24	0.28	23706.40	53502.45	0.62	17.62
64.00	85064.79	84512.02	1484619.20	17.45	0.25	21043.49	29796.05	0.35	17.10
65.00	83959.25	83357.65	1400107.18	16.68	0.10	8752.55	8752.55	0.10	16.57

1989

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98787.25	98760.54	6051112.23	61.25	0.12	12048.79	2367133.36	23.96	37.29
17.00	98733.83	98700.60	5952351.69	60.29	0.23	22503.74	2355084.57	23.85	36.43
18.00	98667.37	98626.12	5853651.09	59.33	0.25	24656.53	2332580.83	23.64	35.69
19.00	98584.87	98544.94	5755024.97	58.38	0.22	21384.25	2307924.30	23.41	34.97
20.00	98505.00	98458.29	5656480.03	57.42	0.35	34460.40	2286540.05	23.21	34.21
21.00	98411.58	98362.23	5558021.74	56.48	0.42	41312.14	2252079.65	22.88	33.59
22.00	98312.88	98263.18	5459659.51	55.53	0.46	44808.01	2210767.51	22.49	33.05
23.00	98213.48	98159.86	5361396.33	54.59	0.51	50454.17	2165959.50	22.05	32.54
24.00	98106.24	98057.68	5263236.46	53.65	0.54	53441.44	2115505.33	21.56	32.08
25.00	98009.12	97949.70	5165178.78	52.70	0.58	56712.88	2062063.89	21.04	31.66
26.00	97890.29	97836.79	5067229.08	51.76	0.59	57919.38	2005351.02	20.49	31.28
27.00	97783.29	97728.51	4969392.29	50.82	0.62	60396.22	1947431.64	19.92	30.90
28.00	97673.73	97615.91	4871663.78	49.88	0.62	60229.02	1887035.42	19.32	30.56
29.00	97558.09	97500.24	4774047.87	48.94	0.63	61132.65	1826806.40	18.73	30.21
30.00	97442.39	97389.94	4676547.62	47.99	0.63	61063.49	1765673.75	18.12	29.87
31.00	97337.48	97284.77	4579157.69	47.04	0.65	63624.24	1704610.26	17.51	29.53
32.00	97232.07	97177.88	4481872.91	46.09	0.62	60541.82	1640986.02	16.88	29.22
33.00	97123.69	97060.11	4384695.03	45.15	0.66	63768.49	1580444.20	16.27	28.87
34.00	96996.53	96938.98	4287634.92	44.20	0.64	62331.76	1516675.70	15.64	28.57
35.00	96881.43	96820.60	4190695.94	43.26	0.63	60803.34	1454343.94	15.01	28.24
36.00	96759.78	96697.66	4093875.34	42.31	0.65	62563.38	1393540.60	14.40	27.91
37.00	96635.53	96573.05	3997177.68	41.36	0.64	61613.60	1330977.22	13.77	27.59
38.00	96510.56	96441.67	3900604.63	40.42	0.63	60854.70	1269363.61	13.15	27.26
39.00	96372.79	96300.16	3804162.96	39.47	0.63	60572.80	1208508.92	12.54	26.93
40.00	96227.53	96150.11	3707862.80	38.53	0.63	60863.02	1147936.12	11.93	26.60
41.00	96072.69	95986.58	3611712.70	37.59	0.62	59703.65	1087073.10	11.32	26.28
42.00	95900.46	95812.16	3515726.12	36.66	0.62	59882.60	1027369.45	10.71	25.95
43.00	95723.86	95618.16	3419913.96	35.73	0.59	56032.24	967486.85	10.11	25.62
44.00	95512.45	95405.68	3324295.80	34.80	0.59	56384.76	911454.61	9.54	25.26
45.00	95298.91	95181.30	3228890.12	33.88	0.59	55776.24	855069.85	8.97	24.91
46.00	95063.69	94935.35	3133708.82	32.96	0.58	55537.18	799293.61	8.41	24.56
47.00	94807.01	94671.70	3038773.47	32.05	0.59	55950.97	743756.43	7.84	24.21
48.00	94536.38	94389.41	2944101.77	31.14	0.57	53801.96	687805.45	7.28	23.87
49.00	94242.43	94075.61	2849712.36	30.24	0.55	52117.89	634003.49	6.73	23.51
50.00	93908.78	93733.33	2755636.75	29.34	0.54	50803.46	581885.60	6.20	23.15
51.00	93557.88	93364.96	2661903.43	28.45	0.55	51070.63	531082.14	5.68	22.78
52.00	93172.04	92966.14	2568538.47	27.57	0.54	50015.79	480011.51	5.15	22.42
53.00	92760.25	92536.11	2475572.32	26.69	0.52	48581.46	429995.72	4.64	22.05
54.00	92311.98	92063.08	2383036.21	25.82	0.51	46583.92	381414.26	4.13	21.68
55.00	91814.18	91546.38	2290973.13	24.95	0.49	44766.18	334830.34	3.65	21.31
56.00	91278.58	90985.20	2199426.75	24.10	0.47	43126.99	290064.16	3.18	20.92
57.00	90691.82	90382.30	2108441.54	23.25	0.46	41123.95	246937.18	2.72	20.53
58.00	90072.78	89731.05	2018059.24	22.40	0.41	37058.92	205813.23	2.28	20.12
59.00	89389.31	89023.12	1928328.20	21.57	0.40	35164.13	168754.31	1.89	19.68
60.00	88656.92	88255.77	1839305.08	20.75	0.34	30095.22	133590.18	1.51	19.24
61.00	87854.61	87430.91	1751049.31	19.93	0.31	26753.86	103494.96	1.18	18.75
62.00	87007.20	86550.18	1663618.41	19.12	0.29	25013.00	76741.10	0.88	18.24
63.00	86093.16	85595.17	1577068.22	18.32	0.26	22511.53	51728.10	0.60	17.72
64.00	85097.18	84552.05	1491473.05	17.53	0.24	20207.94	29216.57	0.34	17.18
65.00	84006.91	83413.25	1406921.01	16.75	0.11	9008.63	9008.63	0.11	16.64

1990

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed

16.00	98785.87	98759.88	6051930.86	61.26	0.11	11159.87	2406500.91	24.36	36.90
17.00	98733.88	98700.02	5953170.98	60.30	0.21	21023.10	2395341.04	24.26	36.03
18.00	98666.15	98628.20	5854470.96	59.34	0.26	25446.08	2374317.94	24.06	35.27
19.00	98590.26	98547.15	5755842.76	58.38	0.23	22764.39	2348871.86	23.82	34.56
20.00	98504.04	98458.20	5657295.60	57.43	0.35	34361.91	2326107.47	23.61	33.82
21.00	98412.36	98364.48	5558837.40	56.49	0.44	42985.28	2291745.56	23.29	33.20
22.00	98316.60	98266.58	5460472.93	55.54	0.49	48347.16	2248760.28	22.87	32.67
23.00	98216.56	98164.19	5362206.35	54.60	0.51	49769.24	2200413.12	22.40	32.19
24.00	98111.82	98058.89	5264042.16	53.65	0.56	54520.74	2150643.88	21.92	31.73
25.00	98005.96	97952.44	5165983.27	52.71	0.58	57302.18	2096123.14	21.39	31.32
26.00	97898.92	97842.91	5068030.82	51.77	0.62	60369.08	2038820.96	20.83	30.94
27.00	97786.90	97725.91	4970187.91	50.83	0.63	61176.42	1978451.88	20.23	30.59
28.00	97664.91	97605.90	4872462.01	49.89	0.64	62370.17	1917275.46	19.63	30.26
29.00	97546.89	97483.76	4774856.10	48.95	0.64	62487.09	1854905.29	19.02	29.93
30.00	97420.64	97358.84	4677372.34	48.01	0.67	65035.71	1792418.20	18.40	29.61
31.00	97297.05	97237.40	4580013.50	47.07	0.64	62718.12	1727382.49	17.75	29.32
32.00	97177.76	97116.76	4482776.10	46.13	0.66	63902.83	1664664.37	17.13	29.00
33.00	97055.76	96995.18	4385659.34	45.19	0.65	62852.88	1600761.54	16.49	28.69
34.00	96934.60	96872.48	4288664.16	44.24	0.66	63838.96	1537908.66	15.87	28.38
35.00	96810.35	96745.67	4191791.68	43.30	0.66	63368.41	1474069.70	15.23	28.07
36.00	96680.98	96616.54	4095046.01	42.36	0.66	63670.30	1410701.29	14.59	27.76
37.00	96552.10	96489.57	3998429.48	41.41	0.64	62042.79	1347030.99	13.95	27.46
38.00	96427.04	96356.35	3901939.91	40.47	0.65	62920.70	1284988.20	13.33	27.14
39.00	96285.66	96209.65	3805583.56	39.52	0.64	62055.22	1222067.50	12.69	26.83
40.00	96133.64	96057.33	3709373.91	38.59	0.63	60612.18	1160012.28	12.07	26.52
41.00	95981.02	95897.27	3613316.57	37.65	0.64	60990.66	1099400.10	11.45	26.19
42.00	95813.51	95719.61	3517419.31	36.71	0.61	58101.80	1038409.44	10.84	25.87
43.00	95625.70	95527.07	3421699.70	35.78	0.63	60182.06	980307.64	10.25	25.53
44.00	95428.44	95322.29	3326172.63	34.86	0.61	57860.63	920125.58	9.64	25.21
45.00	95216.13	95105.51	3230850.34	33.93	0.61	58299.68	862264.95	9.06	24.88
46.00	94994.89	94873.60	3135744.83	33.01	0.59	55690.80	803965.28	8.46	24.55
47.00	94752.31	94616.83	3040871.24	32.09	0.60	56486.25	748274.48	7.90	24.20
48.00	94481.35	94338.93	2946254.41	31.18	0.58	54433.56	691788.23	7.32	23.86
49.00	94196.51	94040.39	2851915.48	30.28	0.57	54073.22	637354.67	6.77	23.51
50.00	93884.26	93704.02	2757875.09	29.38	0.57	53036.48	583281.44	6.21	23.16
51.00	93523.78	93328.99	2664171.07	28.49	0.55	51424.28	530244.97	5.67	22.82
52.00	93134.21	92921.05	2570842.07	27.60	0.54	50084.45	478820.69	5.14	22.46
53.00	92707.90	92478.26	2477921.02	26.73	0.53	48736.04	428736.24	4.62	22.10
54.00	92248.62	92011.66	2385442.76	25.86	0.52	47938.08	380000.20	4.12	21.74
55.00	91774.71	91508.62	2293431.10	24.99	0.47	43466.60	332062.13	3.62	21.37
56.00	91242.54	90966.61	2201922.48	24.13	0.46	42026.57	288595.53	3.16	20.97
57.00	90690.68	90385.47	2110955.87	23.28	0.46	41758.09	246568.96	2.72	20.56
58.00	90080.27	89753.12	2020570.40	22.43	0.42	37965.57	204810.87	2.27	20.16
59.00	89425.97	89053.17	1930817.28	21.59	0.40	35354.11	166845.30	1.87	19.73
60.00	88680.36	88304.27	1841764.11	20.77	0.34	29935.15	131491.19	1.48	19.29
61.00	87928.17	87494.80	1753459.84	19.94	0.31	27473.37	101556.04	1.15	18.79
62.00	87061.43	86597.41	1665965.05	19.14	0.28	24333.87	74082.68	0.85	18.28
63.00	86133.40	85633.10	1579367.63	18.34	0.27	23463.47	49748.81	0.58	17.76
64.00	85132.79	84612.98	1493734.53	17.55	0.21	17768.73	26285.34	0.31	17.24
65.00	84093.16	83496.19	1409121.56	16.76	0.10	8516.61	8516.61	0.10	16.66

1991

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98869.79	98844.86	6086632.07	61.56	0.10	10279.87	2384004.13	24.11	37.45
17.00	98819.93	98790.80	5987787.22	60.59	0.19	18671.46	2373724.26	24.02	36.57
18.00	98761.68	98723.73	5888996.41	59.63	0.25	25075.83	2355052.80	23.85	35.78
19.00	98685.77	98644.47	5790272.68	58.67	0.21	21208.56	2329976.97	23.61	35.06
20.00	98603.16	98555.82	5691628.22	57.72	0.34	33311.87	2308768.41	23.41	34.31
21.00	98508.47	98461.90	5593072.40	56.78	0.42	41452.46	2275456.55	23.10	33.68
22.00	98415.32	98361.68	5494610.50	55.83	0.48	47311.97	2234004.09	22.70	33.13
23.00	98308.04	98256.43	5396248.83	54.89	0.50	49422.98	2186692.12	22.24	32.65
24.00	98204.81	98152.83	5297992.40	53.95	0.55	53689.60	2137269.14	21.76	32.19
25.00	98100.84	98039.77	5199839.57	53.01	0.57	55882.67	2083579.54	21.24	31.77
26.00	97978.71	97920.12	5101799.80	52.07	0.59	58164.55	2027696.87	20.70	31.38
27.00	97861.54	97802.32	5003879.68	51.13	0.62	60246.23	1969532.32	20.13	31.01
28.00	97743.11	97678.14	4906077.35	50.19	0.59	58020.82	1909286.09	19.53	30.66
29.00	97613.18	97543.28	4808399.21	49.26	0.64	62232.61	1851265.27	18.97	30.29
30.00	97473.38	97403.27	4710855.93	48.33	0.64	61948.48	1789032.66	18.35	29.98
31.00	97333.17	97266.92	4613452.66	47.40	0.66	63904.37	1727084.18	17.74	29.65
32.00	97200.68	97135.91	4516185.73	46.46	0.65	63041.21	1663179.81	17.11	29.35
33.00	97071.14	97007.50	4419049.82	45.52	0.66	63539.91	1600138.60	16.48	29.04
34.00	96943.86	96880.28	4322042.32	44.58	0.64	62197.14	1536598.69	15.85	28.73
35.00	96816.71	96748.50	4225162.04	43.64	0.67	64821.50	1474401.55	15.23	28.41
36.00	96680.30	96611.07	4128413.54	42.70	0.67	64826.03	1409580.05	14.58	28.12
37.00	96541.84	96475.32	4031802.47	41.76	0.64	61647.73	1344754.02	13.93	27.83
38.00	96408.79	96338.19	3935327.15	40.82	0.64	61849.12	1283106.30	13.31	27.51
39.00	96267.59	96191.62	3838988.96	39.88	0.66	63294.08	1221257.18	12.69	27.19
40.00	96115.64	96033.32	3742797.34	38.94	0.62	59828.76	1157963.09	12.05	26.89
41.00	95950.99	95867.79	3646764.02	38.01	0.64	61451.26	1098134.34	11.44	26.56
42.00	95784.59	95696.94	3550896.23	37.07	0.63	60097.68	1036683.08	10.82	26.25
43.00	95609.28	95506.26	3455199.29	36.14	0.62	59213.88	976585.40	10.21	25.92
44.00	95403.24	95296.21	3359693.03	35.22	0.60	57368.32	917371.52	9.62	25.60
45.00	95189.19	95074.32	3264396.82	34.29	0.61	58090.41	860003.20	9.03	25.26

46.00	94959.46	94831.16	3169322.49	33.38	0.57	54338.26	801912.79	8.44	24.93
47.00	94702.87	94562.03	3074491.33	32.46	0.58	55318.79	747574.53	7.89	24.57
48.00	94421.20	94274.84	2979929.30	31.56	0.59	55339.33	692255.75	7.33	24.23
49.00	94128.48	93968.57	2885654.47	30.66	0.58	54689.71	636916.42	6.77	23.89
50.00	93808.67	93644.17	2791685.89	29.76	0.57	53096.24	582226.71	6.21	23.55
51.00	93479.67	93286.14	2698041.72	28.86	0.57	52799.96	529130.46	5.66	23.20
52.00	93092.61	92891.94	2604755.58	27.98	0.54	50161.65	476330.51	5.12	22.86
53.00	92691.27	92459.67	2511863.64	27.10	0.52	48541.32	426168.86	4.60	22.50
54.00	92228.06	91984.17	2419403.97	26.23	0.51	46727.96	377627.53	4.09	22.14
55.00	91740.27	91488.57	2327419.81	25.37	0.49	45195.35	330899.58	3.61	21.76
56.00	91236.87	90961.37	2235931.24	24.51	0.46	41387.42	285704.22	3.13	21.38
57.00	90685.86	90378.43	2144969.87	23.65	0.44	39405.00	244316.80	2.69	20.96
58.00	90071.00	89738.34	2054591.44	22.81	0.42	37959.32	204911.81	2.28	20.54
59.00	89405.69	89046.62	1964853.09	21.98	0.41	36152.93	166952.49	1.87	20.11
60.00	88687.56	88309.28	1875806.47	21.15	0.34	30466.70	130799.56	1.47	19.68
61.00	87930.99	87519.95	1787497.20	20.33	0.29	25730.86	100332.86	1.14	19.19
62.00	87108.90	86653.68	1699977.25	19.52	0.31	26775.99	74601.99	0.86	18.66
63.00	86198.47	85705.03	1613323.56	18.72	0.24	20997.73	47826.00	0.55	18.16
64.00	85211.60	84658.66	1527618.53	17.93	0.23	19894.79	26828.27	0.31	17.61
65.00	84105.73	83535.95	1442959.87	17.16	0.08	6933.48	6933.48	0.08	17.07

1992

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	98908.18	98886.84	6126665.23	61.94	0.10	9789.80	2303916.27	23.29	38.65
17.00	98865.50	98839.14	6027778.39	60.97	0.17	16901.49	2294126.48	23.20	37.76
18.00	98812.79	98781.80	5928939.25	60.00	0.21	20744.18	2277224.98	23.05	36.96
19.00	98750.82	98714.47	5830157.44	59.04	0.18	18262.18	2256480.80	22.85	36.19
20.00	98678.12	98636.12	5731442.98	58.08	0.30	29886.74	2238218.63	22.68	35.40
21.00	98594.12	98552.22	5632806.86	57.13	0.35	34591.83	2208331.88	22.40	34.73
22.00	98510.31	98466.13	5534254.64	56.18	0.43	42832.77	2173740.05	22.07	34.11
23.00	98421.95	98375.77	5435788.51	55.23	0.47	45941.49	2130907.29	21.65	33.58
24.00	98329.59	98280.18	5337412.73	54.28	0.49	47764.17	2084965.80	21.20	33.08
25.00	98230.77	98176.51	5239132.55	53.33	0.53	52426.26	2037201.63	20.74	32.60
26.00	98122.25	98065.26	5140956.04	52.39	0.57	56093.33	1984775.38	20.23	32.17
27.00	98008.26	97947.90	5042890.79	51.45	0.58	57299.52	1928682.05	19.68	31.77
28.00	97887.53	97824.69	4944942.89	50.52	0.59	57912.22	1871382.53	19.12	31.40
29.00	97761.85	97690.12	4847118.20	49.58	0.60	58614.07	1813470.32	18.55	31.03
30.00	97618.38	97544.58	4749428.08	48.65	0.61	59794.83	1754856.25	17.98	30.68
31.00	97470.78	97400.21	4651883.50	47.73	0.63	61556.93	1695061.42	17.39	30.34
32.00	97329.63	97261.34	4554483.29	46.79	0.64	61858.21	1633504.48	16.78	30.01
33.00	97193.05	97121.77	4457221.96	45.86	0.64	61866.57	1571646.27	16.17	29.69
34.00	97050.50	96986.41	4360100.18	44.93	0.62	60325.54	1509779.70	15.56	29.37
35.00	96922.31	96854.30	4263113.78	43.98	0.63	61405.62	1449454.16	14.95	29.03
36.00	96786.28	96720.69	4166259.48	43.05	0.63	60934.04	1388048.54	14.34	28.70
37.00	96655.10	96586.46	4069538.79	42.10	0.65	63070.96	1327114.50	13.73	28.37
38.00	96517.83	96446.98	3972952.32	41.16	0.64	61340.28	1264043.54	13.10	28.07
39.00	96376.14	96300.29	3876505.34	40.22	0.63	60765.48	1202703.26	12.48	27.74
40.00	96224.44	96141.70	3780205.05	39.29	0.66	62972.81	1141937.77	11.87	27.42
41.00	96058.95	95975.36	3684063.35	38.35	0.63	60080.57	1078964.96	11.23	27.12
42.00	95891.77	95801.93	3588087.99	37.42	0.62	59205.59	1018884.39	10.63	26.79
43.00	95712.10	95615.12	3492286.06	36.49	0.61	57942.76	959678.79	10.03	26.46
44.00	95518.13	95416.03	3396670.95	35.56	0.59	56486.29	901736.03	9.44	26.12
45.00	95313.94	95208.17	3301254.91	34.64	0.59	56648.86	845249.74	8.87	25.77
46.00	95102.41	94979.08	3206046.74	33.71	0.59	56132.64	788600.88	8.29	25.42
47.00	94855.76	94722.13	3111067.66	32.80	0.57	53707.45	732468.24	7.72	25.08
48.00	94588.49	94447.85	3016345.53	31.89	0.58	54401.96	678760.79	7.18	24.71
49.00	94307.20	94144.90	2921897.68	30.98	0.54	51308.97	624358.83	6.62	24.36
50.00	93982.59	93819.07	2827752.78	30.09	0.55	51694.31	573049.86	6.10	23.99
51.00	93655.55	93477.93	2733933.72	29.19	0.56	52441.12	521355.56	5.57	23.62
52.00	93300.30	93096.05	2640455.79	28.30	0.53	49061.62	468914.44	5.03	23.27
53.00	92891.80	92666.84	2547359.74	27.42	0.51	46982.09	419852.82	4.52	22.90
54.00	92441.88	92205.49	2454692.90	26.55	0.50	46287.16	372870.73	4.03	22.52
55.00	91969.11	91716.00	2362487.40	25.69	0.48	44115.40	326583.58	3.55	22.14
56.00	91462.89	91180.30	2270771.40	24.83	0.46	42125.30	282468.18	3.09	21.74
57.00	90897.71	90605.97	2179591.10	23.98	0.42	37692.08	240342.88	2.64	21.33
58.00	90314.23	89989.30	2088985.13	23.13	0.41	37075.59	202650.80	2.24	20.89
59.00	89664.38	89321.50	1998995.83	22.29	0.38	33763.53	165575.20	1.85	20.45
60.00	88978.63	88602.17	1909674.33	21.46	0.37	32428.39	131811.68	1.48	19.98
61.00	88225.71	87819.90	1821072.16	20.64	0.29	25643.41	99383.28	1.13	19.51
62.00	87414.08	86962.01	1733252.26	19.83	0.28	24349.36	73739.87	0.84	18.98
63.00	86509.94	86028.76	1646290.26	19.03	0.26	22539.54	49390.51	0.57	18.46
64.00	85547.59	85026.17	1560261.49	18.24	0.22	18875.81	26850.98	0.31	17.92
65.00	84504.76	83949.10	1475235.32	17.46	0.10	7975.16	7975.16	0.09	17.36

1993

Age	Number	Years	Years	Life ex-	Occupation	Years	Years	Expected	Expected

	alive at age x	lived in the age interval x	lived at age x and beyond	pectancy	rate	em-ployed at age x	em-ployed at age x and beyond	period em-ployed	period non-employed
16.00	98969.22	98950.62	6140649.52	62.05	0.06	6134.94	2218780.92	22.42	39.63
17.00	98932.02	98909.04	6041698.90	61.07	0.12	12363.63	2212645.99	22.37	38.70
18.00	98886.05	98857.48	5942789.87	60.10	0.18	18288.63	2200282.36	22.25	37.85
19.00	98828.92	98794.62	5843932.38	59.13	0.16	16004.73	2181993.72	22.08	37.05
20.00	98760.32	98724.98	5745137.77	58.17	0.26	25767.22	2165988.99	21.93	36.24
21.00	98689.63	98653.59	5646412.79	57.21	0.31	30977.23	2140221.78	21.69	35.53
22.00	98617.54	98581.20	5547759.20	56.26	0.40	39136.74	2109244.55	21.39	34.87
23.00	98544.85	98504.42	5449178.00	55.30	0.42	41076.34	2070107.81	21.01	34.29
24.00	98463.98	98421.29	5350673.58	54.34	0.46	45667.48	2029031.47	20.61	33.73
25.00	98378.60	98332.52	5252252.29	53.39	0.51	49952.92	1983363.99	20.16	33.23
26.00	98286.43	98230.32	5153919.77	52.44	0.53	52454.99	1933411.07	19.67	32.77
27.00	98174.22	98117.80	5055689.45	51.50	0.55	53866.67	1880956.08	19.16	32.34
28.00	98061.38	97999.65	4957571.65	50.56	0.57	55761.80	1827089.41	18.63	31.92
29.00	97937.93	97874.58	4859572.00	49.62	0.58	56473.63	1771327.60	18.09	31.53
30.00	97811.22	97741.74	4761697.42	48.68	0.60	58938.27	1714853.97	17.53	31.15
31.00	97672.26	97601.50	4663955.68	47.75	0.60	58560.90	1655915.71	16.95	30.80
32.00	97530.74	97459.21	4566354.18	46.82	0.61	59547.58	1597354.81	16.38	30.44
33.00	97387.67	97317.26	4468894.98	45.89	0.61	59558.17	1537807.23	15.79	30.10
34.00	97246.86	97177.16	4371577.71	44.95	0.64	62193.39	1478249.06	15.20	29.75
35.00	97107.47	97039.37	4274400.55	44.02	0.63	61231.84	1416055.68	14.58	29.43
36.00	96971.27	96902.33	4177361.17	43.08	0.61	58916.62	1354823.83	13.97	29.11
37.00	96833.40	96762.23	4080458.84	42.14	0.63	60766.68	1295907.22	13.38	28.76
38.00	96691.07	96622.53	3983696.61	41.20	0.64	61838.42	1235140.53	12.77	28.43
39.00	96553.99	96479.39	3887074.08	40.26	0.65	62615.13	1173302.11	12.15	28.11
40.00	96404.80	96321.79	3790594.68	39.32	0.61	58563.65	1110686.99	11.52	27.80
41.00	96238.79	96156.39	3694272.89	38.39	0.61	58463.08	1052123.34	10.93	27.45
42.00	96073.98	95981.30	3598116.50	37.45	0.61	58932.52	993660.25	10.34	27.11
43.00	95888.61	95793.03	3502135.20	36.52	0.60	57763.19	934727.74	9.75	26.77
44.00	95697.44	95594.43	3406342.18	35.59	0.58	55731.55	876964.54	9.16	26.43
45.00	95491.43	95371.60	3310747.74	34.67	0.58	55410.90	821232.99	8.60	26.07
46.00	95251.78	95135.81	3215376.14	33.76	0.57	54703.09	765822.09	8.04	25.72
47.00	95019.84	94886.67	3120240.33	32.84	0.57	54180.29	711118.99	7.48	25.35
48.00	94753.50	94610.17	3025353.66	31.93	0.55	52319.42	656938.71	6.93	25.00
49.00	94466.83	94307.86	2930743.49	31.02	0.57	53849.79	604619.28	6.40	24.62
50.00	94148.90	93977.72	2836435.63	30.13	0.54	50935.92	550769.49	5.85	24.28
51.00	93806.54	93635.47	2742457.91	29.24	0.52	48971.35	499833.57	5.33	23.91
52.00	93464.40	93276.14	2648822.44	28.34	0.54	50369.11	450862.22	4.82	23.52
53.00	93087.87	92865.42	2555546.30	27.45	0.51	47454.23	400493.10	4.30	23.15
54.00	92642.96	92404.51	2462680.88	26.58	0.46	42506.07	353038.87	3.81	22.77
55.00	92166.05	91916.02	2370276.38	25.72	0.45	41454.12	310532.80	3.37	22.35
56.00	91665.99	91395.04	2278360.36	24.86	0.41	37837.54	269078.68	2.94	21.92
57.00	91124.08	90840.18	2186965.32	24.00	0.42	38516.24	231241.13	2.54	21.46
58.00	90556.28	90245.06	2096125.14	23.15	0.38	34022.39	192724.89	2.13	21.02
59.00	89933.84	89593.16	2005880.08	22.30	0.36	32253.54	158702.51	1.76	20.54
60.00	89252.47	88872.54	1916286.92	21.47	0.35	31283.13	126448.97	1.42	20.05
61.00	88492.60	88097.54	1827414.38	20.65	0.28	24931.60	95165.83	1.08	19.58
62.00	87702.47	87270.39	1739316.84	19.83	0.28	23999.36	70234.23	0.80	19.03
63.00	86838.31	86367.11	1652046.45	19.02	0.24	20382.64	46234.87	0.53	18.49
64.00	85895.91	85375.96	1565679.34	18.23	0.21	17843.58	25852.24	0.30	17.93
65.00	84856.02	84301.68	1480303.37	17.44	0.10	8008.66	8008.66	0.09	17.35

1994

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life ex-pectancy	Occupation rate	Years em-ployed at age x	Years em-ployed at age x and beyond	Expected period em-ployed	Expected period non-employed
16.00	99056.83	99039.60	6174216.12	62.33	0.05	5051.02	2217915.33	22.39	39.94
17.00	99022.37	99001.50	6075176.52	61.35	0.12	11781.18	2212864.31	22.35	39.00
18.00	98980.62	98958.03	5976175.02	60.38	0.15	15338.49	2201083.13	22.24	38.14
19.00	98935.43	98908.43	5877216.99	59.40	0.15	15330.81	2185744.64	22.09	37.31
20.00	98881.43	98849.96	5778308.56	58.44	0.25	24317.09	2170413.83	21.95	36.49
21.00	98818.49	98785.67	5679458.61	57.47	0.32	31710.20	2146096.74	21.72	35.76
22.00	98752.85	98720.14	5580672.94	56.51	0.37	36526.45	2114386.54	21.41	35.10
23.00	98687.42	98649.91	5481952.80	55.55	0.44	43307.31	2077860.09	21.05	34.49
24.00	98612.39	98574.99	5383302.89	54.59	0.46	45147.35	2034552.78	20.63	33.96
25.00	98537.60	98493.30	5284727.90	53.63	0.49	48655.69	1989405.44	20.19	33.44
26.00	98449.01	98401.27	5186234.59	52.68	0.54	53333.49	1940749.74	19.71	32.97
27.00	98353.53	98295.28	5087833.32	51.73	0.56	55536.83	1887416.25	19.19	32.54
28.00	98237.03	98178.76	4989538.04	50.79	0.57	56158.25	1831879.42	18.65	32.14
29.00	98120.49	98051.79	4891359.28	49.85	0.58	57360.30	1775721.17	18.10	31.75
30.00	97983.09	97910.87	4793307.49	48.92	0.60	58844.43	1718360.87	17.54	31.38
31.00	97838.65	97766.69	4695396.62	47.99	0.60	58953.32	1659516.44	16.96	31.03
32.00	97694.73	97619.76	4597629.92	47.06	0.59	57790.90	1600563.12	16.38	30.68
33.00	97544.78	97467.97	4500010.16	46.13	0.62	60820.01	1542772.22	15.82	30.32
34.00	97391.16	97316.42	4402542.19	45.20	0.62	60141.55	1481952.21	15.22	29.99
35.00	97241.69	97170.96	4305225.77	44.27	0.62	60634.68	1421810.66	14.62	29.65
36.00	97100.23	97029.70	4208054.82	43.34	0.63	60740.59	1361175.99	14.02	29.32
37.00	96959.18	96889.45	4111025.11	42.40	0.63	60749.68	1300435.39	13.41	28.99
38.00	96819.71	96741.42	4014135.67	41.46	0.63	60560.13	1239685.71	12.80	28.66
39.00	96663.13	96585.04	3917394.25	40.53	0.64	62007.59	1179125.58	12.20	28.33
40.00	96506.95	96426.58	3820809.21	39.59	0.64	61809.44	1117117.99	11.58	28.02

41.00	96346.21	96265.62	3724382.63	38.66	0.64	61706.26	1055308.55	10.95	27.70
42.00	96185.04	96091.16	3628117.01	37.72	0.60	57558.60	993602.28	10.33	27.39
43.00	95997.28	95904.90	3532025.85	36.79	0.63	60036.47	936043.68	9.75	27.04
44.00	95812.52	95706.39	3436120.95	35.86	0.62	59242.25	876007.21	9.14	26.72
45.00	95600.26	95479.90	3340414.56	34.94	0.60	57478.90	816764.96	8.54	26.40
46.00	95359.55	95229.23	3244934.66	34.03	0.59	56375.70	759286.06	7.96	26.07
47.00	95098.91	94968.19	3149705.43	33.12	0.57	53846.96	702910.36	7.39	25.73
48.00	94837.47	94690.15	3054737.24	32.21	0.58	54541.52	649063.39	6.84	25.37
49.00	94542.83	94396.32	2960047.10	31.31	0.55	52201.16	594521.87	6.29	25.02
50.00	94249.81	94088.12	2865650.78	30.40	0.55	51466.20	542320.70	5.75	24.65
51.00	93926.43	93747.36	2771562.66	29.51	0.56	52498.52	490854.50	5.23	24.28
52.00	93568.29	93388.41	2677815.30	28.62	0.52	48188.42	438355.98	4.68	23.93
53.00	93208.53	93000.97	2584426.89	27.73	0.53	49569.52	390167.56	4.19	23.54
54.00	92793.41	92569.84	2491425.92	26.85	0.47	43137.54	340598.05	3.67	23.18
55.00	92346.26	92100.97	2398856.09	25.98	0.43	39327.11	297460.50	3.22	22.76
56.00	91855.67	91587.39	2306755.12	25.11	0.43	39657.34	258133.39	2.81	22.30
57.00	91319.11	91035.13	2215167.73	24.26	0.38	34957.49	218476.05	2.39	21.86
58.00	90751.15	90443.64	2124132.61	23.41	0.40	36358.34	183518.56	2.02	21.38
59.00	90136.12	89804.52	2033688.97	22.56	0.35	31072.36	147160.22	1.63	20.93
60.00	89472.92	89118.16	1943884.45	21.73	0.28	25131.32	116087.86	1.30	20.43
61.00	88763.40	88379.27	1854766.29	20.90	0.27	24127.54	90956.54	1.02	19.87
62.00	87995.14	87576.62	1766387.02	20.07	0.26	22945.08	66828.99	0.76	19.31
63.00	87158.10	86700.01	1678810.39	19.26	0.24	21154.80	43883.92	0.50	18.76
64.00	86241.91	85742.20	1592110.39	18.46	0.19	16376.76	22729.12	0.26	18.20
65.00	85242.49	84698.11	1506368.19	17.67	0.07	6352.36	6352.36	0.07	17.60

1995

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99127.18	99106.29	6181915.02	62.36	0.06	6045.48	2250257.72	22.70	39.66
17.00	99085.41	99064.40	6082808.73	61.39	0.11	10897.08	2244212.24	22.65	38.74
18.00	99043.40	99019.62	5983744.32	60.42	0.15	15050.98	2233315.16	22.55	37.87
19.00	98995.84	98968.38	5884724.70	59.44	0.15	14449.38	2218264.17	22.41	37.04
20.00	98940.91	98912.59	5785756.33	58.48	0.25	24431.41	2203814.79	22.27	36.20
21.00	98884.27	98854.46	5686843.74	57.51	0.30	29854.05	2179383.38	22.04	35.47
22.00	98824.65	98793.26	5587989.28	56.54	0.38	37640.23	2149529.34	21.75	34.79
23.00	98761.88	98723.70	5489196.01	55.58	0.43	42648.64	2111889.10	21.38	34.20
24.00	98685.52	98646.80	5390472.32	54.62	0.48	47646.40	2069240.46	20.97	33.65
25.00	98608.08	98564.39	5291825.52	53.67	0.52	50760.66	2021594.06	20.50	33.16
26.00	98520.70	98475.54	5193261.12	52.71	0.52	51108.81	1970833.40	20.00	32.71
27.00	98430.37	98376.40	5094785.58	51.76	0.59	57746.95	1919724.59	19.50	32.26
28.00	98322.43	98264.20	4996409.18	50.82	0.59	57877.61	1861977.65	18.94	31.88
29.00	98205.97	98141.47	4898144.99	49.88	0.59	57510.90	1804100.03	18.37	31.51
30.00	98076.97	98009.47	4800003.52	48.94	0.60	58805.68	1746589.13	17.81	31.13
31.00	97941.98	97868.58	4701994.05	48.01	0.62	60580.65	1687783.45	17.23	30.78
32.00	97795.18	97716.82	4604125.47	47.08	0.61	60095.84	1627202.80	16.64	30.44
33.00	97638.46	97556.22	4506408.65	46.15	0.60	58826.40	1567106.96	16.05	30.10
34.00	97473.99	97390.39	4408852.43	45.23	0.63	61745.51	1508280.55	15.47	29.76
35.00	97306.80	97223.56	4311462.03	44.31	0.65	63486.98	1446535.05	14.87	29.44
36.00	97140.32	97060.57	4214238.48	43.38	0.63	60856.98	1383048.06	14.24	29.15
37.00	96980.83	96904.40	4117177.90	42.45	0.64	62018.81	1322191.08	13.63	28.82
38.00	96827.96	96754.57	4020273.51	41.52	0.66	63374.24	1260172.27	13.01	28.51
39.00	96681.18	96601.62	3923518.94	40.58	0.64	62018.24	1196798.03	12.38	28.20
40.00	96522.06	96434.29	3826917.32	39.65	0.65	62392.99	1134779.79	11.76	27.89
41.00	96346.53	96260.70	3730483.03	38.72	0.63	60451.72	1072386.80	11.13	27.59
42.00	96174.88	96091.50	3634222.33	37.79	0.62	59865.01	1011935.08	10.52	27.27
43.00	96008.12	95907.70	3538130.82	36.85	0.62	59942.31	952070.07	9.92	26.94
44.00	95807.28	95706.04	3442223.12	35.93	0.63	60103.39	892127.76	9.31	26.62
45.00	95604.80	95488.40	3346517.08	35.00	0.62	59202.81	832024.37	8.70	26.30
46.00	95372.00	95254.65	3251028.68	34.09	0.62	58867.37	772821.56	8.10	25.98
47.00	95137.30	95001.79	3155774.03	33.17	0.57	53961.02	713954.19	7.50	25.67
48.00	94866.29	94730.20	3060772.24	32.26	0.60	56648.66	659993.17	6.96	25.31
49.00	94594.12	94442.20	2966042.03	31.36	0.57	53643.17	603344.50	6.38	24.98
50.00	94290.27	94124.45	2871599.84	30.45	0.55	51580.20	549701.34	5.83	24.63
51.00	93958.64	93789.04	2777475.38	29.56	0.54	50833.66	498121.13	5.30	24.26
52.00	93619.43	93434.94	2683686.35	28.67	0.51	47838.69	447287.48	4.78	23.89
53.00	93250.44	93048.19	2590251.41	27.78	0.53	49687.73	399448.79	4.28	23.49
54.00	92845.93	92631.01	2497203.22	26.90	0.48	44926.04	349761.06	3.77	23.13
55.00	92416.09	92171.65	2404572.21	26.02	0.47	43505.02	304835.02	3.30	22.72
56.00	91927.22	91660.89	2312400.56	25.15	0.41	37855.95	261330.00	2.84	22.31
57.00	91394.56	91114.52	2220739.67	24.30	0.41	37812.53	223474.05	2.45	21.85
58.00	90834.47	90526.52	2129625.15	23.45	0.38	34852.71	185661.52	2.04	21.40
59.00	90218.57	89886.05	2039098.63	22.60	0.38	33707.27	150808.81	1.67	20.93
60.00	89553.53	89195.88	1949212.58	21.77	0.31	27383.14	117101.55	1.31	20.46
61.00	88838.24	88458.77	1860016.69	20.94	0.27	23618.49	89718.41	1.01	19.93
62.00	88079.30	87657.30	1771557.92	20.11	0.25	21563.70	66099.92	0.75	19.36
63.00	87235.31	86784.71	1683900.62	19.30	0.25	21522.61	44536.22	0.51	18.79
64.00	86334.12	85832.95	1597115.91	18.50	0.20	16909.09	23013.61	0.27	18.23
65.00	85331.79	84784.99	1511282.95	17.71	0.07	6104.52	6104.52	0.07	17.64

1996

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99106.81	99088.42	6195569.19	62.51	0.06	6044.39	2305707.70	23.26	39.25
17.00	99070.03	99046.61	6096480.77	61.54	0.10	10102.75	2299663.31	23.21	38.32
18.00	99023.18	98999.30	5997434.16	60.57	0.15	14453.90	2289560.56	23.12	37.44
19.00	98975.42	98949.96	5898434.86	59.59	0.16	15535.14	2275106.66	22.99	36.61
20.00	98924.50	98898.83	5799484.90	58.63	0.26	25614.80	2259571.51	22.84	35.78
21.00	98873.16	98844.20	5700586.07	57.66	0.32	31432.45	2233956.72	22.59	35.06
22.00	98815.24	98782.32	5601741.87	56.69	0.38	37833.63	2202524.26	22.29	34.40
23.00	98749.41	98716.27	5502959.55	55.73	0.43	42250.56	2164690.63	21.92	33.81
24.00	98683.13	98647.30	5404243.28	54.76	0.48	47745.29	2122440.07	21.51	33.26
25.00	98611.46	98572.82	5305595.98	53.80	0.51	50469.29	2074694.78	21.04	32.76
26.00	98534.18	98492.69	5207023.16	52.84	0.57	56337.82	2024225.49	20.54	32.30
27.00	98451.19	98406.60	5108530.47	51.89	0.61	59929.62	1967887.67	19.99	31.90
28.00	98362.01	98309.62	5010123.87	50.94	0.60	59379.01	1907958.05	19.40	31.54
29.00	98257.22	98190.77	4911814.25	49.99	0.62	60681.89	1848579.05	18.81	31.18
30.00	98124.32	98055.70	4813623.48	49.06	0.62	61088.70	1787897.15	18.22	30.84
31.00	97987.08	97914.05	4715567.79	48.12	0.62	60608.79	1726808.45	17.62	30.50
32.00	97841.01	97763.49	4617653.74	47.20	0.63	61688.76	1666199.66	17.03	30.17
33.00	97685.96	97611.20	4519890.25	46.27	0.64	62764.00	1604510.90	16.43	29.84
34.00	97536.44	97454.88	4422279.06	45.34	0.65	63150.76	1541746.90	15.81	29.53
35.00	97373.31	97293.88	4324824.18	44.41	0.64	62365.38	1478596.14	15.18	29.23
36.00	97214.46	97137.39	4227530.30	43.49	0.68	65956.29	1416230.76	14.57	28.92
37.00	97060.32	96980.38	4130392.91	42.55	0.64	62067.44	1350274.47	13.91	28.64
38.00	96900.44	96824.33	4033412.52	41.62	0.66	64000.88	1288207.02	13.29	28.33
39.00	96748.23	96670.30	3936588.19	40.69	0.66	63705.73	1224206.14	12.65	28.04
40.00	96592.37	96505.72	3839917.89	39.75	0.65	62632.21	1160500.41	12.01	27.74
41.00	96419.07	96329.02	3743412.18	38.82	0.65	62324.88	1097868.20	11.39	27.44
42.00	96238.98	96151.10	3647083.15	37.90	0.63	60671.34	1035543.33	10.76	27.14
43.00	96063.22	95961.51	3550932.05	36.96	0.62	59879.98	974871.98	10.15	26.82
44.00	95859.79	95759.87	3454970.55	36.04	0.64	61573.60	914992.00	9.55	26.50
45.00	95659.96	95551.36	3359210.68	35.12	0.64	61535.07	853418.40	8.92	26.19
46.00	95442.76	95329.33	3263659.32	34.19	0.60	57102.27	791883.33	8.30	25.90
47.00	95215.90	95092.35	3168329.99	33.28	0.62	58957.26	734781.06	7.72	25.56
48.00	94968.80	94829.26	3073237.64	32.36	0.58	55475.11	675823.81	7.12	25.24
49.00	94689.71	94540.58	2978408.38	31.45	0.60	56629.81	620348.69	6.55	24.90
50.00	94391.45	94229.85	2883867.80	30.55	0.58	54370.62	563718.88	5.97	24.58
51.00	94068.25	93893.60	2789637.96	29.66	0.55	51547.59	509348.26	5.41	24.24
52.00	93718.96	93526.58	2695744.36	28.76	0.54	50410.83	457800.67	4.88	23.88
53.00	93334.20	93127.52	2602217.78	27.88	0.52	48053.80	407389.85	4.36	23.52
54.00	92920.84	92710.29	2509090.26	27.00	0.52	48023.93	359336.05	3.87	23.14
55.00	92499.73	92269.06	2416379.97	26.12	0.46	42720.58	311312.12	3.37	22.76
56.00	92038.39	91769.36	2324110.91	25.25	0.44	40653.83	268591.54	2.92	22.33
57.00	91500.33	91224.34	2232341.55	24.40	0.41	37128.31	227937.72	2.49	21.91
58.00	90948.36	90639.53	2141117.20	23.54	0.38	34533.66	190809.41	2.10	21.44
59.00	90330.71	90002.39	2050477.67	22.70	0.39	35190.94	156275.75	1.73	20.97
60.00	89674.08	89319.62	1960475.28	21.86	0.33	29743.43	121084.81	1.35	20.51
61.00	88965.16	88597.76	1871155.66	21.03	0.30	26933.72	91341.38	1.03	20.01
62.00	88230.36	87822.07	1782557.90	20.20	0.24	21340.76	64407.66	0.73	19.47
63.00	87413.77	86971.71	1694735.83	19.39	0.22	19394.69	43066.90	0.49	18.89
64.00	86529.66	86050.98	1607764.12	18.58	0.20	17038.09	23672.21	0.27	18.31
65.00	85572.31	85052.70	1521713.14	17.78	0.08	6634.11	6634.11	0.08	17.71

1997

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99179.00	99159.23	6242337.17	62.94	0.06	5453.76	2370847.13	23.90	39.04
17.00	99139.47	99118.07	6143177.94	61.97	0.10	10209.16	2365393.37	23.86	38.11
18.00	99096.66	99072.27	6044059.87	60.99	0.14	14365.48	2355184.21	23.77	37.23
19.00	99047.87	99019.55	5944987.61	60.02	0.16	16140.19	2340818.73	23.63	36.39
20.00	98991.23	98965.10	5845968.06	59.06	0.26	25335.07	2324678.55	23.48	35.57
21.00	98938.97	98913.70	5747002.96	58.09	0.33	32542.61	2299343.48	23.24	34.85
22.00	98888.44	98861.03	5648089.26	57.12	0.39	38753.52	2266800.87	22.92	34.19
23.00	98833.62	98805.38	5549228.23	56.15	0.46	45648.08	2228047.35	22.54	33.60
24.00	98777.14	98748.60	5450422.85	55.18	0.52	51645.52	2182399.27	22.09	33.08
25.00	98720.06	98684.76	5351674.26	54.21	0.56	55164.78	2130753.75	21.58	32.63
26.00	98649.46	98618.43	5252989.50	53.25	0.58	57100.07	2075588.97	21.04	32.21
27.00	98587.40	98546.99	5154371.06	52.28	0.63	61887.51	2018488.90	20.47	31.81
28.00	98506.58	98465.71	5055824.07	51.32	0.66	65282.77	1956601.39	19.86	31.46
29.00	98424.85	98377.88	4957358.36	50.37	0.63	62371.57	1891318.62	19.22	31.15
30.00	98330.91	98279.64	4858980.48	49.41	0.65	63586.93	1828947.04	18.60	30.81
31.00	98228.37	98173.67	4760700.85	48.47	0.64	62929.33	1765360.12	17.97	30.49
32.00	98118.98	98062.29	4662527.17	47.52	0.62	60896.68	1702430.79	17.35	30.17
33.00	98005.59	97942.95	4564464.89	46.57	0.65	64054.69	1641534.11	16.75	29.82
34.00	97880.30	97818.47	4466521.94	45.63	0.64	62212.55	1577479.43	16.12	29.52
35.00	97756.64	97695.00	4368703.47	44.69	0.64	62915.58	1515266.88	15.50	29.19

36.00	97633.36	97570.32	4271008.47	43.75	0.66	64006.13	1452351.30	14.88	28.87
37.00	97507.27	97437.81	4173438.15	42.80	0.64	62555.07	1388345.17	14.24	28.56
38.00	97368.35	97298.84	4076000.34	41.86	0.66	63730.74	1325790.10	13.62	28.25
39.00	97229.33	97153.98	3978701.50	40.92	0.68	65773.25	1262059.36	12.98	27.94
40.00	97078.63	97003.38	3881547.51	39.98	0.68	66059.30	1196286.11	12.32	27.66
41.00	96928.12	96848.03	3784544.14	39.04	0.67	64597.64	1130226.81	11.66	27.38
42.00	96767.94	96681.84	3687696.11	38.11	0.66	64293.42	1065629.17	11.01	27.10
43.00	96595.73	96506.31	3591014.27	37.18	0.65	62729.10	1001335.75	10.37	26.81
44.00	96416.89	96316.49	3494507.96	36.24	0.63	60486.76	938606.65	9.73	26.51
45.00	96216.10	96106.37	3398191.47	35.32	0.62	60066.48	878119.89	9.13	26.19
46.00	95996.65	95877.32	3302085.09	34.40	0.65	62224.38	818053.41	8.52	25.88
47.00	95757.98	95640.20	3206207.78	33.48	0.61	58053.60	755829.03	7.89	25.59
48.00	95522.42	95393.66	3110567.57	32.56	0.61	58380.92	697775.43	7.30	25.26
49.00	95264.90	95108.30	3015173.91	31.65	0.61	57635.63	639394.50	6.71	24.94
50.00	94951.71	94800.58	2920065.61	30.75	0.58	55363.54	581758.87	6.13	24.63
51.00	94649.45	94472.20	2825265.03	29.85	0.57	53943.63	526395.34	5.56	24.29
52.00	94294.96	94114.16	2730792.83	28.96	0.56	53080.38	472451.71	5.01	23.95
53.00	93933.35	93737.48	2636678.67	28.07	0.53	49680.87	419371.32	4.46	23.61
54.00	93541.61	93327.50	2542941.19	27.19	0.51	47503.70	369690.46	3.95	23.23
55.00	93113.39	92892.78	2449613.69	26.31	0.49	45703.25	322186.76	3.46	22.85
56.00	92672.18	92429.98	2356720.91	25.43	0.47	43811.81	276483.51	2.98	22.45
57.00	92187.79	91912.40	2264290.93	24.56	0.43	39338.51	232671.70	2.52	22.04
58.00	91637.00	91339.68	2172378.53	23.71	0.40	36170.51	193333.19	2.11	21.60
59.00	91042.36	90725.87	2081038.85	22.86	0.38	34475.83	157162.68	1.73	21.13
60.00	90409.38	90065.80	1990312.98	22.01	0.33	29541.58	122686.85	1.36	20.66
61.00	89722.21	89355.47	1900247.18	21.18	0.29	26181.15	93145.27	1.04	20.14
62.00	88988.73	88585.96	1810891.71	20.35	0.28	24892.66	66964.12	0.75	19.60
63.00	88183.20	87749.83	1722305.75	19.53	0.22	19041.71	42071.46	0.48	19.05
64.00	87316.46	86837.88	1634555.92	18.72	0.20	17020.22	23029.75	0.26	18.46
65.00	86359.30	85850.34	1547718.04	17.92	0.07	6009.52	6009.52	0.07	17.85

1998

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99222.89	99203.93	6253243.08	63.02	0.06	6051.44	2445452.50	24.65	38.38
17.00	99184.98	99160.78	6154039.14	62.05	0.12	12196.78	2439401.06	24.59	37.45
18.00	99136.58	99109.59	6054878.36	61.08	0.16	16055.75	2427204.29	24.48	36.59
19.00	99082.60	99060.20	5955768.77	60.11	0.20	19812.04	2411148.53	24.33	35.77
20.00	99037.80	99010.53	5856708.57	59.14	0.30	29505.14	2391336.49	24.15	34.99
21.00	98983.27	98954.75	5757698.04	58.17	0.35	35029.98	2361831.36	23.86	34.31
22.00	98926.22	98897.31	5658743.29	57.20	0.39	38965.54	2326801.37	23.52	33.68
23.00	98868.40	98838.07	5559845.98	56.23	0.47	46651.57	2287835.83	23.14	33.09
24.00	98807.73	98777.26	5461007.91	55.27	0.54	53537.27	2241184.27	22.68	32.59
25.00	98746.78	98714.82	5362230.65	54.30	0.58	57057.16	2187646.99	22.15	32.15
26.00	98682.86	98650.23	5263515.84	53.34	0.62	61163.14	2130589.83	21.59	31.75
27.00	98617.60	98581.40	5164865.61	52.37	0.64	63289.26	2069426.69	20.98	31.39
28.00	98545.21	98506.66	5066284.20	51.41	0.66	64718.87	2006137.43	20.36	31.05
29.00	98468.10	98429.41	4967777.55	50.45	0.67	66144.57	1941418.55	19.72	30.73
30.00	98390.73	98347.21	4869348.13	49.49	0.65	64319.07	1875273.98	19.06	30.43
31.00	98303.69	98257.14	4771000.93	48.53	0.69	67797.43	1810954.91	18.42	30.11
32.00	98210.59	98161.78	4672743.79	47.58	0.66	64884.94	1743157.49	17.75	29.83
33.00	98112.97	98060.21	4574582.01	46.63	0.66	65111.98	1678272.55	17.11	29.52
34.00	98007.45	97956.36	4476521.79	45.68	0.67	66022.58	1613160.57	16.46	29.22
35.00	97905.26	97850.36	4378565.44	44.72	0.67	65755.44	1547137.98	15.80	28.92
36.00	97795.46	97737.25	4280715.08	43.77	0.68	66070.38	1481382.54	15.15	28.62
37.00	97679.05	97615.92	4182977.83	42.82	0.69	67062.14	1415312.16	14.49	28.33
38.00	97552.79	97486.55	4085361.91	41.88	0.67	65510.96	1348250.02	13.82	28.06
39.00	97420.30	97354.37	3987875.36	40.93	0.68	65811.55	1282739.07	13.17	27.77
40.00	97288.44	97216.38	3890520.99	39.99	0.67	65232.19	1216927.51	12.51	27.48
41.00	97144.32	97065.04	3793304.62	39.05	0.70	67557.27	1151695.32	11.86	27.19
42.00	96985.76	96905.51	3696239.58	38.11	0.67	65314.31	1084138.06	11.18	26.93
43.00	96825.26	96735.16	3599334.07	37.17	0.67	64425.61	1018823.74	10.52	26.65
44.00	96645.05	96548.97	3502598.91	36.24	0.64	62080.99	954398.13	9.88	26.37
45.00	96452.90	96350.39	3406049.94	35.31	0.64	61375.20	892317.14	9.25	26.06
46.00	96247.88	96138.37	3309699.55	34.39	0.64	61528.56	830941.94	8.63	25.75
47.00	96028.87	95905.18	3213561.17	33.46	0.64	61283.41	769413.38	8.01	25.45
48.00	95781.50	95649.52	3117655.99	32.55	0.63	60259.20	708129.97	7.39	25.16
49.00	95517.54	95375.48	3022006.47	31.64	0.59	56366.91	647870.77	6.78	24.86
50.00	95233.42	95075.12	2926630.99	30.73	0.59	56284.47	591503.86	6.21	24.52
51.00	94916.81	94757.84	2831555.87	29.83	0.60	56854.70	535219.39	5.64	24.19
52.00	94598.86	94415.99	2736798.03	28.93	0.58	54383.61	478364.69	5.06	23.87
53.00	94233.11	94040.09	2642382.04	28.04	0.55	51628.01	423981.08	4.50	23.54
54.00	93847.06	93635.02	2548341.96	27.15	0.52	48502.94	372353.07	3.97	23.19
55.00	93422.98	93192.61	2454706.94	26.28	0.49	45384.80	323850.13	3.47	22.81
56.00	92962.23	92729.63	2361514.33	25.40	0.50	46828.46	278465.33	3.00	22.41
57.00	92497.03	92235.08	2268784.70	24.53	0.44	40767.91	231636.87	2.50	22.02
58.00	91973.13	91681.17	2176549.62	23.67	0.41	37680.96	190868.96	2.08	21.59
59.00	91389.21	91074.09	2084868.45	22.81	0.38	34243.86	153188.00	1.68	21.14
60.00	90758.97	90417.07	1993794.35	21.97	0.31	28119.71	118944.14	1.31	20.66
61.00	90075.16	89695.73	1903377.29	21.13	0.28	25114.80	90824.43	1.01	20.12
62.00	89316.30	88923.01	1813681.56	20.31	0.25	21875.06	65709.63	0.74	19.57
63.00	88529.73	88105.06	1724758.54	19.48	0.24	20880.90	43834.57	0.50	18.99
64.00	87680.39	87203.77	1636653.49	18.67	0.20	17004.74	22953.67	0.26	18.40
65.00	86727.15	86216.43	1549449.72	17.87	0.07	5948.93	5948.93	0.07	17.80

1999

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99262.05	99244.25	6253958.98	63.00	0.06	6351.63	2552491.14	25.71	37.29
17.00	99226.45	99204.96	6154714.73	62.03	0.13	13293.47	2546139.51	25.66	36.37
18.00	99183.48	99157.63	6055509.77	61.05	0.18	18344.16	2532846.04	25.54	35.52
19.00	99131.78	99105.10	5956352.14	60.09	0.24	23983.43	2514501.88	25.37	34.72
20.00	99078.42	99051.05	5857247.04	59.12	0.33	32290.64	2490518.45	25.14	33.98
21.00	99023.68	98995.76	5758195.99	58.15	0.39	39004.33	2458227.80	24.82	33.33
22.00	98967.84	98940.26	5659200.23	57.18	0.46	45116.76	2419223.47	24.44	32.74
23.00	98912.68	98883.91	5560259.97	56.21	0.51	50233.03	2374106.71	24.00	32.21
24.00	98855.14	98826.99	5461376.06	55.25	0.57	56133.73	2323873.69	23.51	31.74
25.00	98798.84	98771.21	5362549.06	54.28	0.61	60744.30	2267739.96	22.95	31.32
26.00	98743.58	98713.96	5263777.85	53.31	0.65	63867.93	2206995.66	22.35	30.96
27.00	98684.35	98652.40	5165063.89	52.34	0.69	68267.46	2143127.73	21.72	30.62
28.00	98620.46	98587.08	5066411.49	51.37	0.69	68025.09	2074860.26	21.04	30.33
29.00	98553.71	98512.78	4967824.40	50.41	0.70	69254.49	2006835.18	20.36	30.04
30.00	98471.86	98432.51	4869311.62	49.45	0.70	69099.62	1937580.69	19.68	29.77
31.00	98393.15	98351.35	4770879.11	48.49	0.70	69337.70	1868481.07	18.99	29.50
32.00	98309.54	98263.69	4672527.77	47.53	0.70	69275.90	1799143.37	18.30	29.23
33.00	98217.84	98164.41	4574264.08	46.57	0.70	68420.60	1729867.47	17.61	28.96
34.00	98110.99	98060.51	4476099.66	45.62	0.70	68936.54	1661446.87	16.93	28.69
35.00	98010.03	97956.86	4378039.15	44.67	0.69	67492.28	1592510.34	16.25	28.42
36.00	97903.69	97846.57	4280082.29	43.72	0.70	68590.45	1525018.06	15.58	28.14
37.00	97789.45	97729.54	4182235.72	42.77	0.70	68703.87	1456427.61	14.89	27.87
38.00	97669.63	97606.62	4084506.18	41.82	0.69	67055.75	1387723.75	14.21	27.61
39.00	97543.61	97470.97	3986899.56	40.87	0.70	68229.68	1320668.00	13.54	27.33
40.00	97398.32	97325.69	3889428.59	39.93	0.69	67544.03	1252438.32	12.86	27.07
41.00	97253.07	97176.75	3792102.90	38.99	0.69	67149.14	1184894.29	12.18	26.81
42.00	97100.44	97021.80	3694926.15	38.05	0.72	69855.69	1117745.15	11.51	26.54
43.00	96943.16	96844.50	3597904.35	37.11	0.69	67210.08	1047889.46	10.81	26.30
44.00	96745.84	96646.95	3501059.85	36.19	0.69	66783.04	980679.38	10.14	26.05
45.00	96548.05	96437.38	3404412.90	35.26	0.66	63648.67	913896.34	9.47	25.80
46.00	96326.72	96215.23	3307975.52	34.34	0.68	64945.28	850247.66	8.83	25.51
47.00	96103.75	95978.05	3211760.28	33.42	0.65	62097.80	785302.38	8.17	25.25
48.00	95852.35	95714.23	3115782.24	32.51	0.65	62022.82	723204.58	7.54	24.96
49.00	95576.11	95433.79	3020068.01	31.60	0.62	59359.82	661181.76	6.92	24.68
50.00	95291.48	95137.30	2924634.22	30.69	0.61	58319.16	601821.94	6.32	24.38
51.00	94983.11	94816.31	2829496.92	29.79	0.62	58406.85	543502.78	5.72	24.07
52.00	94649.51	94465.80	2734680.61	28.89	0.57	54317.84	485095.93	5.13	23.77
53.00	94282.10	94084.55	2640214.81	28.00	0.57	54004.53	430778.10	4.57	23.43
54.00	93887.00	93679.00	2546130.26	27.12	0.52	48525.72	376773.57	4.01	23.11
55.00	93470.99	93238.57	2452451.26	26.24	0.51	47738.15	328247.84	3.51	22.73
56.00	93006.15	92760.19	2359212.69	25.37	0.48	44895.93	280509.70	3.02	22.35
57.00	92514.24	92246.12	2266452.49	24.50	0.46	42248.72	235613.76	2.55	21.95
58.00	91978.01	91692.67	2174206.37	23.64	0.41	37777.38	193365.04	2.10	21.54
59.00	91407.32	91085.99	2082513.70	22.78	0.37	34066.16	155587.66	1.70	21.08
60.00	90764.66	90419.39	1991427.71	21.94	0.33	30019.24	121521.50	1.34	20.60
61.00	90074.13	89698.53	1901008.32	21.10	0.27	24487.70	91502.26	1.02	20.09
62.00	89322.94	88936.99	1811309.79	20.28	0.25	21878.50	67014.56	0.75	19.53
63.00	88551.05	88110.51	1722372.79	19.45	0.23	20617.86	45136.06	0.51	18.94
64.00	87669.97	87208.29	1634262.29	18.64	0.20	17877.70	24518.20	0.28	18.36
65.00	86746.62	86240.26	1547053.99	17.83	0.08	6640.50	6640.50	0.08	17.76

2000

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99279.03	99260.77	6293722.73	63.39	0.05	5062.30	2646883.63	26.66	36.73
17.00	99242.50	99218.01	6194461.97	62.42	0.13	13295.21	2641821.33	26.62	35.80
18.00	99193.52	99169.80	6095243.96	61.45	0.21	20825.66	2628526.12	26.50	34.95
19.00	99146.09	99120.57	5996074.15	60.48	0.28	27357.28	2607700.46	26.30	34.18
20.00	99095.04	99066.34	5896953.59	59.51	0.35	34871.35	2580343.18	26.04	33.47
21.00	99037.64	99009.66	5797887.25	58.54	0.42	41980.09	2545471.83	25.70	32.84
22.00	98981.68	98954.51	5698877.59	57.58	0.47	46211.76	2503491.74	25.29	32.28
23.00	98927.34	98900.49	5599923.08	56.61	0.54	52911.76	2457279.98	24.84	31.77
24.00	98873.64	98842.69	5501022.59	55.64	0.59	58811.40	2404368.22	24.32	31.32
25.00	98811.74	98781.62	5402179.90	54.67	0.64	63417.80	2345556.82	23.74	30.93
26.00	98751.50	98719.81	5303398.28	53.70	0.67	66537.15	2282139.02	23.11	30.59
27.00	98688.11	98657.47	5204678.47	52.74	0.70	68764.26	2215601.87	22.45	30.29
28.00	98626.84	98592.35	5106021.00	51.77	0.71	69606.20	2146837.61	21.77	30.00
29.00	98557.87	98525.20	5007428.65	50.81	0.72	70741.10	2077231.41	21.08	29.73
30.00	98492.54	98454.79	4908903.45	49.84	0.74	73053.45	2006490.31	20.37	29.47

31.00	98417.03	98377.34	4810448.66	48.88	0.73	72208.96	1933436.86	19.65	29.23
32.00	98337.64	98294.63	4712071.32	47.92	0.72	70378.95	1861227.90	18.93	28.99
33.00	98251.62	98205.68	4613776.69	46.96	0.73	71493.74	1790848.94	18.23	28.73
34.00	98159.74	98113.12	4515571.01	46.00	0.71	70150.88	1719355.21	17.52	28.49
35.00	98066.50	98012.75	4417457.89	45.05	0.71	69589.05	1649204.33	16.82	28.23
36.00	97959.00	97900.40	4319445.14	44.09	0.71	69509.29	1579615.27	16.13	27.97
37.00	97841.80	97781.67	4221544.74	43.15	0.72	70207.24	1510105.99	15.43	27.71
38.00	97721.53	97657.45	4123763.07	42.20	0.73	71680.57	1439898.75	14.73	27.46
39.00	97593.37	97527.92	4026105.62	41.25	0.72	70122.57	1368218.18	14.02	27.23
40.00	97462.47	97382.96	3928577.70	40.31	0.72	70018.35	1298095.61	13.32	26.99
41.00	97303.45	97227.95	3831194.74	39.37	0.72	69809.67	1228077.26	12.62	26.75
42.00	97152.44	97066.86	3733966.80	38.43	0.71	68917.47	1158267.60	11.92	26.51
43.00	96981.28	96891.27	3636899.94	37.50	0.73	70343.06	1089350.12	11.23	26.27
44.00	96801.25	96700.95	3540008.67	36.57	0.69	66626.95	1019007.07	10.53	26.04
45.00	96600.65	96495.67	3443307.72	35.64	0.68	66003.04	952380.11	9.86	25.79
46.00	96390.69	96281.18	3346812.05	34.72	0.70	67589.39	886377.07	9.20	25.53
47.00	96171.66	96043.53	3250530.87	33.80	0.65	62716.42	818787.69	8.51	25.29
48.00	95915.39	95787.46	3154487.35	32.89	0.66	63507.09	756071.26	7.88	25.01
49.00	95659.54	95516.37	3058699.88	31.97	0.66	63040.81	692564.17	7.24	24.73
50.00	95373.21	95215.47	2963183.51	31.07	0.63	59795.31	629523.37	6.60	24.47
51.00	95057.73	94892.98	2867968.04	30.17	0.62	58454.08	569728.05	5.99	24.18
52.00	94728.23	94545.63	2773075.06	29.27	0.61	57956.47	511273.98	5.40	23.88
53.00	94363.02	94176.84	2678529.43	28.39	0.56	53115.74	453317.51	4.80	23.58
54.00	93990.66	93784.99	2584352.59	27.50	0.56	52144.46	400201.77	4.26	23.24
55.00	93579.33	93357.83	2490567.60	26.61	0.53	49479.65	348057.32	3.72	22.90
56.00	93136.33	92891.75	2397209.77	25.74	0.50	46167.20	298577.67	3.21	22.53
57.00	92647.18	92389.89	2304318.02	24.87	0.47	43423.25	252410.46	2.72	22.15
58.00	92132.59	91868.92	2211928.13	24.01	0.43	39411.76	208987.22	2.27	21.74
59.00	91605.24	91305.39	2120059.22	23.14	0.40	36248.24	169575.45	1.85	21.29
60.00	91005.55	90674.83	2028753.83	22.29	0.38	34093.74	133327.21	1.47	20.83
61.00	90344.12	89982.31	1938078.99	21.45	0.34	30414.02	99233.48	1.10	20.35
62.00	89620.49	89234.70	1848096.69	20.62	0.29	25610.36	68819.46	0.77	19.85
63.00	88848.91	88427.21	1758861.98	19.80	0.23	20338.26	43209.10	0.49	19.31
64.00	88005.50	87554.46	1670434.78	18.98	0.19	16635.35	22870.84	0.26	18.72
65.00	87103.42	86604.04	1582880.32	18.17	0.07	6235.49	6235.49	0.07	18.10

2001

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99339.95	99323.43	6322948.90	63.65	0.06	5462.79	2697242.16	27.15	36.50
17.00	99306.92	99284.95	6223625.46	62.67	0.13	12509.90	2691779.37	27.11	35.56
18.00	99262.98	99240.43	6124340.51	61.70	0.22	22031.37	2679269.47	26.99	34.71
19.00	99217.87	99192.46	6025100.09	60.73	0.29	29261.78	2657238.09	26.78	33.94
20.00	99167.04	99139.04	5925907.63	59.76	0.38	37375.42	2627976.32	26.50	33.26
21.00	99111.04	99086.26	5826768.59	58.79	0.43	42706.18	2590600.90	26.14	32.65
22.00	99061.48	99034.04	5727682.33	57.82	0.50	49913.16	2547894.72	25.72	32.10
23.00	99006.60	98981.21	5628648.29	56.85	0.54	53647.82	2497981.56	25.23	31.62
24.00	98955.82	98930.84	5529667.07	55.88	0.60	59457.43	2444333.74	24.70	31.18
25.00	98905.86	98878.78	5430736.23	54.91	0.66	65161.12	2384876.31	24.11	30.80
26.00	98851.71	98824.33	5331857.45	53.94	0.70	68880.56	2319715.19	23.47	30.47
27.00	98796.96	98768.61	5233033.11	52.97	0.73	71804.78	2250834.63	22.78	30.19
28.00	98740.26	98707.84	5134264.50	52.00	0.74	73438.63	2179029.85	22.07	29.93
29.00	98675.42	98643.37	5035556.67	51.03	0.74	73390.67	2105591.22	21.34	29.69
30.00	98611.32	98574.75	4936913.30	50.06	0.75	74128.21	2032200.55	20.61	29.46
31.00	98538.17	98500.51	4838338.55	49.10	0.74	72988.88	1958072.34	19.87	29.23
32.00	98462.85	98420.27	4739838.04	48.14	0.73	71945.22	1885083.46	19.15	28.99
33.00	98377.69	98331.46	4641417.77	47.18	0.74	73256.94	1813138.25	18.43	28.75
34.00	98285.24	98237.76	4543086.31	46.22	0.71	69552.34	1739881.31	17.70	28.52
35.00	98190.29	98140.16	4444848.54	45.27	0.72	70562.77	1670328.97	17.01	28.26
36.00	98090.02	98034.65	4346708.39	44.31	0.71	69310.49	1599766.20	16.31	28.00
37.00	97979.28	97921.19	4248673.74	43.36	0.71	69915.73	1530455.71	15.62	27.74
38.00	97863.11	97797.25	4150752.55	42.41	0.71	69240.45	1460539.97	14.92	27.49
39.00	97731.39	97661.16	4052955.30	41.47	0.72	70413.69	1391299.52	14.24	27.23
40.00	97590.93	97519.67	3955294.14	40.53	0.72	70409.20	1320885.83	13.53	26.99
41.00	97448.41	97372.51	3857774.48	39.59	0.71	69231.86	1250476.63	12.83	26.76
42.00	97296.62	97220.07	3760401.96	38.65	0.72	70095.67	1181244.77	12.14	26.51
43.00	97143.52	97056.33	3663181.90	37.71	0.71	69007.05	1111149.10	11.44	26.27
44.00	96969.13	96878.16	3566125.57	36.78	0.71	68783.49	1042142.06	10.75	26.03
45.00	96787.19	96685.81	3469247.41	35.84	0.69	66519.83	973358.56	10.06	25.79
46.00	96584.42	96475.16	3372561.61	34.92	0.70	68014.98	906838.73	9.39	25.53
47.00	96365.89	96244.31	3276086.45	34.00	0.68	65253.64	838823.74	8.70	25.29
48.00	96122.72	95992.64	3179842.14	33.08	0.66	63451.13	773570.10	8.05	25.03
49.00	95862.55	95717.50	3083849.51	32.17	0.66	63364.99	710118.97	7.41	24.76
50.00	95572.45	95418.05	2988132.01	31.27	0.66	63357.58	646753.99	6.77	24.50
51.00	95263.64	95104.19	2892713.96	30.37	0.62	59440.12	583396.40	6.12	24.24
52.00	94944.74	94764.80	2797609.77	29.47	0.60	57143.17	523956.28	5.52	23.95
53.00	94584.86	94386.60	2702844.97	28.58	0.58	54838.61	466813.11	4.94	23.64
54.00	94188.33	93986.51	2608458.37	27.69	0.54	50752.71	411974.49	4.37	23.32
55.00	93784.68	93551.75	2514471.86	26.81	0.54	50611.50	361221.78	3.85	22.96
56.00	93318.82	93083.44	2420920.11	25.94	0.49	45703.97	310610.28	3.33	22.61
57.00	92848.06	92576.72	2327836.67	25.07	0.49	45270.02	264906.31	2.85	22.22
58.00	92305.38	92025.21	2235259.95	24.22	0.47	43251.85	219636.30	2.38	21.84
59.00	91745.03	91465.34	2143234.75	23.36	0.41	37683.72	176384.45	1.92	21.44
60.00	91185.65	90858.87	2051769.41	22.50	0.38	34526.37	138700.73	1.52	20.98

61.00	90532.09	90183.45	1960910.54	21.66	0.33	29399.80	104174.36	1.15	20.51
62.00	89834.81	89461.91	1870727.09	20.82	0.32	28448.89	74774.56	0.83	19.99
63.00	89089.00	88675.01	1781265.18	19.99	0.24	21548.03	46325.67	0.52	19.47
64.00	88261.01	87808.19	1692590.17	19.18	0.20	18000.68	24777.64	0.28	18.90
65.00	87355.37	86884.16	1604781.98	18.37	0.08	6776.96	6776.96	0.08	18.29

2002

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99327.86	99311.47	6332641.34	63.75	0.06	6256.62	2727023.61	27.45	36.30
17.00	99295.09	99277.44	6233329.87	62.78	0.12	12111.85	2720766.99	27.40	35.37
18.00	99259.79	99238.35	6134052.43	61.80	0.20	20244.62	2708655.14	27.29	34.51
19.00	99216.91	99192.90	6034814.08	60.82	0.30	29361.10	2688410.52	27.10	33.73
20.00	99168.88	99140.86	5935621.18	59.85	0.35	34798.44	2659049.42	26.81	33.04
21.00	99112.83	99086.28	5836480.33	58.89	0.43	42309.84	2624250.98	26.48	32.41
22.00	99059.73	99029.83	5737394.05	57.92	0.48	48029.47	2581941.14	26.06	31.85
23.00	98999.93	98973.82	5638364.22	56.95	0.56	55029.45	2533911.67	25.60	31.36
24.00	98947.72	98922.95	5539390.39	55.98	0.62	61332.23	2478882.22	25.05	30.93
25.00	98898.18	98873.72	5440467.45	55.01	0.64	63279.18	2417549.99	24.44	30.57
26.00	98849.27	98822.01	5341593.72	54.04	0.71	69867.16	2354270.81	23.82	30.22
27.00	98794.76	98765.56	5242771.71	53.07	0.71	70518.61	2284403.65	23.12	29.94
28.00	98736.35	98706.91	5144006.15	52.10	0.75	73635.36	2213885.04	22.42	29.68
29.00	98677.47	98645.03	5045299.24	51.13	0.76	74970.23	2140249.68	21.69	29.44
30.00	98612.60	98577.78	4946654.21	50.16	0.75	74327.64	2065279.46	20.94	29.22
31.00	98542.96	98507.46	4848076.43	49.20	0.77	75555.22	1990951.81	20.20	28.99
32.00	98471.95	98433.31	4749568.97	48.23	0.73	71954.75	1915396.60	19.45	28.78
33.00	98394.67	98352.30	4651135.66	47.27	0.75	73960.93	1843441.84	18.74	28.54
34.00	98309.93	98264.94	4552783.36	46.31	0.75	73600.44	1769480.92	18.00	28.31
35.00	98219.94	98173.27	4454518.43	45.35	0.73	71764.66	1695880.48	17.27	28.09
36.00	98126.59	98074.54	4356345.16	44.40	0.72	70515.60	1624115.82	16.55	27.84
37.00	98022.49	97965.65	4258270.62	43.44	0.72	70829.16	1553600.23	15.85	27.59
38.00	97908.81	97851.33	4160304.97	42.49	0.75	73094.94	1482771.06	15.14	27.35
39.00	97793.86	97726.94	4062453.64	41.54	0.73	71536.12	1409676.12	14.41	27.13
40.00	97660.03	97590.02	3964726.69	40.60	0.74	72119.02	1338139.99	13.70	26.90
41.00	97520.00	97442.41	3867136.68	39.65	0.73	71230.40	1266020.97	12.98	26.67
42.00	97364.82	97287.70	3769694.27	38.72	0.73	70825.44	1194790.57	12.27	26.45
43.00	97210.58	97123.44	3672406.57	37.78	0.72	70317.37	1123965.13	11.56	26.22
44.00	97036.30	96941.54	3575283.13	36.84	0.71	68634.61	1053647.76	10.86	25.99
45.00	96846.78	96744.59	3478341.60	35.92	0.72	69559.36	985013.15	10.17	25.75
46.00	96642.41	96529.15	3381597.00	34.99	0.72	69211.40	915453.79	9.47	25.52
47.00	96415.90	96292.36	3285067.85	34.07	0.68	65767.68	846242.38	8.78	25.29
48.00	96168.82	96034.47	3188775.49	33.16	0.66	63862.92	780474.70	8.12	25.04
49.00	95900.12	95757.79	3092741.02	32.25	0.66	63104.38	716611.78	7.47	24.78
50.00	95615.45	95465.06	2996983.24	31.34	0.65	61670.43	653507.40	6.83	24.51
51.00	95314.67	95153.88	2901518.17	30.44	0.65	61850.02	591836.97	6.21	24.23
52.00	94993.08	94824.12	2806364.30	29.54	0.61	57653.07	529986.95	5.58	23.96
53.00	94655.16	94465.88	2711540.17	28.65	0.60	56301.67	472333.88	4.99	23.66
54.00	94276.60	94062.54	2617074.29	27.76	0.55	51452.21	416032.22	4.41	23.35
55.00	93848.47	93646.33	2523011.76	26.88	0.53	50007.14	364580.01	3.88	23.00
56.00	93444.18	93202.04	2429365.43	26.00	0.49	46135.01	314572.87	3.37	22.63
57.00	92959.89	92707.38	2336163.39	25.13	0.50	46168.28	268437.86	2.89	22.24
58.00	92454.87	92182.47	2243456.01	24.27	0.47	43233.58	222269.59	2.40	21.86
59.00	91910.07	91611.60	2151273.54	23.41	0.44	40767.16	179036.01	1.95	21.46
60.00	91313.12	90990.74	2059661.94	22.56	0.39	35577.38	138268.85	1.51	21.04
61.00	90668.35	90327.44	1968671.20	21.71	0.34	30982.31	102691.47	1.13	20.58
62.00	89986.54	89609.64	1878343.76	20.87	0.29	26076.41	71709.16	0.80	20.08
63.00	89232.75	88821.20	1788734.11	20.05	0.25	22294.12	45632.75	0.51	19.53
64.00	88409.64	87969.36	1699912.92	19.23	0.20	17505.90	23338.63	0.26	18.96
65.00	87529.08	87055.60	1611943.56	18.42	0.07	5832.73	5832.73	0.07	18.35

2003

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99335.71	99317.81	6329847.61	63.72	0.04	3972.71	2782471.76	28.01	35.71
17.00	99299.90	99278.97	6230529.80	62.74	0.12	11417.08	2778499.05	27.98	34.76
18.00	99258.04	99233.65	6131250.83	61.77	0.21	20938.30	2767081.97	27.88	33.89
19.00	99209.25	99182.98	6032017.18	60.80	0.30	30250.81	2746143.67	27.68	33.12
20.00	99156.71	99128.34	5932834.20	59.83	0.37	36677.49	2715892.86	27.39	32.44
21.00	99099.97	99073.49	5833705.86	58.87	0.46	45474.73	2679215.38	27.04	31.83
22.00	99047.01	99021.55	5734632.38	57.90	0.49	48916.65	2633740.64	26.59	31.31
23.00	98996.09	98969.52	5635610.82	56.93	0.56	54928.08	2584824.00	26.11	30.82
24.00	98942.95	98917.70	5536641.30	55.96	0.62	60933.31	2529895.91	25.57	30.39
25.00	98892.46	98864.78	5437723.60	54.99	0.68	67228.05	2468962.61	24.97	30.02

26.00	98837.10	98811.68	5338858.82	54.02	0.72	71144.41	2401734.56	24.30	29.72
27.00	98786.26	98759.02	5240047.14	53.04	0.76	74958.10	2330590.15	23.59	29.45
28.00	98731.79	98705.03	5141288.11	52.07	0.75	74028.77	2255632.05	22.85	29.23
29.00	98678.27	98646.97	5042583.08	51.10	0.77	76352.75	2181603.27	22.11	28.99
30.00	98615.66	98583.22	4943936.12	50.13	0.78	77190.66	2105250.52	21.35	28.79
31.00	98550.78	98514.52	4845352.90	49.17	0.78	77235.39	2028059.86	20.58	28.59
32.00	98478.27	98440.34	4746838.37	48.20	0.76	74913.10	1950824.48	19.81	28.39
33.00	98402.40	98361.75	4648398.04	47.24	0.73	71804.08	1875911.38	19.06	28.17
34.00	98321.10	98275.57	4550036.28	46.28	0.76	75180.81	1804107.30	18.35	27.93
35.00	98230.03	98184.41	4451760.71	45.32	0.74	73049.20	1728926.49	17.60	27.72
36.00	98138.80	98089.20	4353576.30	44.36	0.74	72291.74	1655877.28	16.87	27.49
37.00	98039.59	97988.30	4255487.10	43.41	0.75	73393.24	1583585.55	16.15	27.25
38.00	97937.01	97873.58	4157498.80	42.45	0.73	71251.97	1510192.31	15.42	27.03
39.00	97810.16	97748.73	4059625.22	41.51	0.75	72920.55	1438940.34	14.71	26.79
40.00	97687.30	97618.66	3961876.49	40.56	0.76	74092.56	1366019.79	13.98	26.57
41.00	97550.02	97471.29	3864257.83	39.61	0.73	70959.10	1291927.22	13.24	26.37
42.00	97392.57	97309.39	3766786.54	38.68	0.74	72495.50	1220968.12	12.54	26.14
43.00	97226.21	97137.97	3669477.15	37.74	0.74	71590.68	1148472.63	11.81	25.93
44.00	97049.73	96953.12	3572339.17	36.81	0.73	71066.63	1076881.94	11.10	25.71
45.00	96856.50	96751.77	3475386.06	35.88	0.72	69467.77	1005815.31	10.38	25.50
46.00	96647.03	96536.47	3378634.29	34.96	0.71	68927.04	936347.54	9.69	25.27
47.00	96425.90	96305.55	3282097.83	34.04	0.71	67991.72	867420.50	9.00	25.04
48.00	96185.21	96044.85	3185792.27	33.12	0.69	66174.90	799428.78	8.31	24.81
49.00	95904.50	95767.11	3089747.42	32.22	0.67	64547.03	733253.88	7.65	24.57
50.00	95629.71	95481.78	2993980.31	31.31	0.67	64163.75	668706.85	6.99	24.32
51.00	95333.84	95174.36	2898498.54	30.40	0.63	59674.32	604543.09	6.34	24.06
52.00	95014.87	94836.21	2803324.18	29.50	0.64	60220.99	544868.77	5.73	23.77
53.00	94657.54	94471.54	2708487.97	28.61	0.61	57722.11	484647.78	5.12	23.49
54.00	94285.55	94082.02	2614016.43	27.72	0.58	54191.24	426925.67	4.53	23.20
55.00	93878.49	93651.87	2519934.41	26.84	0.54	50478.36	372734.43	3.97	22.87
56.00	93425.25	93200.42	2426282.54	25.97	0.53	49116.62	322256.07	3.45	22.52
57.00	92975.59	92713.74	2333082.11	25.09	0.49	45151.59	273139.44	2.94	22.16
58.00	92451.88	92177.30	2240368.38	24.23	0.48	43968.57	227987.85	2.47	21.77
59.00	91902.71	91602.59	2148191.08	23.37	0.46	42137.19	184019.28	2.00	21.37
60.00	91302.46	90973.37	2056588.50	22.53	0.37	33478.20	141882.09	1.55	20.97
61.00	90644.28	90313.72	1965615.12	21.68	0.34	30435.72	108403.89	1.20	20.49
62.00	89983.15	89622.22	1875301.41	20.84	0.34	30023.44	77968.17	0.87	19.97
63.00	89261.29	88843.36	1785679.18	20.01	0.26	23543.49	47944.73	0.54	19.47
64.00	88425.42	87998.43	1696835.83	19.19	0.21	18391.67	24401.24	0.28	18.91
65.00	87571.43	87095.15	1608837.40	18.37	0.07	6009.57	6009.57	0.07	18.30

2004

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99368.97	99353.90	6379965.65	64.20	0.07	6656.71	2847112.25	28.65	35.55
17.00	99338.83	99318.13	6280611.74	63.22	0.11	10825.68	2840455.54	28.59	34.63
18.00	99297.42	99273.63	6181293.62	62.25	0.22	21641.65	2829629.86	28.50	33.75
19.00	99249.85	99227.52	6082019.98	61.28	0.31	31157.44	2807988.21	28.29	32.99
20.00	99205.20	99182.09	5982792.46	60.31	0.37	36300.65	2776830.77	27.99	32.32
21.00	99158.99	99136.11	5883610.37	59.34	0.48	47684.47	2740530.12	27.64	31.70
22.00	99113.24	99089.56	5784474.25	58.36	0.51	50634.77	2692845.65	27.17	31.19
23.00	99065.88	99040.45	5685384.69	57.39	0.59	58730.99	2642210.88	26.67	30.72
24.00	99015.02	98992.00	5586344.25	56.42	0.61	60583.10	2583479.90	26.09	30.33
25.00	98968.98	98943.82	5487352.25	55.45	0.70	69656.45	2522896.79	25.49	29.95
26.00	98918.67	98894.95	5388408.42	54.47	0.73	71797.73	2453240.34	24.80	29.67
27.00	98871.23	98845.14	5289513.48	53.50	0.77	76011.91	2381442.61	24.09	29.41
28.00	98819.06	98790.08	5190668.33	52.53	0.77	76463.52	2305430.70	23.33	29.20
29.00	98761.11	98733.84	5091878.25	51.56	0.80	79382.01	2228967.17	22.57	28.99
30.00	98706.58	98678.31	4993144.41	50.59	0.78	76673.05	2149585.17	21.78	28.81
31.00	98650.05	98616.73	4894466.10	49.61	0.80	79287.85	2072912.12	21.01	28.60
32.00	98583.41	98551.34	4795849.37	48.65	0.79	77461.35	1993624.27	20.22	28.42
33.00	98519.27	98482.86	4697298.03	47.68	0.77	75831.80	1916162.92	19.45	28.23
34.00	98446.44	98408.11	4598815.18	46.71	0.76	74691.76	1840331.12	18.69	28.02
35.00	98369.78	98326.57	4500407.06	45.75	0.77	75514.80	1765639.36	17.95	27.80
36.00	98283.35	98237.33	4402080.49	44.79	0.75	73677.99	1690124.55	17.20	27.59
37.00	98191.30	98135.75	4303843.17	43.83	0.75	73994.35	1616446.56	16.46	27.37
38.00	98080.19	98025.97	4205707.42	42.88	0.75	73715.53	1542452.21	15.73	27.15
39.00	97971.75	97906.85	4107681.45	41.93	0.75	73821.77	1468736.68	14.99	26.94
40.00	97841.96	97780.23	4009774.60	40.98	0.75	73530.73	1394914.91	14.26	26.73
41.00	97718.50	97649.27	3911994.37	40.03	0.76	74018.15	1321384.18	13.52	26.51
42.00	97580.04	97504.96	3814345.10	39.09	0.73	71471.14	1247366.03	12.78	26.31
43.00	97429.88	97349.51	3716840.14	38.15	0.76	74472.38	1175894.90	12.07	26.08
44.00	97269.14	97175.37	3619490.63	37.21	0.73	70840.84	1101422.52	11.32	25.89
45.00	97081.60	96977.18	3522315.26	36.28	0.73	70599.39	1030581.67	10.62	25.67
46.00	96872.76	96764.59	3425338.08	35.36	0.72	70154.33	959982.29	9.91	25.45
47.00	96656.43	96536.37	3328573.49	34.44	0.72	69216.58	889827.96	9.21	25.23
48.00	96416.32	96281.63	3232037.11	33.52	0.70	67300.86	820611.38	8.51	25.01
49.00	96146.93	96011.41	3135755.48	32.61	0.69	66727.93	753310.52	7.83	24.78
50.00	95875.89	95722.69	3039744.07	31.70	0.69	65761.49	686582.59	7.16	24.54
51.00	95569.49	95400.84	2944021.38	30.81	0.66	63441.56	620821.10	6.50	24.31
52.00	95232.18	95059.61	2848620.54	29.91	0.62	58746.84	557379.54	5.85	24.06
53.00	94887.05	94700.54	2753560.93	29.02	0.64	60134.84	498632.70	5.26	23.76
54.00	94514.04	94320.43	2658860.38	28.13	0.61	57629.78	438497.86	4.64	23.49
55.00	94126.82	93915.94	2564539.95	27.25	0.55	51841.60	380868.07	4.05	23.20

56.00	93705.06	93465.91	2470624.01	26.37	0.55	51219.32	329026.47	3.51	22.85
57.00	93226.76	92990.16	2377158.10	25.50	0.50	46402.09	277807.15	2.98	22.52
58.00	92753.56	92493.50	2284167.94	24.63	0.48	44581.87	231405.06	2.49	22.13
59.00	92233.43	91945.52	2191674.45	23.76	0.44	40639.92	186823.20	2.03	21.74
60.00	91657.61	91345.55	2099728.92	22.91	0.41	37817.06	146183.28	1.59	21.31
61.00	91033.49	90698.42	2008383.37	22.06	0.32	29114.19	108366.22	1.19	20.87
62.00	90363.34	90036.99	1917684.96	21.22	0.30	27371.24	79252.03	0.88	20.34
63.00	89710.63	89341.49	1827647.97	20.37	0.29	26177.06	51880.79	0.58	19.79
64.00	88972.36	88547.99	1738306.48	19.54	0.22	19303.46	25703.73	0.29	19.25
65.00	88123.63	87674.86	1649758.48	18.72	0.07	6400.26	6400.26	0.07	18.65

2005

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99399.92	99384.48	6381881.54	64.20	0.07	7255.07	2949707.15	29.68	34.53
17.00	99369.04	99349.91	6282497.05	63.22	0.12	12120.69	2942452.08	29.61	33.61
18.00	99330.78	99309.16	6183147.14	62.25	0.23	23337.65	2930331.39	29.50	32.75
19.00	99287.55	99262.29	6083837.98	61.27	0.35	35138.85	2906993.74	29.28	32.00
20.00	99237.03	99213.66	5984575.69	60.31	0.44	43753.22	2871854.89	28.94	31.37
21.00	99190.29	99166.21	5885362.03	59.33	0.53	52260.59	2828101.66	28.51	30.82
22.00	99142.12	99119.16	5786195.82	58.36	0.57	56894.40	2775841.07	28.00	30.36
23.00	99096.20	99073.14	5687076.66	57.39	0.61	60137.40	2718946.67	27.44	29.95
24.00	99050.09	99027.21	5588003.52	56.42	0.66	64961.85	2658809.28	26.84	29.57
25.00	99004.33	98980.07	5488976.31	55.44	0.72	71463.61	2593847.43	26.20	29.24
26.00	98955.81	98933.77	5389996.24	54.47	0.74	73606.73	2522383.82	25.49	28.98
27.00	98911.74	98887.58	5291062.47	53.49	0.77	75945.66	2448777.09	24.76	28.74
28.00	98863.41	98841.94	5192174.89	52.52	0.78	77393.24	2372831.43	24.00	28.52
29.00	98820.46	98795.96	5093332.95	51.54	0.81	80222.32	2295438.19	23.23	28.31
30.00	98771.45	98745.69	4994536.99	50.57	0.78	77021.64	2215215.87	22.43	28.14
31.00	98719.93	98689.45	4895791.30	49.59	0.79	77569.91	2138194.23	21.66	27.93
32.00	98658.97	98624.19	4797101.85	48.62	0.79	78307.61	2060624.33	20.89	27.74
33.00	98589.42	98555.36	4698477.66	47.66	0.80	79041.40	1982316.72	20.11	27.55
34.00	98521.31	98484.00	4599922.29	46.69	0.80	78885.68	1903275.31	19.32	27.37
35.00	98446.70	98402.99	4501438.29	45.72	0.76	74589.47	1824389.63	18.53	27.19
36.00	98359.28	98315.09	4403035.30	44.76	0.80	78652.07	1749800.16	17.79	26.97
37.00	98270.89	98221.33	4304720.22	43.80	0.76	74648.21	1671148.09	17.01	26.80
38.00	98171.76	98115.99	4206498.89	42.85	0.79	77805.98	1596499.89	16.26	26.59
39.00	98060.22	98002.22	4108382.90	41.90	0.78	76147.72	1518693.91	15.49	26.41
40.00	97944.22	97881.42	4010380.68	40.95	0.78	76347.51	1442546.18	14.73	26.22
41.00	97818.62	97749.20	3912499.26	40.00	0.75	73311.90	1366198.68	13.97	26.03
42.00	97679.77	97605.12	3814750.07	39.05	0.77	74960.73	1292886.78	13.24	25.82
43.00	97530.46	97452.62	3717144.95	38.11	0.76	73966.54	1217926.05	12.49	25.63
44.00	97374.78	97284.27	3619692.33	37.17	0.74	72379.50	1143959.51	11.75	25.42
45.00	97193.76	97097.68	3522408.06	36.24	0.75	72823.26	1071580.01	11.03	25.22
46.00	97001.61	96895.55	3425310.37	35.31	0.75	72865.45	998756.75	10.30	25.02
47.00	96789.49	96673.89	3328414.82	34.39	0.73	70185.24	925891.29	9.57	24.82
48.00	96558.29	96436.52	3231740.93	33.47	0.72	69627.17	855706.05	8.86	24.61
49.00	96314.75	96180.02	3135304.41	32.55	0.72	69538.15	786078.88	8.16	24.39
50.00	96045.28	95895.49	3039124.40	31.64	0.68	65017.14	716540.73	7.46	24.18
51.00	95745.69	95590.47	2943228.91	30.74	0.71	67486.87	651523.59	6.80	23.94
52.00	95435.26	95262.18	2847638.44	29.84	0.66	63349.35	584036.72	6.12	23.72
53.00	95089.10	94909.19	2752376.26	28.95	0.62	58938.61	520687.37	5.48	23.47
54.00	94729.28	94525.50	2657467.08	28.05	0.63	59834.64	461748.77	4.87	23.18
55.00	94321.72	94110.67	2562941.57	27.17	0.61	57125.18	401914.12	4.26	22.91
56.00	93899.62	93676.23	2468830.90	26.29	0.56	52177.66	344788.95	3.67	22.62
57.00	93452.83	93201.78	2375154.68	25.42	0.53	49396.95	292611.29	3.13	22.28
58.00	92950.74	92695.98	2281952.89	24.55	0.50	46811.47	243214.34	2.62	21.93
59.00	92441.23	92141.97	2189256.91	23.68	0.49	44965.28	196402.87	2.12	21.56
60.00	91842.71	91529.57	2097114.94	22.83	0.41	37527.13	151437.59	1.65	21.18
61.00	91216.44	90885.58	2005585.37	21.99	0.37	33445.89	113910.47	1.25	20.74
62.00	90554.72	90193.46	1914699.78	21.14	0.33	29673.65	80464.57	0.89	20.26
63.00	89832.20	89469.39	1824506.32	20.31	0.27	24335.68	50790.92	0.57	19.74
64.00	89106.59	88707.00	1735036.93	19.47	0.22	19515.54	26455.25	0.30	19.17
65.00	88307.41	87844.38	1646329.93	18.64	0.08	6939.71	6939.71	0.08	18.56

2006

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99433.07	99418.77	6437652.37	64.74	0.06	5468.03	3006861.43	30.24	34.50
17.00	99404.47	99388.01	6338233.60	63.76	0.14	13814.93	3001393.40	30.19	33.57
18.00	99371.55	99351.41	6238845.59	62.78	0.25	25036.56	2987578.47	30.06	32.72
19.00	99331.27	99311.94	6139494.18	61.81	0.33	32574.31	2962541.91	29.82	31.98
20.00	99292.60	99270.90	6040182.24	60.83	0.45	44969.72	2929967.60	29.51	31.32

21.00	99249.19	99227.53	5940911.35	59.86	0.50	50010.67	2884997.88	29.07	30.79
22.00	99205.86	99183.65	5841683.82	58.88	0.59	58915.09	2834987.21	28.58	30.31
23.00	99161.44	99141.87	5742500.17	57.91	0.64	63946.51	2776072.12	28.00	29.92
24.00	99122.31	99101.93	5643358.30	56.93	0.69	68677.64	2712125.61	27.36	29.57
25.00	99081.55	99060.48	5544256.37	55.96	0.74	73701.00	2643447.97	26.68	29.28
26.00	99039.40	99016.13	5445195.89	54.98	0.76	75648.32	2569746.98	25.95	29.03
27.00	98992.85	98970.42	5346179.76	54.01	0.79	78483.54	2494098.66	25.19	28.81
28.00	98947.98	98926.82	5247209.35	53.03	0.79	78448.96	2415615.12	24.41	28.62
29.00	98905.65	98883.35	5148282.53	52.05	0.81	80293.28	2337166.15	23.63	28.42
30.00	98861.06	98835.28	5049399.18	51.08	0.82	80946.09	2256872.87	22.83	28.25
31.00	98809.50	98782.01	4950563.90	50.10	0.82	81001.25	2175926.77	22.02	28.08
32.00	98754.52	98725.48	4851781.89	49.13	0.79	77598.23	2094925.53	21.21	27.92
33.00	98696.45	98667.64	4753056.40	48.16	0.81	79920.79	2017327.30	20.44	27.72
34.00	98638.84	98605.48	4654388.76	47.19	0.81	80067.65	1937406.51	19.64	27.54
35.00	98572.12	98535.96	4555783.28	46.22	0.79	78139.02	1857338.85	18.84	27.38
36.00	98499.79	98458.62	4457247.32	45.25	0.78	77191.56	1779199.84	18.06	27.19
37.00	98417.45	98372.33	4358788.70	44.29	0.79	77517.40	1702008.28	17.29	27.00
38.00	98327.21	98276.52	4260416.37	43.33	0.79	77343.62	1624490.88	16.52	26.81
39.00	98225.82	98165.88	4162139.85	42.37	0.79	77747.38	1547147.26	15.75	26.62
40.00	98105.94	98045.50	4063973.97	41.42	0.77	75691.13	1469399.88	14.98	26.45
41.00	97985.07	97922.90	3965928.46	40.47	0.78	76379.86	1393708.75	14.22	26.25
42.00	97860.74	97791.04	3868005.56	39.53	0.76	74223.40	1317328.89	13.46	26.06
43.00	97721.33	97640.14	3770214.52	38.58	0.79	76745.15	1243105.49	12.72	25.86
44.00	97558.94	97468.23	3672574.39	37.64	0.76	73685.98	1166360.35	11.96	25.69
45.00	97377.52	97286.02	3575106.16	36.71	0.77	74910.23	1092674.36	11.22	25.49
46.00	97194.51	97090.94	3477820.14	35.78	0.75	72429.84	1017764.13	10.47	25.31
47.00	96987.37	96878.43	3380729.20	34.86	0.74	71980.67	945334.29	9.75	25.11
48.00	96769.48	96645.38	3283850.77	33.93	0.75	72387.39	873353.62	9.03	24.91
49.00	96521.29	96396.76	3187205.39	33.02	0.73	70851.62	800966.23	8.30	24.72
50.00	96272.23	96127.48	3090808.63	32.10	0.72	68827.28	730114.61	7.58	24.52
51.00	95982.73	95824.60	2994681.14	31.20	0.70	67173.05	661287.33	6.89	24.31
52.00	95666.48	95496.52	2898856.54	30.30	0.67	63982.67	594114.28	6.21	24.09
53.00	95326.56	95141.51	2803360.02	29.41	0.67	63554.53	530131.61	5.56	23.85
54.00	94956.46	94759.62	2708218.51	28.52	0.61	58182.41	466577.08	4.91	23.61
55.00	94562.78	94356.66	2613458.89	27.64	0.59	55953.50	408394.68	4.32	23.32
56.00	94150.54	93924.62	2519102.23	26.76	0.62	58233.27	352441.18	3.74	23.01
57.00	93698.70	93454.97	2425177.61	25.88	0.56	51960.96	294207.91	3.14	22.74
58.00	93211.23	92946.79	2331722.64	25.02	0.50	46659.29	242246.95	2.60	22.42
59.00	92682.35	92409.18	2238775.85	24.16	0.46	42970.27	195587.66	2.11	22.05
60.00	92136.02	91821.91	2146366.67	23.30	0.42	38748.85	152617.39	1.66	21.64
61.00	91507.81	91196.65	2054544.75	22.45	0.36	33104.39	113868.54	1.24	21.21
62.00	90885.50	90534.30	1963348.10	21.60	0.32	29061.51	80764.16	0.89	20.71
63.00	90183.10	89814.20	1872813.80	20.77	0.27	24429.46	51702.65	0.57	20.19
64.00	89445.31	89056.85	1782999.60	19.93	0.22	20037.79	27273.19	0.30	19.63
65.00	88668.39	88236.52	1693942.75	19.10	0.08	7235.39	7235.39	0.08	19.02

2007

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99442.97	99429.53	6441015.70	64.77	0.06	6065.20	3026369.70	30.43	34.34
17.00	99416.09	99398.29	6341586.17	63.79	0.14	14114.56	3020304.50	30.38	33.41
18.00	99380.48	99361.04	6242187.88	62.81	0.22	22058.15	3006189.94	30.25	32.56
19.00	99341.60	99321.89	6142826.84	61.84	0.35	34861.98	2984131.79	30.04	31.80
20.00	99302.18	99281.38	6043504.95	60.86	0.43	43088.12	2949269.81	29.70	31.16
21.00	99260.58	99243.85	5944223.57	59.89	0.51	51011.34	2906181.69	29.28	30.61
22.00	99227.11	99207.12	5844979.72	58.91	0.57	57044.10	2855170.35	28.77	30.13
23.00	99187.13	99167.99	5745772.60	57.93	0.65	64161.69	2798126.25	28.21	29.72
24.00	99148.84	99128.52	5646604.61	56.95	0.66	65722.21	2733964.57	27.57	29.38
25.00	99108.21	99088.13	5547476.09	55.97	0.72	71541.63	2668242.35	26.92	29.05
26.00	99068.04	99045.87	5448387.96	55.00	0.76	75175.82	2596700.73	26.21	28.79
27.00	99023.70	99003.21	5349342.09	54.02	0.79	78113.53	2521524.91	25.46	28.56
28.00	98982.72	98960.92	5250338.88	53.04	0.79	77882.24	2443411.37	24.69	28.36
29.00	98939.11	98915.65	5151377.96	52.07	0.83	82297.82	2365529.13	23.91	28.16
30.00	98892.19	98867.27	5052462.31	51.09	0.81	80181.36	2283231.31	23.09	28.00
31.00	98842.35	98817.01	4953595.04	50.12	0.83	82413.39	2203049.96	22.29	27.83
32.00	98791.67	98767.35	4854778.03	49.14	0.81	79705.25	2120636.57	21.47	27.68
33.00	98743.04	98714.64	4756010.68	48.17	0.81	79662.71	2040931.32	20.67	27.50
34.00	98686.24	98654.66	4657296.04	47.19	0.81	80403.55	1961268.60	19.87	27.32
35.00	98623.07	98588.99	4558641.38	46.22	0.82	80842.97	1880865.06	19.07	27.15
36.00	98554.91	98515.86	4460052.39	45.25	0.80	79305.27	1800022.08	18.26	26.99
37.00	98476.81	98435.71	4361536.52	44.29	0.80	78650.13	1720716.81	17.47	26.82
38.00	98394.60	98347.36	4263100.82	43.33	0.78	76612.59	1642066.68	16.69	26.64
39.00	98300.13	98244.88	4164753.46	42.37	0.78	77023.99	1565454.09	15.93	26.44
40.00	98189.64	98130.52	4066508.57	41.41	0.76	74873.59	1488430.10	15.16	26.26
41.00	98071.40	98006.24	3968378.05	40.46	0.77	75072.78	1413556.51	14.41	26.05
42.00	97941.08	97863.61	3870371.81	39.52	0.78	76627.21	1338483.73	13.67	25.85
43.00	97786.15	97708.99	3772508.20	38.58	0.77	75431.34	1261856.52	12.90	25.67
44.00	97631.84	97549.41	3674799.21	37.64	0.78	76088.54	1186425.18	12.15	25.49
45.00	97466.98	97372.66	3577249.79	36.70	0.77	74782.20	1110336.64	11.39	25.31
46.00	97278.34	97182.04	3479877.13	35.77	0.75	72789.35	1035554.44	10.65	25.13
47.00	97085.74	96974.46	3382695.09	34.84	0.76	73797.57	962765.09	9.92	24.93
48.00	96863.19	96745.96	3285720.63	33.92	0.72	70044.07	888967.52	9.18	24.74
49.00	96628.72	96501.05	3188974.67	33.00	0.73	70542.27	818923.45	8.47	24.53
50.00	96373.38	96231.35	3092473.63	32.09	0.72	69286.58	748381.18	7.77	24.32

51.00	96089.33	95939.15	2996242.27	31.18	0.73	69651.83	679094.61	7.07	24.11
52.00	95788.97	95621.56	2900303.12	30.28	0.68	64927.04	609442.78	6.36	23.92
53.00	95454.15	95269.70	2804681.55	29.38	0.67	63830.70	544515.74	5.70	23.68
54.00	95085.24	94885.10	2709411.86	28.49	0.65	61390.66	480685.04	5.06	23.44
55.00	94684.95	94479.39	2614526.76	27.61	0.60	56593.15	419294.39	4.43	23.18
56.00	94273.83	94053.41	2520047.37	26.73	0.59	55209.35	362701.23	3.85	22.88
57.00	93832.99	93596.21	2425993.96	25.85	0.58	54192.21	307491.88	3.28	22.58
58.00	93359.44	93095.22	2332397.75	24.98	0.54	50736.90	253299.68	2.71	22.27
59.00	92831.01	92554.48	2239302.53	24.12	0.47	43593.16	202562.78	2.18	21.94
60.00	92277.95	91973.68	2146748.05	23.26	0.43	39640.66	158969.62	1.72	21.54
61.00	91669.41	91342.13	2054774.37	22.42	0.36	32974.51	119328.96	1.30	21.11
62.00	91014.85	90678.46	1963432.23	21.57	0.34	30377.28	86354.45	0.95	20.62
63.00	90342.06	89976.20	1872753.78	20.73	0.28	25373.29	55977.17	0.62	20.11
64.00	89610.34	89196.86	1782777.58	19.89	0.25	21942.43	30603.88	0.34	19.55
65.00	88783.38	88382.19	1693580.72	19.08	0.10	8661.45	8661.45	0.10	18.98

2008

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99465.65	99452.24	6470313.61	65.05	0.03	3083.02	2896463.63	29.12	35.93
17.00	99438.82	99421.52	6370861.38	64.07	0.07	7357.19	2893380.61	29.10	34.97
18.00	99404.21	99387.20	6271439.86	63.09	0.19	18982.95	2886023.42	29.03	34.06
19.00	99370.19	99349.92	6172052.66	62.11	0.28	27420.58	2867040.46	28.85	33.26
20.00	99329.64	99310.90	6072702.75	61.14	0.38	38234.70	2839619.89	28.59	32.55
21.00	99292.15	99275.38	5973391.85	60.16	0.46	45269.57	2801385.19	28.21	31.95
22.00	99258.61	99241.92	5874116.47	59.18	0.52	51109.59	2756115.62	27.77	31.41
23.00	99225.23	99207.62	5774874.55	58.20	0.60	59226.95	2705006.03	27.26	30.94
24.00	99190.02	99167.86	5675666.93	57.22	0.61	60591.56	2645779.08	26.67	30.55
25.00	99145.70	99126.26	5576499.07	56.25	0.66	65621.59	2585187.52	26.07	30.17
26.00	99106.82	99089.12	5477372.81	55.27	0.73	72136.88	2519565.93	25.42	29.84
27.00	99071.41	99050.44	5378283.69	54.29	0.73	72802.07	2447429.05	24.70	29.58
28.00	99029.46	99008.10	5279233.25	53.31	0.75	74058.06	2374626.98	23.98	29.33
29.00	98986.73	98965.39	5180225.16	52.33	0.75	74619.91	2300568.92	23.24	29.09
30.00	98944.06	98922.26	5081259.76	51.35	0.76	75279.84	2225949.02	22.50	28.86
31.00	98900.46	98877.95	4982337.50	50.38	0.77	75740.51	2150669.18	21.75	28.63
32.00	98855.44	98831.45	4883459.55	49.40	0.78	76594.38	2074928.67	20.99	28.41
33.00	98807.47	98780.85	4784628.10	48.42	0.77	76258.81	1998334.29	20.22	28.20
34.00	98754.23	98724.42	4685847.25	47.45	0.79	77992.29	1922075.48	19.46	27.99
35.00	98694.62	98661.01	4587122.83	46.48	0.77	75968.97	1844083.18	18.68	27.79
36.00	98627.39	98588.86	4488461.82	45.51	0.77	76110.60	1768114.21	17.93	27.58
37.00	98550.32	98511.29	4389872.96	44.54	0.76	74868.58	1692003.61	17.17	27.38
38.00	98472.27	98430.41	4291361.67	43.58	0.75	74216.53	1617135.03	16.42	27.16
39.00	98388.56	98340.19	4192931.26	42.62	0.75	74148.50	1542918.49	15.68	26.93
40.00	98291.82	98236.15	4094591.06	41.66	0.76	74855.94	1468769.99	14.94	26.71
41.00	98180.47	98120.25	3996354.92	40.70	0.75	73393.95	1393914.05	14.20	26.51
42.00	98060.03	97994.58	3898234.67	39.75	0.75	73299.95	1320520.10	13.47	26.29
43.00	97929.14	97855.34	3800240.09	38.81	0.74	72217.24	1247220.15	12.74	26.07
44.00	97781.54	97698.83	3702384.75	37.86	0.74	72199.44	1175002.91	12.02	25.85
45.00	97616.13	97523.80	3604685.92	36.93	0.75	73337.90	1102803.48	11.30	25.63
46.00	97431.48	97332.85	3507162.11	36.00	0.74	71636.98	1029465.58	10.57	25.43
47.00	97234.22	97124.06	3409829.26	35.07	0.72	70026.45	957828.60	9.85	25.22
48.00	97013.90	96897.69	3312705.20	34.15	0.73	70735.31	887802.15	9.15	25.00
49.00	96781.48	96648.02	3215807.51	33.23	0.72	69683.22	817066.84	8.44	24.79
50.00	96514.56	96367.09	3119159.50	32.32	0.72	69577.04	747383.62	7.74	24.57
51.00	96219.63	96069.43	3022792.40	31.42	0.68	64942.93	677806.58	7.04	24.37
52.00	95919.22	95750.55	2926722.97	30.51	0.68	65014.62	612863.64	6.39	24.12
53.00	95581.87	95402.90	2830972.43	29.62	0.67	63824.54	547849.02	5.73	23.89
54.00	95223.93	95033.48	2735569.53	28.73	0.62	59300.89	484024.48	5.08	23.64
55.00	94843.02	94637.12	2640536.05	27.84	0.61	57917.92	424723.59	4.48	23.36
56.00	94431.21	94216.94	2545898.93	26.96	0.60	56435.95	366805.68	3.88	23.08
57.00	94002.67	93765.98	2451681.99	26.08	0.57	53540.38	310369.73	3.30	22.78
58.00	93529.30	93270.60	2357916.01	25.21	0.51	47847.82	256829.35	2.75	22.46
59.00	93011.90	92746.47	2264645.41	24.35	0.51	47207.95	208981.54	2.25	22.10
60.00	92481.03	92173.26	2171898.95	23.48	0.40	36961.48	161773.58	1.75	21.74
61.00	91865.48	91560.49	2079725.69	22.64	0.39	35983.27	124812.11	1.36	21.28
62.00	91255.51	90909.51	1988165.20	21.79	0.32	29000.13	88828.84	0.97	20.81
63.00	90563.51	90208.27	1897255.69	20.95	0.31	28054.77	59828.70	0.66	20.29
64.00	89853.03	89477.65	1807047.42	20.11	0.26	22816.80	31773.93	0.35	19.76
65.00	89102.27	88684.45	1717569.77	19.28	0.10	8957.13	8957.13	0.10	19.18

2009

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed

16.00	99497.66	99488.36	6501861.52	65.35	0.02	1691.30	2713442.28	27.27	38.08
17.00	99479.07	99466.27	6402373.15	64.36	0.04	4078.12	2711750.98	27.26	37.10
18.00	99453.47	99435.49	6302906.88	63.38	0.10	9844.11	2707672.86	27.23	36.15
19.00	99417.51	99403.28	6203471.40	62.40	0.20	19880.66	2697828.75	27.14	35.26
20.00	99389.05	99374.53	6104068.12	61.42	0.28	27427.37	2677948.10	26.94	34.47
21.00	99360.02	99343.53	6004693.58	60.43	0.36	35664.33	2650520.72	26.68	33.76
22.00	99327.04	99311.29	5905350.05	59.45	0.45	44491.46	2614856.40	26.33	33.13
23.00	99295.54	99278.24	5806038.76	58.47	0.48	47256.44	2570364.94	25.89	32.59
24.00	99260.94	99244.28	5706760.52	57.49	0.56	55775.28	2523108.49	25.42	32.07
25.00	99227.61	99207.61	5607516.24	56.51	0.58	57143.58	2467333.21	24.87	31.65
26.00	99187.60	99167.35	5508308.63	55.53	0.66	64954.61	2410189.63	24.30	31.23
27.00	99147.10	99128.73	5409141.29	54.56	0.67	66713.63	2345235.02	23.65	30.90
28.00	99110.36	99090.24	5310012.56	53.58	0.69	68768.63	2278521.38	22.99	30.59
29.00	99070.12	99049.88	5210922.32	52.60	0.73	72009.26	2209752.76	22.30	30.29
30.00	99029.64	99010.10	5111872.44	51.62	0.71	70396.18	2137743.50	21.59	30.03
31.00	98990.56	98968.40	5012862.34	50.64	0.71	70465.50	2067347.31	20.88	29.76
32.00	98946.24	98924.43	4913893.94	49.66	0.74	73698.70	1996881.81	20.18	29.48
33.00	98902.62	98877.79	4814969.51	48.68	0.74	73070.68	1923183.11	19.45	29.24
34.00	98852.96	98824.31	4716091.72	47.71	0.74	72932.34	1850112.43	18.72	28.99
35.00	98795.66	98766.09	4617267.42	46.74	0.73	72099.24	1777180.09	17.99	28.75
36.00	98736.52	98702.42	4518501.33	45.76	0.71	70572.23	1705080.85	17.27	28.49
37.00	98668.33	98633.98	4419798.91	44.79	0.71	69832.86	1634508.61	16.57	28.23
38.00	98599.63	98557.47	4321164.93	43.83	0.74	73031.08	1564675.76	15.87	27.96
39.00	98515.31	98473.79	4222607.46	42.86	0.71	70211.81	1491644.67	15.14	27.72
40.00	98432.28	98381.05	4124133.66	41.90	0.73	71621.41	1421432.86	14.44	27.46
41.00	98329.82	98270.58	4025752.61	40.94	0.71	70165.19	1349811.45	13.73	27.21
42.00	98211.34	98149.42	3927482.03	39.99	0.73	71452.78	1279646.26	13.03	26.96
43.00	98087.50	98021.10	3829332.61	39.04	0.73	71359.36	1208193.48	12.32	26.72
44.00	97954.70	97882.79	3731311.52	38.09	0.72	70867.14	1136834.12	11.61	26.49
45.00	97810.89	97722.84	3633428.73	37.15	0.71	69187.77	1065966.98	10.90	26.25
46.00	97634.80	97540.27	3535705.88	36.21	0.73	70814.24	996779.21	10.21	26.00
47.00	97445.74	97339.51	3438165.61	35.28	0.72	69792.43	925964.97	9.50	25.78
48.00	97233.27	97124.13	3340826.11	34.36	0.70	67695.52	856172.55	8.81	25.55
49.00	97014.99	96888.23	3243701.97	33.44	0.68	66271.55	788477.03	8.13	25.31
50.00	96761.47	96623.76	3146813.74	32.52	0.70	67540.01	722205.48	7.46	25.06
51.00	96486.05	96341.56	3050189.99	31.61	0.68	65801.28	654665.47	6.79	24.83
52.00	96197.06	96044.30	2953848.43	30.71	0.65	62044.62	588864.19	6.12	24.58
53.00	95891.53	95718.05	2857804.13	29.80	0.65	62025.30	526819.57	5.49	24.31
54.00	95544.57	95345.10	2762086.08	28.91	0.61	58351.20	464794.27	4.86	24.04
55.00	95145.64	94947.49	2666740.98	28.03	0.61	58107.86	406443.07	4.27	23.76
56.00	94749.34	94530.83	2571793.49	27.14	0.57	53504.45	348335.21	3.68	23.47
57.00	94312.32	94075.58	2477262.66	26.27	0.53	50048.21	294830.76	3.13	23.14
58.00	93838.83	93588.86	2383187.08	25.40	0.53	49227.74	244782.55	2.61	22.79
59.00	93338.89	93071.41	2289598.22	24.53	0.48	44301.99	195554.81	2.10	22.43
60.00	92803.93	92522.37	2196526.81	23.67	0.40	36638.86	151252.82	1.63	22.04
61.00	92240.81	91931.07	2104004.44	22.81	0.33	30613.05	114613.96	1.24	21.57
62.00	91621.32	91288.07	2012073.37	21.96	0.33	29759.91	84000.91	0.92	21.04
63.00	90954.81	90600.18	1920785.31	21.12	0.28	25458.65	54241.00	0.60	20.52
64.00	90245.55	89871.32	1830185.13	20.28	0.24	21389.37	28782.35	0.32	19.96
65.00	89497.09	89072.04	1740313.80	19.45	0.08	7392.98	7392.98	0.08	19.36

2010

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99516.32	99506.84	6536486.20	65.68	0.01	895.56	2682926.24	26.96	38.72
17.00	99497.36	99486.82	6436979.36	64.69	0.03	3283.07	2682030.68	26.96	37.74
18.00	99476.29	99463.20	6337492.54	63.71	0.07	7459.74	2678747.61	26.93	36.78
19.00	99450.11	99435.60	6238029.34	62.73	0.15	15313.08	2671287.87	26.86	35.86
20.00	99421.10	99405.27	6138593.74	61.74	0.24	24155.48	2655974.79	26.71	35.03
21.00	99389.45	99376.67	6039188.46	60.76	0.32	31601.78	2631819.31	26.48	34.28
22.00	99363.90	99347.84	5939811.79	59.78	0.42	41428.05	2600217.53	26.17	33.61
23.00	99331.78	99316.79	5840463.95	58.80	0.47	46281.63	2558789.48	25.76	33.04
24.00	99301.81	99286.81	5741147.15	57.82	0.52	51231.99	2512507.85	25.30	32.51
25.00	99271.81	99254.97	5641860.34	56.83	0.57	56476.08	2461275.86	24.79	32.04
26.00	99238.13	99224.38	5542605.37	55.85	0.60	59534.63	2404799.78	24.23	31.62
27.00	99210.63	99194.77	5443380.99	54.87	0.68	67055.67	2345265.15	23.64	31.23
28.00	99178.92	99162.46	5344186.22	53.88	0.67	66637.17	2278209.48	22.97	30.91
29.00	99146.00	99127.61	5245023.76	52.90	0.72	71272.75	2211572.31	22.31	30.60
30.00	99109.22	99090.04	5145896.14	51.92	0.71	70353.93	2140299.56	21.60	30.33
31.00	99070.85	99052.08	5046806.11	50.94	0.70	69435.51	2069945.63	20.89	30.05
32.00	99033.31	99011.59	4947754.02	49.96	0.73	72080.43	2000510.12	20.20	29.76
33.00	98989.86	98966.87	4848742.44	48.98	0.72	71750.98	1928429.69	19.48	29.50
34.00	98943.88	98919.00	4749775.57	48.00	0.75	74387.09	1856678.70	18.76	29.24
35.00	98894.12	98866.91	4650856.56	47.03	0.72	71579.64	1782291.61	18.02	29.01
36.00	98839.70	98809.36	4551989.65	46.05	0.73	71933.21	1710711.97	17.31	28.75
37.00	98779.02	98745.75	4453180.29	45.08	0.73	72084.40	1638778.75	16.59	28.49
38.00	98712.49	98676.11	4354434.54	44.11	0.72	71540.18	1566694.35	15.87	28.24
39.00	98639.74	98598.80	4255758.42	43.14	0.75	73653.30	1495154.17	15.16	27.99
40.00	98557.87	98510.51	4157159.62	42.18	0.70	68760.34	1421500.87	14.42	27.76
41.00	98463.16	98411.96	4058649.11	41.22	0.73	71447.09	1352740.53	13.74	27.48
42.00	98360.77	98300.97	3960237.14	40.26	0.72	70875.00	1281293.44	13.03	27.24
43.00	98241.18	98176.03	3861936.17	39.31	0.72	70588.57	1210418.44	12.32	26.99
44.00	98110.88	98036.49	3763760.14	38.36	0.71	69409.84	1139829.87	11.62	26.74
45.00	97962.10	97882.45	3665723.65	37.42	0.71	69790.19	1070420.04	10.93	26.49

46.00	97802.79	97710.27	3567841.20	36.48	0.70	68788.03	1000629.85	10.23	26.25
47.00	97617.74	97516.92	3470130.94	35.55	0.69	67676.74	931841.83	9.55	26.00
48.00	97416.10	97309.67	3372614.02	34.62	0.69	67143.67	864165.08	8.87	25.75
49.00	97203.24	97083.30	3275304.35	33.70	0.71	69220.39	797021.41	8.20	25.50
50.00	96963.36	96831.79	3178221.05	32.78	0.68	65845.61	727801.02	7.51	25.27
51.00	96700.22	96554.25	3081389.26	31.87	0.69	66429.32	661955.41	6.85	25.02
52.00	96408.28	96245.37	2984835.01	30.96	0.63	60442.09	595526.08	6.18	24.78
53.00	96082.45	95914.61	2888589.65	30.06	0.65	62728.15	535083.99	5.57	24.49
54.00	95746.76	95561.73	2792675.04	29.17	0.64	61255.07	472355.84	4.93	24.23
55.00	95376.70	95179.15	2697113.31	28.28	0.60	57393.03	411100.77	4.31	23.97
56.00	94981.60	94765.74	2601934.16	27.39	0.58	54869.36	353707.74	3.72	23.67
57.00	94549.88	94311.38	2507168.41	26.52	0.56	52908.68	298838.38	3.16	23.36
58.00	94072.87	93827.76	2412857.04	25.65	0.48	44943.50	245929.69	2.61	23.03
59.00	93582.66	93309.02	2319029.27	24.78	0.52	48054.14	200986.19	2.15	22.63
60.00	93035.37	92755.39	2225720.26	23.92	0.42	38679.00	152932.05	1.64	22.28
61.00	92475.40	92186.59	2132964.87	23.07	0.34	31712.19	114253.06	1.24	21.83
62.00	91897.79	91565.63	2040778.28	22.21	0.31	28293.78	82540.87	0.90	21.31
63.00	91233.48	90895.01	1949212.64	21.37	0.28	25450.60	54247.09	0.59	20.77
64.00	90556.54	90182.76	1858317.63	20.52	0.24	21553.68	28796.48	0.32	20.20
65.00	89808.99	89417.32	1768134.87	19.69	0.08	7242.80	7242.80	0.08	19.61

2011

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99521.34	99514.22	6551701.71	65.83	0.01	895.63	2607527.65	26.20	39.63
17.00	99507.10	99495.86	6452187.49	64.84	0.02	2188.91	2606632.02	26.20	38.65
18.00	99484.63	99471.69	6352691.62	63.86	0.06	5570.41	2604443.11	26.18	37.68
19.00	99458.75	99443.55	6253219.93	62.87	0.12	11634.90	2598872.70	26.13	36.74
20.00	99428.34	99413.67	6153776.39	61.89	0.17	16800.91	2587237.80	26.02	35.87
21.00	99399.00	99383.03	6054362.71	60.91	0.28	27429.72	2570436.89	25.86	35.05
22.00	99367.06	99353.22	5954979.68	59.93	0.38	37654.87	2543007.17	25.59	34.34
23.00	99339.38	99326.38	5855626.46	58.95	0.40	39432.57	2505352.30	25.22	33.73
24.00	99313.39	99298.96	5756300.08	57.96	0.50	49550.18	2465919.73	24.83	33.13
25.00	99284.53	99268.89	5657001.12	56.98	0.53	52215.44	2416369.55	24.34	32.64
26.00	99253.26	99238.95	5557732.23	56.00	0.60	59940.33	2364154.11	23.82	32.18
27.00	99224.65	99208.45	5458493.28	55.01	0.65	64485.49	2304213.78	23.22	31.79
28.00	99192.24	99175.77	5359284.83	54.03	0.66	65951.89	2239728.29	22.58	31.45
29.00	99159.30	99141.95	5260109.06	53.05	0.70	69399.37	2173776.41	21.92	31.12
30.00	99124.61	99104.34	5160967.11	52.07	0.70	69571.24	2104377.04	21.23	30.84
31.00	99084.07	99063.65	5061862.77	51.09	0.70	69047.36	2034805.80	20.54	30.55
32.00	99043.23	99023.58	4962799.12	50.11	0.68	67534.08	1965758.43	19.85	30.26
33.00	99003.94	98981.42	4863775.54	49.13	0.72	70870.69	1898224.35	19.17	29.95
34.00	98958.89	98935.66	4764794.12	48.15	0.70	69057.09	1827353.66	18.47	29.68
35.00	98912.43	98886.54	4665858.46	47.17	0.74	72780.49	1758296.56	17.78	29.40
36.00	98860.65	98832.13	4566971.92	46.20	0.72	71653.29	1685516.07	17.05	29.15
37.00	98803.60	98771.33	4468139.79	45.22	0.71	70028.87	1613862.78	16.33	28.89
38.00	98739.06	98704.88	4369368.46	44.25	0.71	69784.35	1543833.91	15.64	28.62
39.00	98670.69	98630.80	4270663.59	43.28	0.70	69041.56	1474049.56	14.94	28.34
40.00	98590.91	98546.53	4172032.78	42.32	0.70	68588.39	1405008.00	14.25	28.07
41.00	98502.15	98454.37	4073486.25	41.35	0.69	67835.06	1336419.61	13.57	27.79
42.00	98406.59	98351.43	3975031.88	40.39	0.71	69829.52	1268584.55	12.89	27.50
43.00	98296.27	98230.32	3876680.45	39.44	0.68	66403.70	1198755.03	12.20	27.24
44.00	98164.38	98095.96	3778450.13	38.49	0.70	68372.88	1132351.33	11.54	26.96
45.00	98027.54	97953.15	3680354.17	37.54	0.68	66216.33	1063978.45	10.85	26.69
46.00	97878.76	97794.72	3582401.02	36.60	0.69	67967.33	997762.12	10.19	26.41
47.00	97710.67	97612.61	3484606.30	35.66	0.69	67645.54	929794.79	9.52	26.15
48.00	97514.55	97409.24	3386993.69	34.73	0.68	66530.51	862149.26	8.84	25.89
49.00	97303.94	97185.99	3289584.45	33.81	0.68	65989.29	795618.74	8.18	25.63
50.00	97068.05	96938.07	3192398.46	32.89	0.66	63979.13	729629.45	7.52	25.37
51.00	96808.09	96663.64	3095460.39	31.98	0.68	65537.94	665650.33	6.88	25.10
52.00	96519.18	96355.83	2998796.75	31.07	0.64	61860.45	600112.38	6.22	24.85
53.00	96192.48	96026.35	2902440.92	30.17	0.63	60688.65	538251.94	5.60	24.58
54.00	95860.21	95678.85	2806414.57	29.28	0.64	61138.79	477563.29	4.98	24.29
55.00	95497.49	95311.18	2710735.72	28.39	0.60	57472.64	416424.50	4.36	24.02
56.00	95124.86	94902.60	2615424.55	27.49	0.57	54094.48	358951.86	3.77	23.72
57.00	94680.34	94450.12	2520521.95	26.62	0.57	53458.77	304857.38	3.22	23.40
58.00	94219.91	93975.73	2426071.83	25.75	0.53	50089.06	251398.61	2.67	23.08
59.00	93731.55	93464.82	2332096.10	24.88	0.46	42993.82	201309.55	2.15	22.73
60.00	93198.10	92910.97	2238631.28	24.02	0.42	38836.78	158315.73	1.70	22.32
61.00	92623.83	92330.78	2145720.31	23.17	0.36	33608.40	119478.95	1.29	21.88
62.00	92037.73	91716.39	2053389.54	22.31	0.34	30724.99	85870.54	0.93	21.38
63.00	91395.04	91036.61	1961673.15	21.46	0.30	27037.87	55145.56	0.60	20.86
64.00	90678.18	90325.80	1870636.54	20.63	0.21	19329.72	28107.68	0.31	20.32
65.00	89973.42	89571.01	1780310.73	19.79	0.10	8777.96	8777.96	0.10	19.69

2012

Age	Number	Years	Years	Life ex-	Occupation	Years	Years	Expected	Expected

	alive at age x	lived in the age interval x	lived at age x and beyond	pectancy	rate	employed at age x	employed at age x and beyond	period employed	period non-employed
16.00	99536.31	99528.00	6556688.30	65.87	0.00	298.58	2499276.49	25.11	40.76
17.00	99519.69	99510.27	6457160.30	64.88	0.01	895.59	2498977.91	25.11	39.77
18.00	99500.85	99491.61	6357650.03	63.90	0.05	5372.55	2498082.32	25.11	38.79
19.00	99482.37	99469.61	6258158.42	62.91	0.09	9051.73	2492709.77	25.06	37.85
20.00	99456.86	99443.34	6158688.81	61.92	0.15	14817.06	2483658.03	24.97	36.95
21.00	99429.83	99416.92	6059245.46	60.94	0.22	21971.14	2468840.98	24.83	36.11
22.00	99404.01	99390.26	5959828.55	59.96	0.29	29320.13	2446869.84	24.62	35.34
23.00	99376.51	99362.64	5860438.29	58.97	0.36	35671.19	2417549.71	24.33	34.64
24.00	99348.76	99335.25	5761075.65	57.99	0.43	42714.16	2381878.52	23.97	34.01
25.00	99321.73	99306.95	5661740.41	57.00	0.49	49057.63	2339164.37	23.55	33.45
26.00	99292.16	99276.68	5562433.46	56.02	0.53	52715.92	2290106.74	23.06	32.96
27.00	99261.20	99245.09	5463156.78	55.04	0.60	59844.79	2237390.82	22.54	32.50
28.00	99228.98	99215.81	5363911.69	54.06	0.63	62307.53	2177546.03	21.94	32.11
29.00	99202.64	99184.40	5264695.88	53.07	0.63	62188.62	2115238.50	21.32	31.75
30.00	99166.15	99147.82	5165511.48	52.09	0.66	65635.86	2053049.88	20.70	31.39
31.00	99129.48	99108.98	5066363.66	51.11	0.67	66601.24	1987414.03	20.05	31.06
32.00	99088.48	99067.70	4967254.68	50.13	0.66	65880.02	1920812.79	19.38	30.74
33.00	99046.92	99025.62	4868186.97	49.15	0.68	67337.42	1854932.77	18.73	30.42
34.00	99004.31	98980.83	4769161.36	48.17	0.66	65723.27	1787595.35	18.06	30.12
35.00	98957.36	98932.29	4670180.52	47.19	0.68	67768.62	1721872.07	17.40	29.79
36.00	98907.23	98880.10	4571248.23	46.22	0.71	70303.75	1654103.45	16.72	29.49
37.00	98852.98	98821.35	4472368.13	45.24	0.69	68582.02	1583799.70	16.02	29.22
38.00	98789.72	98756.66	4373546.78	44.27	0.71	70117.23	1515217.69	15.34	28.93
39.00	98723.60	98686.28	4274790.12	43.30	0.71	69869.89	1445100.46	14.64	28.66
40.00	98648.97	98606.46	4176103.84	42.33	0.68	67249.61	1375230.57	13.94	28.39
41.00	98563.95	98518.86	4077497.38	41.37	0.68	67091.34	1307980.97	13.27	28.10
42.00	98473.77	98424.30	3978978.52	40.41	0.68	66534.83	1240889.62	12.60	27.81
43.00	98374.83	98314.42	3880554.22	39.45	0.67	65968.98	1174354.79	11.94	27.51
44.00	98254.01	98184.41	3782239.80	38.49	0.68	66961.76	1108385.82	11.28	27.21
45.00	98114.80	98040.47	3684055.39	37.55	0.68	66177.32	1041424.05	10.61	26.93
46.00	97966.15	97885.63	3586014.92	36.60	0.67	65387.60	975246.73	9.95	26.65
47.00	97805.10	97712.42	3488129.29	35.66	0.66	64490.19	909859.13	9.30	26.36
48.00	97619.73	97511.32	3390416.87	34.73	0.68	66210.19	845368.94	8.66	26.07
49.00	97402.91	97287.92	3292905.55	33.81	0.67	65474.77	779158.75	8.00	25.81
50.00	97172.93	97055.92	3195617.63	32.89	0.63	61048.17	713683.98	7.34	25.54
51.00	96938.90	96800.57	3098561.71	31.96	0.68	66114.79	652635.81	6.73	25.23
52.00	96662.23	96512.10	3001761.15	31.05	0.63	60995.65	586521.02	6.07	24.99
53.00	96361.97	96194.84	2905249.05	30.15	0.64	61179.92	525525.37	5.45	24.70
54.00	96027.71	95852.08	2809054.21	29.25	0.59	57031.99	464345.46	4.84	24.42
55.00	95676.45	95490.71	2713202.13	28.36	0.58	55575.60	407313.47	4.26	24.10
56.00	95304.98	95100.01	2617711.41	27.47	0.57	54492.31	351737.87	3.69	23.78
57.00	94895.04	94663.71	2522611.40	26.58	0.55	52159.70	297245.56	3.13	23.45
58.00	94432.38	94191.25	2427947.69	25.71	0.52	49073.64	245085.86	2.60	23.12
59.00	93950.11	93689.73	2333756.44	24.84	0.49	45907.97	196012.22	2.09	22.75
60.00	93429.34	93148.47	2240066.72	23.98	0.42	39029.21	150104.26	1.61	22.37
61.00	92867.59	92559.39	2146918.25	23.12	0.35	32118.11	111075.05	1.20	21.92
62.00	92251.19	91928.14	2054358.86	22.27	0.29	26567.23	78956.94	0.86	21.41
63.00	91605.09	91261.52	1962430.72	21.42	0.29	26100.79	52389.71	0.57	20.85
64.00	90917.94	90544.13	1871169.20	20.58	0.21	19195.36	26288.91	0.29	20.29
65.00	90170.32	89791.87	1780625.07	19.75	0.08	7093.56	7093.56	0.08	19.67

2013

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99583.13	99576.27	6597374.83	66.25	0.01	697.03	2507322.10	25.18	41.07
17.00	99569.40	99561.91	6497798.56	65.26	0.02	2289.92	2506625.06	25.17	40.08
18.00	99554.42	99543.28	6398236.65	64.27	0.04	3782.64	2504335.14	25.16	39.11
19.00	99532.15	99522.02	6298693.37	63.28	0.08	8359.85	2500552.49	25.12	38.16
20.00	99511.90	99500.03	6199171.35	62.30	0.16	15621.50	2492192.65	25.04	37.25
21.00	99488.16	99475.82	6099671.32	61.31	0.21	20591.50	2476571.14	24.89	36.42
22.00	99463.48	99451.10	6000195.50	60.33	0.28	28244.11	2455979.65	24.69	35.63
23.00	99438.71	99427.18	5900744.40	59.34	0.37	36688.63	2427735.53	24.41	34.93
24.00	99415.65	99403.89	5801317.22	58.35	0.43	42843.08	2391046.90	24.05	34.30
25.00	99392.13	99378.63	5701913.33	57.37	0.50	49689.31	2348203.83	23.63	33.74
26.00	99365.12	99351.03	5602534.70	56.38	0.54	53152.80	2298514.51	23.13	33.25
27.00	99336.95	99322.27	5503183.67	55.40	0.59	58699.46	2245361.71	22.60	32.80
28.00	99307.59	99293.56	5403861.40	54.42	0.65	64640.11	2186662.25	22.02	32.40
29.00	99279.53	99263.59	5304567.83	53.43	0.65	64422.07	2122022.14	21.37	32.06
30.00	99247.66	99230.52	5205304.24	52.45	0.64	63904.46	2057600.07	20.73	31.72
31.00	99213.39	99197.54	5106073.72	51.47	0.66	65470.38	1993695.61	20.10	31.37
32.00	99181.69	99164.34	5006876.18	50.48	0.68	67729.24	1928225.23	19.44	31.04
33.00	99146.99	99126.64	4907711.84	49.50	0.67	66712.23	1860495.99	18.77	30.73
34.00	99106.28	99084.31	4808585.20	48.52	0.71	69953.52	1793783.76	18.10	30.42
35.00	99062.33	99039.24	4709500.89	47.54	0.70	69723.62	1723830.24	17.40	30.14
36.00	99016.14	98989.87	4610461.66	46.56	0.69	68204.02	1654106.62	16.71	29.86
37.00	98963.60	98936.05	4511471.79	45.59	0.72	71728.64	1585902.60	16.03	29.56
38.00	98908.49	98878.83	4412535.74	44.61	0.72	70995.00	1514173.96	15.31	29.30
39.00	98849.17	98813.37	4313656.91	43.64	0.68	67390.72	1443178.96	14.60	29.04
40.00	98777.57	98741.09	4214843.53	42.67	0.70	69414.99	1375788.24	13.93	28.74

41.00	98704.61	98662.02	4116102.44	41.70	0.71	70346.02	1306373.25	13.24	28.47
42.00	98619.43	98568.99	4017440.42	40.74	0.68	66928.34	1236027.23	12.53	28.20
43.00	98518.54	98464.64	3918871.43	39.78	0.68	67152.89	1169098.89	11.87	27.91
44.00	98410.75	98349.38	3820406.79	38.82	0.68	67369.33	1101946.00	11.20	27.62
45.00	98288.01	98215.44	3722057.41	37.87	0.64	62759.67	1034576.68	10.53	27.34
46.00	98142.87	98064.38	3623841.96	36.92	0.68	66683.78	971817.01	9.90	27.02
47.00	97985.89	97895.66	3525777.59	35.98	0.66	64317.45	905133.23	9.24	26.75
48.00	97805.42	97706.07	3427881.93	35.05	0.66	64583.71	840815.79	8.60	26.45
49.00	97606.71	97494.60	3330175.86	34.12	0.67	65418.88	776232.07	7.95	26.17
50.00	97382.49	97258.16	3232681.26	33.20	0.64	62731.51	710813.20	7.30	25.90
51.00	97133.83	96998.88	3135423.10	32.28	0.64	61594.29	648081.68	6.67	25.61
52.00	96863.94	96712.23	3038424.22	31.37	0.64	62379.39	586487.39	6.05	25.31
53.00	96560.52	96399.30	2941711.98	30.46	0.61	58899.97	524108.00	5.43	25.04
54.00	96238.09	96065.09	2845312.68	29.57	0.60	57927.25	465208.03	4.83	24.73
55.00	95892.10	95700.70	2749247.59	28.67	0.57	54932.20	407280.78	4.25	24.42
56.00	95509.30	95300.07	2653546.89	27.78	0.56	53844.54	352348.58	3.69	24.09
57.00	95090.85	94868.67	2558246.82	26.90	0.55	52367.51	298504.04	3.14	23.76
58.00	94646.49	94411.77	2463378.15	26.03	0.52	48810.89	246136.53	2.60	23.43
59.00	94177.06	93921.51	2368966.37	25.15	0.50	47242.52	197325.64	2.10	23.06
60.00	93665.95	93381.38	2275044.87	24.29	0.41	38473.13	150083.13	1.60	22.69
61.00	93096.81	92802.54	2181663.48	23.43	0.37	34244.14	111610.00	1.20	22.24
62.00	92508.27	92195.99	2088860.94	22.58	0.29	26829.03	77365.86	0.84	21.74
63.00	91883.71	91539.16	1996664.96	21.73	0.25	23250.95	50536.83	0.55	21.18
64.00	91194.61	90827.69	1905125.80	20.89	0.23	21072.02	27285.88	0.30	20.59
65.00	90460.77	90055.86	1814298.10	20.06	0.07	6213.85	6213.85	0.07	19.99

2014

Age	Number alive at age x	Years lived in the age interval x	Years lived at age x and beyond	Life expectancy	Occupation rate	Years employed at age x	Years employed at age x and beyond	Expected period employed	Expected period non-employed
16.00	99570.29	99563.90	6609503.16	66.38	0.01	796.51	2590309.25	26.01	40.37
17.00	99557.51	99550.65	6509939.26	65.39	0.02	1991.01	2589512.73	26.01	39.38
18.00	99543.78	99534.22	6410388.61	64.40	0.06	5573.92	2587521.72	25.99	38.40
19.00	99524.65	99513.55	6310854.40	63.41	0.11	10747.46	2581947.80	25.94	37.47
20.00	99502.45	99488.99	6211340.85	62.42	0.14	14425.90	2571200.34	25.84	36.58
21.00	99475.54	99462.09	6111851.86	61.44	0.22	21981.12	2556774.44	25.70	35.74
22.00	99448.64	99434.95	6012389.77	60.46	0.29	29134.44	2534793.32	25.49	34.97
23.00	99421.26	99407.96	5912954.82	59.47	0.36	36184.50	2505658.88	25.20	34.27
24.00	99394.66	99382.00	5813546.86	58.49	0.43	42535.50	2469474.38	24.85	33.64
25.00	99369.34	99356.84	5714164.86	57.50	0.52	51764.92	2426938.88	24.42	33.08
26.00	99344.35	99331.52	5614808.01	56.52	0.56	55526.32	2375173.97	23.91	32.61
27.00	99318.70	99304.77	5515476.49	55.53	0.61	60675.22	2319647.64	23.36	32.18
28.00	99290.85	99276.82	5416171.72	54.55	0.67	66416.20	2258972.43	22.75	31.80
29.00	99262.80	99248.70	5316894.89	53.56	0.69	68183.85	2192556.23	22.09	31.48
30.00	99234.59	99217.47	5217646.20	52.58	0.67	66574.92	2124372.38	21.41	31.17
31.00	99200.35	99181.44	5118428.73	51.60	0.70	69030.28	2057797.46	20.74	30.85
32.00	99162.53	99144.50	5019247.29	50.62	0.69	68905.42	1988767.18	20.06	30.56
33.00	99126.46	99105.33	4920102.80	49.63	0.71	70860.31	1919861.75	19.37	30.27
34.00	99084.19	99063.01	4820997.47	48.66	0.71	70433.80	1849001.44	18.66	29.99
35.00	99041.82	99020.51	4721934.46	47.68	0.72	71195.75	1778567.65	17.96	29.72
36.00	98999.20	98977.20	4622913.95	46.70	0.74	73243.13	1707371.90	17.25	29.45
37.00	98955.19	98930.14	4523936.75	45.72	0.71	69943.61	1634128.77	16.51	29.20
38.00	98905.10	98876.39	4425006.61	44.74	0.72	70993.25	1564185.16	15.82	28.92
39.00	98847.69	98816.80	4326130.22	43.77	0.74	73025.62	1493191.91	15.11	28.66
40.00	98785.91	98747.98	4227313.42	42.79	0.72	71493.54	1420166.30	14.38	28.42
41.00	98710.05	98667.64	4128565.43	41.83	0.69	68080.67	1348672.76	13.66	28.16
42.00	98625.23	98579.03	4029897.80	40.86	0.72	70582.58	1280592.09	12.98	27.88
43.00	98532.83	98478.76	3931318.77	39.90	0.70	69427.53	1210009.50	12.28	27.62
44.00	98424.70	98363.89	3832840.00	38.94	0.70	68854.72	1140581.97	11.59	27.35
45.00	98303.08	98231.32	3734476.11	37.99	0.70	68565.46	1071727.25	10.90	27.09
46.00	98159.55	98082.92	3636244.80	37.04	0.67	65715.56	1003161.79	10.22	26.82
47.00	98006.29	97920.82	3538161.88	36.10	0.67	65215.27	937446.23	9.57	26.54
48.00	97835.35	97737.52	3440241.06	35.16	0.68	66070.56	872230.97	8.92	26.25
49.00	97639.69	97530.49	3342503.54	34.23	0.69	67491.10	806160.40	8.26	25.98
50.00	97421.28	97304.81	3244973.05	33.31	0.67	65388.83	738669.31	7.58	25.73
51.00	97188.35	97057.57	3147668.24	32.39	0.66	63960.94	673280.47	6.93	25.46
52.00	96926.80	96782.27	3050610.66	31.47	0.66	64263.43	609319.53	6.29	25.19
53.00	96637.74	96485.36	2953828.39	30.57	0.64	61268.20	545056.11	5.64	24.93
54.00	96332.98	96162.17	2857343.03	29.66	0.63	60774.49	483787.90	5.02	24.64
55.00	95991.36	95800.50	2761180.86	28.76	0.58	55660.09	423013.41	4.41	24.36
56.00	95609.64	95408.04	2665380.36	27.88	0.57	54382.58	367353.32	3.84	24.04
57.00	95206.44	94993.52	2569972.32	26.99	0.56	53291.37	312970.74	3.29	23.71
58.00	94780.60	94545.94	2474978.80	26.11	0.52	48880.25	259679.37	2.74	23.37
59.00	94311.28	94053.97	2380432.86	25.24	0.50	47403.20	210799.12	2.24	23.01
60.00	93796.66	93520.90	2286378.89	24.38	0.46	42739.05	163395.92	1.74	22.63
61.00	93245.13	92945.07	2192857.99	23.52	0.39	36155.63	120656.87	1.29	22.22
62.00	92645.00	92326.69	2099912.93	22.67	0.37	33791.57	84501.24	0.91	21.75
63.00	92008.38	91671.86	2007586.24	21.82	0.26	23743.01	50709.67	0.55	21.27
64.00	91335.34	90983.23	1915914.37	20.98	0.22	20198.28	26966.66	0.30	20.68
65.00	90631.13	90245.06	1824931.14	20.14	0.07	6768.38	6768.38	0.07	20.06

C.3 Cross sectional expected time in employment by age and year

Age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
16	26,6	26,3	25,6	25,1	24,3	23,6	23,3	23,0	22,0	21,9	22,2	23,2	23,5	24,0	24,4
17	26,3	26,0	25,4	24,9	24,1	23,4	23,2	22,9	21,9	21,8	22,2	23,1	23,4	23,9	24,3
18	25,8	25,6	25,0	24,6	23,8	23,2	23,0	22,7	21,8	21,7	22,0	22,9	23,2	23,6	24,1
19	25,3	25,1	24,6	24,2	23,5	22,9	22,8	22,5	21,6	21,5	21,8	22,7	22,9	23,4	23,8
20	24,8	24,6	24,1	23,8	23,2	22,6	22,5	22,2	21,4	21,3	21,6	22,4	22,7	23,2	23,6
21	24,2	24,1	23,7	23,4	22,8	22,4	22,2	22,0	21,2	21,1	21,4	22,2	22,4	22,9	23,3
22	23,8	23,7	23,4	23,1	22,5	22,1	21,9	21,7	20,9	20,8	21,1	21,8	22,1	22,5	22,9
23	23,3	23,2	22,9	22,5	22,1	21,6	21,5	21,3	20,6	20,5	20,7	21,4	21,6	22,1	22,4
24	22,8	22,7	22,3	22,0	21,5	21,1	21,0	20,9	20,1	20,1	20,3	21,0	21,2	21,6	21,9
25	22,1	22,1	21,7	21,4	21,0	20,6	20,5	20,4	19,7	19,6	19,9	20,5	20,6	21,0	21,4
26	21,5	21,5	21,1	20,8	20,5	20,1	20,0	19,8	19,2	19,1	19,4	20,0	20,1	20,5	20,8
27	20,9	20,9	20,6	20,3	19,9	19,5	19,5	19,3	18,7	18,7	18,8	19,4	19,6	19,9	20,2
28	20,3	20,3	20,0	19,7	19,3	19,0	18,9	18,7	18,1	18,1	18,3	18,8	19,0	19,3	19,6
29	19,8	19,7	19,4	19,1	18,8	18,4	18,3	18,2	17,6	17,6	17,7	18,3	18,4	18,7	19,0
30	19,2	19,1	18,8	18,5	18,2	17,9	17,8	17,6	17,0	17,0	17,2	17,7	17,8	18,1	18,4
31	18,6	18,5	18,2	17,9	17,6	17,3	17,2	17,0	16,4	16,5	16,6	17,0	17,2	17,5	17,8
32	18,0	17,9	17,6	17,3	17,0	16,7	16,7	16,5	15,9	15,9	16,0	16,4	16,6	16,9	17,1
33	17,4	17,3	17,0	16,8	16,5	16,2	16,1	15,9	15,3	15,3	15,4	15,8	16,0	16,3	16,5
34	16,8	16,7	16,4	16,2	15,9	15,6	15,5	15,3	14,8	14,8	14,8	15,2	15,4	15,6	15,9
35	16,2	16,1	15,9	15,6	15,3	15,1	15,0	14,8	14,2	14,2	14,3	14,6	14,7	15,0	15,2
36	15,6	15,5	15,3	15,0	14,8	14,5	14,4	14,2	13,7	13,7	13,7	14,0	14,1	14,4	14,6
37	15,1	14,9	14,7	14,4	14,2	14,0	13,8	13,6	13,1	13,1	13,1	13,4	13,5	13,8	14,0
38	14,5	14,4	14,1	13,9	13,6	13,4	13,3	13,1	12,6	12,5	12,5	12,8	12,9	13,2	13,3
39	13,9	13,8	13,5	13,3	13,0	12,8	12,7	12,5	12,0	12,0	12,0	12,3	12,4	12,5	12,7
40	13,3	13,2	13,0	12,7	12,5	12,3	12,1	12,0	11,5	11,4	11,4	11,7	11,8	11,9	12,1
41	12,7	12,6	12,4	12,1	11,9	11,7	11,6	11,4	10,9	10,9	10,9	11,1	11,2	11,3	11,5
42	12,1	12,0	11,8	11,6	11,4	11,1	11,0	10,9	10,3	10,4	10,3	10,5	10,6	10,7	10,8
43	11,6	11,4	11,3	11,0	10,8	10,6	10,4	10,3	9,8	9,8	9,8	10,0	10,0	10,1	10,3
44	11,0	10,9	10,7	10,4	10,2	10,0	9,9	9,7	9,3	9,3	9,2	9,4	9,4	9,5	9,6
45	10,4	10,3	10,1	9,9	9,7	9,5	9,3	9,2	8,8	8,7	8,7	8,8	8,9	9,0	9,1
46	9,8	9,7	9,6	9,3	9,1	9,0	8,8	8,6	8,3	8,2	8,2	8,3	8,3	8,4	8,5
47	9,3	9,1	9,0	8,7	8,6	8,4	8,3	8,1	7,7	7,7	7,6	7,7	7,7	7,8	7,9
48	8,7	8,6	8,4	8,2	8,0	7,8	7,7	7,6	7,2	7,2	7,1	7,2	7,2	7,3	7,3
49	8,1	8,0	7,9	7,6	7,5	7,3	7,2	7,0	6,7	6,6	6,6	6,6	6,6	6,7	6,8
50	7,6	7,5	7,3	7,1	7,0	6,8	6,7	6,5	6,2	6,1	6,1	6,1	6,1	6,2	6,2
51	7,0	6,9	6,8	6,5	6,4	6,2	6,1	6,0	5,7	5,7	5,6	5,6	5,6	5,7	5,7
52	6,5	6,3	6,3	6,0	5,9	5,7	5,6	5,5	5,2	5,2	5,1	5,1	5,1	5,2	5,1
53	5,9	5,8	5,7	5,5	5,4	5,2	5,1	5,0	4,7	4,7	4,6	4,6	4,6	4,6	4,6
54	5,4	5,3	5,2	5,0	4,9	4,7	4,6	4,5	4,3	4,2	4,1	4,1	4,1	4,1	4,1
55	4,8	4,7	4,7	4,5	4,4	4,2	4,1	4,0	3,8	3,8	3,6	3,6	3,6	3,6	3,6
56	4,3	4,2	4,2	3,9	3,9	3,8	3,6	3,6	3,3	3,3	3,2	3,2	3,1	3,2	3,2
57	3,8	3,7	3,6	3,4	3,4	3,3	3,1	3,1	2,9	2,8	2,7	2,7	2,7	2,7	2,7
58	3,3	3,2	3,1	3,0	2,9	2,8	2,7	2,7	2,5	2,4	2,3	2,3	2,3	2,3	2,3
59	2,8	2,7	2,6	2,5	2,4	2,4	2,3	2,2	2,1	2,0	1,9	1,9	1,9	1,9	1,9
60	2,4	2,2	2,2	2,0	2,0	1,9	1,8	1,8	1,7	1,6	1,5	1,5	1,5	1,5	1,5
61	1,9	1,8	1,8	1,7	1,6	1,5	1,5	1,4	1,3	1,3	1,2	1,2	1,2	1,2	1,2
62	1,5	1,4	1,4	1,3	1,2	1,1	1,1	1,1	1,0	0,9	0,9	0,9	0,9	0,9	0,9
63	1,0	1,0	1,0	0,9	0,9	0,8	0,8	0,8	0,7	0,7	0,6	0,6	0,6	0,6	0,6
64	0,6	0,6	0,6	0,5	0,5	0,5	0,4	0,5	0,4	0,4	0,4	0,4	0,4	0,3	0,3
65	0,3	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Age	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
16	24,1	23,3	22,4	22,4	22,7	23,3	23,9	24,6	25,7	26,7	27,2	27,5
17	24,0	23,2	22,4	22,3	22,6	23,2	23,9	24,6	25,7	26,6	27,1	27,4
18	23,8	23,0	22,3	22,2	22,5	23,1	23,8	24,5	25,5	26,5	27,0	27,3
19	23,6	22,9	22,1	22,1	22,4	23,0	23,6	24,3	25,4	26,3	26,8	27,1
20	23,4	22,7	21,9	21,9	22,3	22,8	23,5	24,1	25,1	26,0	26,5	26,8
21	23,1	22,4	21,7	21,7	22,0	22,6	23,2	23,9	24,8	25,7	26,1	26,5
22	22,7	22,1	21,4	21,4	21,8	22,3	22,9	23,5	24,4	25,3	25,7	26,1
23	22,2	21,7	21,0	21,1	21,4	21,9	22,5	23,1	24,0	24,8	25,2	25,6
24	21,8	21,2	20,6	20,6	21,0	21,5	22,1	22,7	23,5	24,3	24,7	25,1
25	21,2	20,7	20,2	20,2	20,5	21,0	21,6	22,2	23,0	23,7	24,1	24,4
26	20,7	20,2	19,7	19,7	20,0	20,5	21,0	21,6	22,4	23,1	23,5	23,8
27	20,1	19,7	19,2	19,2	19,5	20,0	20,5	21,0	21,7	22,5	22,8	23,1
28	19,5	19,1	18,6	18,6	18,9	19,4	19,9	20,4	21,0	21,8	22,1	22,4
29	19,0	18,5	18,1	18,1	18,4	18,8	19,2	19,7	20,4	21,1	21,3	21,7
30	18,4	18,0	17,5	17,5	17,8	18,2	18,6	19,1	19,7	20,4	20,6	20,9
31	17,7	17,4	17,0	17,0	17,2	17,6	18,0	18,4	19,0	19,6	19,9	20,2
32	17,1	16,8	16,4	16,4	16,6	17,0	17,4	17,7	18,3	18,9	19,1	19,5
33	16,5	16,2	15,8	15,8	16,1	16,4	16,7	17,1	17,6	18,2	18,4	18,7
34	15,9	15,6	15,2	15,2	15,5	15,8	16,1	16,5	16,9	17,5	17,7	18,0
35	15,2	15,0	14,6	14,6	14,9	15,2	15,5	15,8	16,2	16,8	17,0	17,3
36	14,6	14,3	14,0	14,0	14,2	14,6	14,9	15,1	15,6	16,1	16,3	16,6
37	13,9	13,7	13,4	13,4	13,6	13,9	14,2	14,5	14,9	15,4	15,6	15,8
38	13,3	13,1	12,8	12,8	13,0	13,3	13,6	13,8	14,2	14,7	14,9	15,1
39	12,7	12,5	12,2	12,2	12,4	12,7	13,0	13,2	13,5	14,0	14,2	14,4
40	12,0	11,9	11,5	11,6	11,8	12,0	12,3	12,5	12,9	13,3	13,5	13,7
41	11,4	11,2	10,9	11,0	11,1	11,4	11,7	11,9	12,2	12,6	12,8	13,0
42	10,8	10,6	10,3	10,3	10,5	10,8	11,0	11,2	11,5	11,9	12,1	12,3
43	10,2	10,0	9,7	9,8	9,9	10,1	10,4	10,5	10,8	11,2	11,4	11,6
44	9,6	9,4	9,2	9,1	9,3	9,5	9,7	9,9	10,1	10,5	10,7	10,9
45	9,0	8,9	8,6	8,5	8,7	8,9	9,1	9,3	9,5	9,9	10,1	10,2
46	8,4	8,3	8,0	8,0	8,1	8,3	8,5	8,6	8,8	9,2	9,4	9,5
47	7,9	7,7	7,5	7,4	7,5	7,7	7,9	8,0	8,2	8,5	8,7	8,8
48	7,3	7,2	6,9	6,8	7,0	7,1	7,3	7,4	7,5	7,9	8,0	8,1
49	6,8	6,6	6,4	6,3	6,4	6,6	6,7	6,8	6,9	7,2	7,4	7,5
50	6,2	6,1	5,8	5,8	5,8	6,0	6,1	6,2	6,3	6,6	6,8	6,8
51	5,7	5,6	5,3	5,2	5,3	5,4	5,6	5,6	5,7	6,0	6,1	6,2
52	5,1	5,0	4,8	4,7	4,8	4,9	5,0	5,1	5,1	5,4	5,5	5,6
53	4,6	4,5	4,3	4,2	4,3	4,4	4,5	4,5	4,6	4,8	4,9	5,0
54	4,1	4,0	3,8	3,7	3,8	3,9	4,0	4,0	4,0	4,3	4,4	4,4
55	3,6	3,6	3,4	3,2	3,3	3,4	3,5	3,5	3,5	3,7	3,9	3,9
56	3,1	3,1	2,9	2,8	2,8	2,9	3,0	3,0	3,0	3,2	3,3	3,4
57	2,7	2,6	2,5	2,4	2,4	2,5	2,5	2,5	2,5	2,7	2,9	2,9
58	2,3	2,2	2,1	2,0	2,0	2,1	2,1	2,1	2,1	2,3	2,4	2,4
59	1,9	1,8	1,8	1,6	1,7	1,7	1,7	1,7	1,7	1,9	1,9	1,9
60	1,5	1,5	1,4	1,3	1,3	1,4	1,4	1,3	1,3	1,5	1,5	1,5
61	1,1	1,1	1,1	1,0	1,0	1,0	1,0	1,0	1,0	1,1	1,2	1,1

62	0,9	0,8	0,8	0,8	0,8	0,7	0,8	0,7	0,8	0,8	0,8	0,8
63	0,6	0,6	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
64	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3
65	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Age	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
16	28,0	28,7	29,7	30,2	30,4	29,1	27,3	27,0	26,2	25,1	25,2	26,0
17	28,0	28,6	29,6	30,2	30,4	29,1	27,3	27,0	26,2	25,1	25,2	26,0
18	27,9	28,5	29,5	30,1	30,2	29,0	27,2	26,9	26,2	25,1	25,2	26,0
19	27,7	28,3	29,3	29,8	30,0	28,9	27,1	26,9	26,1	25,1	25,1	25,9
20	27,4	28,0	28,9	29,5	29,7	28,6	26,9	26,7	26,0	25,0	25,0	25,8
21	27,0	27,6	28,5	29,1	29,3	28,2	26,7	26,5	25,9	24,8	24,9	25,7
22	26,6	27,2	28,0	28,6	28,8	27,8	26,3	26,2	25,6	24,6	24,7	25,5
23	26,1	26,7	27,4	28,0	28,2	27,3	25,9	25,8	25,2	24,3	24,4	25,2
24	25,6	26,1	26,8	27,4	27,6	26,7	25,4	25,3	24,8	24,0	24,1	24,8
25	25,0	25,5	26,2	26,7	26,9	26,1	24,9	24,8	24,3	23,6	23,6	24,4
26	24,3	24,8	25,5	25,9	26,2	25,4	24,3	24,2	23,8	23,1	23,1	23,9
27	23,6	24,1	24,8	25,2	25,5	24,7	23,7	23,6	23,2	22,5	22,6	23,4
28	22,8	23,3	24,0	24,4	24,7	24,0	23,0	23,0	22,6	21,9	22,0	22,8
29	22,1	22,6	23,2	23,6	23,9	23,2	22,3	22,3	21,9	21,3	21,4	22,1
30	21,3	21,8	22,4	22,8	23,1	22,5	21,6	21,6	21,2	20,7	20,7	21,4
31	20,6	21,0	21,7	22,0	22,3	21,7	20,9	20,9	20,5	20,0	20,1	20,7
32	19,8	20,2	20,9	21,2	21,5	21,0	20,2	20,2	19,8	19,4	19,4	20,1
33	19,1	19,4	20,1	20,4	20,7	20,2	19,4	19,5	19,2	18,7	18,8	19,4
34	18,3	18,7	19,3	19,6	19,9	19,5	18,7	18,8	18,5	18,1	18,1	18,7
35	17,6	17,9	18,5	18,8	19,1	18,7	18,0	18,0	17,8	17,4	17,4	18,0
36	16,9	17,2	17,8	18,1	18,3	17,9	17,3	17,3	17,0	16,7	16,7	17,2
37	16,2	16,5	17,0	17,3	17,5	17,2	16,6	16,6	16,3	16,0	16,0	16,5
38	15,4	15,7	16,3	16,5	16,7	16,4	15,9	15,9	15,6	15,3	15,3	15,8
39	14,7	15,0	15,5	15,8	15,9	15,7	15,1	15,2	14,9	14,6	14,6	15,1
40	14,0	14,3	14,7	15,0	15,2	14,9	14,4	14,4	14,3	13,9	13,9	14,4
41	13,2	13,5	14,0	14,2	14,4	14,2	13,7	13,7	13,6	13,3	13,2	13,7
42	12,5	12,8	13,2	13,5	13,7	13,5	13,0	13,0	12,9	12,6	12,5	13,0
43	11,8	12,1	12,5	12,7	12,9	12,7	12,3	12,3	12,2	11,9	11,9	12,3
44	11,1	11,3	11,7	12,0	12,2	12,0	11,6	11,6	11,5	11,3	11,2	11,6
45	10,4	10,6	11,0	11,2	11,4	11,3	10,9	10,9	10,9	10,6	10,5	10,9
46	9,7	9,9	10,3	10,5	10,6	10,6	10,2	10,2	10,2	10,0	9,9	10,2
47	9,0	9,2	9,6	9,7	9,9	9,9	9,5	9,5	9,5	9,3	9,2	9,6
48	8,3	8,5	8,9	9,0	9,2	9,2	8,8	8,9	8,8	8,7	8,6	8,9
49	7,6	7,8	8,2	8,3	8,5	8,4	8,1	8,2	8,2	8,0	8,0	8,3
50	7,0	7,2	7,5	7,6	7,8	7,7	7,5	7,5	7,5	7,3	7,3	7,6
51	6,3	6,5	6,8	6,9	7,1	7,0	6,8	6,8	6,9	6,7	6,7	6,9
52	5,7	5,9	6,1	6,2	6,4	6,4	6,1	6,2	6,2	6,1	6,1	6,3
53	5,1	5,3	5,5	5,6	5,7	5,7	5,5	5,6	5,6	5,5	5,4	5,6
54	4,5	4,6	4,9	4,9	5,1	5,1	4,9	4,9	5,0	4,8	4,8	5,0
55	4,0	4,0	4,3	4,3	4,4	4,5	4,3	4,3	4,4	4,3	4,2	4,4
56	3,4	3,5	3,7	3,7	3,8	3,9	3,7	3,7	3,8	3,7	3,7	3,8
57	2,9	3,0	3,1	3,1	3,3	3,3	3,1	3,2	3,2	3,1	3,1	3,3
58	2,5	2,5	2,6	2,6	2,7	2,7	2,6	2,6	2,7	2,6	2,6	2,7
59	2,0	2,0	2,1	2,1	2,2	2,2	2,1	2,1	2,1	2,1	2,1	2,2

60	1,6	1,6	1,6	1,7	1,7	1,7	1,6	1,6	1,7	1,6	1,6	1,7
61	1,2	1,2	1,2	1,2	1,3	1,4	1,2	1,2	1,3	1,2	1,2	1,3
62	0,9	0,9	0,9	0,9	0,9	1,0	0,9	0,9	0,9	0,9	0,8	0,9
63	0,5	0,6	0,6	0,6	0,6	0,7	0,6	0,6	0,6	0,6	0,6	0,6
64	0,3	0,3	0,3	0,3	0,3	0,4	0,3	0,3	0,3	0,3	0,3	0,3
65	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1

C.4 Cross sectional working life expectancy by age and year

Age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
16	27,9	27,8	27,6	27,6	27,4	27,3	27,5	27,5	27,4	27,3	27,5	28,3	28,3	28,4	28,7
17	27,4	27,4	27,2	27,2	27,0	27,0	27,2	27,2	27,1	27,1	27,3	28,1	28,0	28,3	28,5
18	26,9	26,9	26,7	26,8	26,6	26,6	26,8	26,8	26,7	26,7	27,0	27,8	27,7	27,9	28,2
19	26,3	26,3	26,2	26,2	26,1	26,1	26,3	26,4	26,3	26,3	26,5	27,3	27,3	27,6	27,8
20	25,7	25,7	25,6	25,7	25,6	25,6	25,8	25,9	25,8	25,9	26,1	26,9	26,9	27,2	27,5
21	25,1	25,1	25,1	25,2	25,1	25,2	25,4	25,5	25,4	25,5	25,7	26,4	26,4	26,7	27,0
22	24,7	24,7	24,7	24,7	24,6	24,7	24,8	25,0	24,8	24,9	25,1	25,7	25,8	26,1	26,4
23	24,2	24,2	24,1	24,1	24,0	24,0	24,2	24,3	24,2	24,2	24,4	25,0	25,1	25,4	25,7
24	23,5	23,5	23,4	23,4	23,3	23,3	23,5	23,6	23,5	23,6	23,7	24,4	24,4	24,7	25,0
25	22,9	22,9	22,8	22,8	22,6	22,6	22,8	22,9	22,8	22,9	23,0	23,6	23,6	24,0	24,3
26	22,2	22,2	22,1	22,1	22,0	21,9	22,1	22,2	22,1	22,2	22,3	22,9	22,9	23,2	23,5
27	21,6	21,6	21,4	21,4	21,3	21,3	21,4	21,5	21,4	21,4	21,6	22,1	22,1	22,5	22,7
28	20,9	21,0	20,8	20,8	20,7	20,6	20,7	20,8	20,6	20,7	20,8	21,4	21,4	21,7	22,0
29	20,3	20,3	20,2	20,1	20,0	20,0	20,0	20,1	19,9	20,0	20,1	20,6	20,7	21,0	21,2
30	19,7	19,7	19,6	19,5	19,4	19,3	19,4	19,4	19,3	19,3	19,4	19,9	19,9	20,2	20,5
31	19,1	19,1	18,9	18,9	18,7	18,7	18,7	18,8	18,6	18,6	18,7	19,1	19,2	19,5	19,7
32	18,5	18,5	18,3	18,2	18,1	18,0	18,1	18,1	17,9	17,9	18,0	18,4	18,4	18,7	19,0
33	17,9	17,8	17,7	17,6	17,5	17,4	17,4	17,4	17,2	17,3	17,3	17,7	17,7	18,0	18,2
34	17,3	17,2	17,1	17,0	16,9	16,8	16,8	16,8	16,6	16,6	16,6	17,0	17,0	17,3	17,5
35	16,7	16,6	16,5	16,4	16,3	16,2	16,2	16,1	15,9	15,9	15,9	16,3	16,3	16,6	16,7
36	16,1	16,0	15,9	15,8	15,6	15,6	15,6	15,5	15,3	15,3	15,3	15,6	15,6	15,9	16,0
37	15,5	15,4	15,3	15,1	15,0	14,9	15,0	14,9	14,7	14,6	14,6	14,9	14,9	15,2	15,3
38	14,9	14,8	14,7	14,5	14,4	14,3	14,3	14,2	14,1	14,0	14,0	14,2	14,2	14,5	14,6
39	14,3	14,2	14,1	13,9	13,8	13,7	13,7	13,6	13,4	13,4	13,3	13,6	13,6	13,8	13,9
40	13,7	13,6	13,5	13,3	13,2	13,1	13,1	13,0	12,8	12,8	12,7	13,0	12,9	13,1	13,2
41	13,1	13,0	12,9	12,7	12,6	12,5	12,5	12,4	12,2	12,2	12,1	12,3	12,3	12,4	12,5
42	12,5	12,4	12,3	12,1	12,0	11,9	11,9	11,8	11,6	11,6	11,5	11,7	11,6	11,7	11,8
43	11,8	11,8	11,7	11,5	11,4	11,3	11,3	11,2	11,0	11,0	10,9	11,0	11,0	11,1	11,1
44	11,3	11,2	11,1	10,9	10,8	10,7	10,7	10,6	10,4	10,4	10,3	10,4	10,4	10,5	10,5
45	10,7	10,6	10,5	10,3	10,2	10,1	10,1	10,0	9,8	9,7	9,7	9,8	9,7	9,8	9,8
46	10,1	10,0	9,9	9,7	9,6	9,6	9,5	9,4	9,2	9,2	9,1	9,2	9,1	9,2	9,2
47	9,5	9,4	9,3	9,2	9,0	9,0	8,9	8,8	8,6	8,6	8,5	8,6	8,5	8,6	8,6
48	8,9	8,8	8,7	8,6	8,5	8,4	8,3	8,2	8,1	8,0	7,9	7,9	7,9	8,0	8,0
49	8,3	8,2	8,1	8,0	7,9	7,8	7,7	7,7	7,5	7,4	7,3	7,3	7,3	7,4	7,4
50	7,8	7,7	7,6	7,4	7,3	7,2	7,2	7,1	6,9	6,8	6,8	6,7	6,7	6,8	6,8
51	7,2	7,1	7,0	6,8	6,8	6,7	6,6	6,5	6,4	6,3	6,2	6,2	6,1	6,2	6,2
52	6,6	6,5	6,5	6,3	6,2	6,1	6,1	6,0	5,8	5,8	5,7	5,6	5,6	5,6	5,6
53	6,0	6,0	5,9	5,7	5,7	5,6	5,5	5,4	5,3	5,2	5,1	5,1	5,0	5,1	5,0
54	5,5	5,4	5,4	5,2	5,1	5,0	5,0	4,9	4,8	4,7	4,6	4,5	4,5	4,5	4,5
55	4,9	4,9	4,8	4,7	4,6	4,5	4,4	4,4	4,2	4,2	4,1	4,0	3,9	4,0	3,9
56	4,4	4,3	4,3	4,1	4,1	4,0	3,9	3,9	3,7	3,7	3,5	3,5	3,4	3,5	3,4
57	3,9	3,8	3,7	3,6	3,5	3,5	3,4	3,3	3,2	3,2	3,1	3,0	2,9	3,0	2,9
58	3,4	3,3	3,2	3,1	3,0	3,0	2,9	2,9	2,7	2,7	2,6	2,5	2,5	2,5	2,4
59	2,9	2,8	2,7	2,6	2,5	2,5	2,4	2,4	2,3	2,2	2,1	2,1	2,0	2,0	2,0
60	2,4	2,3	2,2	2,1	2,0	2,0	2,0	1,9	1,8	1,8	1,7	1,6	1,6	1,6	1,6
61	1,9	1,8	1,8	1,7	1,6	1,6	1,5	1,5	1,4	1,4	1,3	1,3	1,3	1,3	1,2
62	1,5	1,4	1,4	1,3	1,2	1,2	1,2	1,2	1,1	1,0	1,0	1,0	0,9	0,9	0,9
63	1,1	1,0	1,0	0,9	0,9	0,8	0,8	0,8	0,8	0,7	0,7	0,7	0,7	0,6	0,6
64	0,7	0,6	0,6	0,5	0,5	0,5	0,5	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,3

65	0,3	0,3	0,2	0,2	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Age	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
16	28,7	28,7	28,9	28,9	29,0	29,3	29,6	29,8	30,2	30,7	30,3	31,0
17	28,5	28,5	28,8	28,8	28,8	29,2	29,5	29,7	30,1	30,6	30,2	30,9
18	28,2	28,3	28,5	28,6	28,6	29,0	29,3	29,5	29,9	30,4	30,1	30,7
19	27,9	27,9	28,2	28,3	28,4	28,7	29,0	29,2	29,6	30,1	29,8	30,5
20	27,6	27,6	27,9	28,0	28,1	28,4	28,7	28,9	29,2	29,7	29,4	30,1
21	27,1	27,1	27,4	27,5	27,6	27,9	28,3	28,5	28,8	29,3	28,9	29,6
22	26,5	26,6	26,8	27,0	27,1	27,4	27,8	27,9	28,2	28,7	28,4	29,1
23	25,8	25,9	26,2	26,3	26,5	26,8	27,2	27,4	27,6	28,1	27,8	28,5
24	25,1	25,2	25,5	25,7	25,8	26,2	26,5	26,7	27,0	27,4	27,1	27,8
25	24,4	24,5	24,8	24,9	25,1	25,5	25,8	26,0	26,3	26,7	26,4	27,1
26	23,7	23,8	24,0	24,2	24,3	24,7	25,0	25,2	25,5	25,9	25,6	26,3
27	22,9	23,0	23,2	23,4	23,6	23,9	24,3	24,4	24,7	25,1	24,9	25,5
28	22,2	22,3	22,5	22,6	22,8	23,1	23,4	23,6	23,9	24,3	24,0	24,6
29	21,4	21,5	21,7	21,8	22,0	22,3	22,6	22,8	23,0	23,5	23,2	23,8
30	20,6	20,7	20,9	21,1	21,2	21,5	21,8	21,9	22,2	22,7	22,4	23,0
31	19,9	20,0	20,2	20,3	20,4	20,8	21,0	21,1	21,4	21,8	21,6	22,1
32	19,1	19,3	19,4	19,5	19,6	20,0	20,2	20,3	20,6	21,0	20,8	21,3
33	18,4	18,5	18,6	18,8	18,9	19,2	19,4	19,5	19,8	20,2	20,0	20,5
34	17,6	17,8	17,9	18,0	18,2	18,4	18,7	18,7	19,0	19,4	19,2	19,7
35	16,9	17,0	17,1	17,2	17,4	17,7	17,9	18,0	18,2	18,6	18,4	18,8
36	16,2	16,3	16,3	16,5	16,6	16,9	17,1	17,2	17,4	17,8	17,6	18,0
37	15,4	15,5	15,6	15,7	15,9	16,1	16,4	16,4	16,6	17,0	16,9	17,2
38	14,7	14,8	14,9	15,0	15,1	15,4	15,6	15,6	15,8	16,2	16,1	16,5
39	14,0	14,1	14,1	14,3	14,4	14,6	14,8	14,9	15,1	15,4	15,3	15,7
40	13,3	13,4	13,4	13,5	13,6	13,8	14,1	14,1	14,3	14,6	14,6	14,9
41	12,6	12,6	12,7	12,8	12,9	13,1	13,3	13,3	13,5	13,9	13,8	14,1
42	11,9	11,9	11,9	12,0	12,2	12,3	12,5	12,6	12,8	13,1	13,0	13,3
43	11,2	11,3	11,2	11,3	11,4	11,6	11,8	11,8	12,0	12,3	12,3	12,5
44	10,6	10,6	10,6	10,6	10,7	10,9	11,1	11,1	11,2	11,5	11,5	11,8
45	9,9	9,9	9,9	9,9	10,0	10,2	10,3	10,4	10,5	10,8	10,8	11,0
46	9,3	9,3	9,2	9,2	9,3	9,5	9,7	9,7	9,7	10,1	10,1	10,3
47	8,7	8,6	8,6	8,5	8,6	8,8	8,9	9,0	9,0	9,3	9,3	9,5
48	8,1	8,0	7,9	7,9	8,0	8,1	8,3	8,3	8,3	8,6	8,6	8,8
49	7,4	7,4	7,3	7,2	7,3	7,5	7,6	7,6	7,6	7,9	7,9	8,1
50	6,8	6,8	6,7	6,6	6,7	6,8	6,9	6,9	7,0	7,2	7,2	7,4
51	6,2	6,2	6,1	6,0	6,1	6,2	6,3	6,3	6,3	6,5	6,6	6,7
52	5,6	5,6	5,5	5,4	5,5	5,6	5,7	5,6	5,7	5,9	5,9	6,0
53	5,1	5,0	4,9	4,8	4,9	5,0	5,0	5,0	5,1	5,3	5,3	5,4
54	4,5	4,5	4,4	4,2	4,3	4,4	4,5	4,4	4,5	4,7	4,7	4,8
55	4,0	3,9	3,8	3,7	3,7	3,8	3,9	3,9	3,9	4,1	4,1	4,2
56	3,4	3,4	3,3	3,2	3,2	3,3	3,3	3,3	3,4	3,5	3,6	3,6
57	3,0	2,9	2,9	2,7	2,8	2,8	2,8	2,8	2,8	3,0	3,0	3,1
58	2,5	2,5	2,4	2,3	2,3	2,3	2,3	2,3	2,3	2,5	2,5	2,6
59	2,0	2,0	1,9	1,8	1,9	1,9	1,9	1,8	1,9	2,0	2,1	2,1
60	1,6	1,6	1,5	1,4	1,4	1,5	1,5	1,4	1,5	1,6	1,6	1,6
61	1,2	1,2	1,2	1,1	1,1	1,1	1,1	1,1	1,1	1,2	1,2	1,2
62	0,9	0,9	0,9	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,9	0,8

63	0,6	0,6	0,6	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
64	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3
65	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Age	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
16	31,6	32,0	32,6	33,1	33,4	34,0	33,8	34,1	34,2	34,4	34,5	34,7
17	31,5	32,0	32,5	33,0	33,3	33,9	33,8	34,1	34,2	34,4	34,5	34,7
18	31,4	31,8	32,3	32,8	33,1	33,7	33,7	34,0	34,1	34,3	34,4	34,6
19	31,1	31,5	32,0	32,4	32,8	33,4	33,4	33,7	33,9	34,1	34,2	34,4
20	30,7	31,1	31,5	32,0	32,3	32,9	33,0	33,4	33,6	33,8	33,9	34,1
21	30,2	30,6	31,0	31,4	31,8	32,4	32,5	32,9	33,2	33,4	33,5	33,8
22	29,6	30,1	30,4	30,8	31,2	31,8	32,0	32,3	32,7	32,9	33,0	33,3
23	29,0	29,4	29,7	30,2	30,5	31,1	31,3	31,7	32,0	32,3	32,4	32,7
24	28,3	28,7	29,0	29,4	29,8	30,4	30,6	31,0	31,4	31,6	31,7	32,0
25	27,6	28,0	28,3	28,7	29,1	29,6	29,8	30,3	30,6	30,9	31,0	31,3
26	26,8	27,2	27,4	27,8	28,2	28,8	29,0	29,4	29,8	30,1	30,2	30,5
27	26,0	26,4	26,6	27,0	27,4	27,9	28,1	28,6	28,9	29,2	29,4	29,7
28	25,1	25,5	25,8	26,1	26,5	27,1	27,3	27,7	28,1	28,3	28,5	28,8
29	24,2	24,6	24,9	25,3	25,7	26,2	26,4	26,8	27,2	27,4	27,6	27,9
30	23,4	23,8	24,0	24,4	24,8	25,3	25,5	26,0	26,3	26,5	26,7	27,0
31	22,5	22,9	23,2	23,5	23,9	24,4	24,6	25,1	25,4	25,6	25,8	26,1
32	21,7	22,0	22,4	22,7	23,0	23,5	23,8	24,2	24,5	24,8	24,9	25,2
33	20,8	21,2	21,5	21,8	22,2	22,6	22,9	23,3	23,6	23,8	24,0	24,3
34	20,0	20,4	20,6	21,0	21,3	21,8	22,0	22,4	22,7	23,0	23,1	23,4
35	19,2	19,5	19,8	20,1	20,4	20,9	21,1	21,5	21,8	22,1	22,2	22,5
36	18,4	18,7	19,0	19,3	19,6	20,0	20,3	20,6	20,9	21,2	21,3	21,6
37	17,5	17,9	18,1	18,4	18,7	19,2	19,4	19,7	20,0	20,3	20,4	20,7
38	16,7	17,0	17,3	17,6	17,9	18,3	18,5	18,9	19,2	19,4	19,5	19,8
39	15,9	16,2	16,5	16,8	17,1	17,5	17,7	18,0	18,3	18,5	18,6	18,9
40	15,1	15,4	15,7	15,9	16,3	16,7	16,8	17,1	17,4	17,6	17,7	18,0
41	14,3	14,6	14,9	15,1	15,4	15,8	16,0	16,3	16,5	16,7	16,8	17,1
42	13,6	13,8	14,1	14,3	14,6	15,0	15,1	15,4	15,7	15,9	15,9	16,2
43	12,8	13,0	13,3	13,5	13,8	14,1	14,3	14,6	14,8	15,0	15,1	15,4
44	12,0	12,2	12,5	12,7	13,0	13,3	13,5	13,7	14,0	14,1	14,2	14,5
45	11,2	11,5	11,7	11,9	12,2	12,5	12,6	12,9	13,1	13,3	13,4	13,6
46	10,5	10,7	10,9	11,1	11,4	11,7	11,8	12,1	12,3	12,4	12,5	12,8
47	9,7	9,9	10,2	10,3	10,6	10,9	11,0	11,2	11,5	11,6	11,7	11,9
48	9,0	9,2	9,4	9,6	9,8	10,1	10,2	10,4	10,6	10,8	10,8	11,1
49	8,2	8,4	8,7	8,8	9,1	9,3	9,4	9,6	9,8	9,9	10,0	10,3
50	7,5	7,7	7,9	8,1	8,3	8,5	8,6	8,8	9,0	9,1	9,2	9,4
51	6,8	7,0	7,2	7,3	7,5	7,7	7,8	8,0	8,2	8,3	8,4	8,6
52	6,2	6,3	6,5	6,6	6,8	7,0	7,0	7,2	7,4	7,5	7,6	7,8
53	5,5	5,6	5,8	5,9	6,1	6,3	6,3	6,5	6,7	6,7	6,8	7,0
54	4,9	5,0	5,2	5,2	5,4	5,6	5,6	5,8	5,9	6,0	6,0	6,2
55	4,3	4,3	4,5	4,6	4,7	4,9	4,9	5,0	5,2	5,2	5,3	5,5
56	3,7	3,8	3,9	4,0	4,1	4,2	4,2	4,3	4,5	4,5	4,6	4,7
57	3,1	3,2	3,3	3,3	3,5	3,6	3,6	3,7	3,8	3,8	3,9	4,0
58	2,6	2,7	2,8	2,8	2,9	3,0	3,0	3,0	3,2	3,2	3,2	3,3
59	2,1	2,2	2,2	2,2	2,3	2,4	2,4	2,5	2,5	2,5	2,6	2,7
60	1,7	1,7	1,7	1,7	1,8	1,9	1,8	1,9	2,0	1,9	1,9	2,1

61	1,3	1,3	1,3	1,3	1,4	1,5	1,4	1,4	1,5	1,4	1,4	1,5
62	0,9	0,9	0,9	0,9	1,0	1,1	1,0	1,0	1,0	1,0	1,0	1,1
63	0,6	0,6	0,6	0,6	0,6	0,7	0,7	0,7	0,7	0,6	0,7	0,6
64	0,3	0,3	0,3	0,3	0,4	0,4	0,4	0,3	0,3	0,3	0,3	0,3
65	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1