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Postprint / Postprint

Zeitschriftenartikel / journal article

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**Empfohlene Zitierung / Suggested Citation:**

Madero-Cabib, I., & Fasang, A. E. (2016). Gendered work-family life courses and financial well-being in retirement. *Advances in Life Course Research*, 27, 43-60. <https://doi.org/10.1016/j.alcr.2015.11.003>

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**Article — Accepted Manuscript (Postprint)**

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Advances in Life Course Research

**Provided in Cooperation with:**  
WZB Berlin Social Science Center

*Suggested Citation:* Madero-Cabib, Ignacio; Fasang, Anette Eva (2016) : Gendered work-family life courses and financial well-being in retirement, Advances in Life Course Research, ISSN 1040-2608, Elsevier, Amsterdam, Vol. 27, pp. 43-60, <http://dx.doi.org/10.1016/j.alcr.2015.11.003>

This Version is available at:  
<http://hdl.handle.net/10419/209549>

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# Gendered Work-Family Life Courses and Financial Well-being in Retirement

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## **Abstract**

How are gendered work-family life courses associated with financial well-being in retirement? In this article we compare the cohorts born 1920-1950 in West Germany and Switzerland, whose adult life courses are characterized by similar strong male-breadwinner contexts in both countries. The countries differ in that Switzerland represented a liberal pension system, whereas Germany represented a corporatist protective pension system when these cohorts retired. We therefore assess how gendered work-family life courses that developed in similar male-breadwinner contexts are related to financial well-being in retirement in different pension systems. Using data from the SHARELIFE survey we conduct multichannel sequence analysis and cluster analysis to identify groups of typical work-family life courses from ages 20 to 59. Regression models estimate how these groups are associated with individual pension income and household income in retirement. Results show that women who combined motherhood with part time work and extended periods out of the labor force have even lower individual pension income in Switzerland compared to their German peers. This relative disadvantage partly extends to lower household income in retirement. Findings support that male breadwinner policies earlier in life combined with liberal pension policies later in life, as in Switzerland, intensify pension penalties for typical female work-family life courses of early motherhood and weak labor force attachment. We conclude that life course sensitive social policies should harmonize regulations, which are in effect earlier in life with policies later in life for specific birth cohorts.

**Keywords:** retirement, work-family trajectories, multichannel sequence analysis, life course, SHARE data.

## 1. Introduction

In the past decades retirement has taken a central position in public and academic debate across developed societies. Among the issues discussed are the sustainability of public and private pension schemes in view of population aging (Foster & Walker 2013; Rau et al., 2013), shifts in retirement timing (Madero-Cabib & Kaeser, In Press; Reynolds et al., 2012), women's elevated old age poverty risk (Gornick et al., 2009), and low employment rates among older workers (OECD, 2012). The core question is, whether different welfare states and pension systems are able to secure a growing number of retirees' financial well-being in an effective and sustainable way.

Retirees' financial well-being has long been studied by economists and sociologists alike (e.g. Disney & Johnson, 2001; Gruber & Wise, 1998; O'Rand & Henretta, 1999). Life course scholars further emphasize path dependencies across individual life courses that systematically link trajectories earlier in life to well-being later in life, often framed within the notion of cumulative advantage or disadvantage (CAD) across the life course (e.g. Blossfeld, Buchholz, & Hofäcker, 2006; Dannefer, 2003; Han & Moen, 1999). This approach understands social differences between individuals as a consequence of gradual cumulative experiences along life course trajectories that can be reinforced or mitigated by social policies (Dannefer, 2003; DiPrete & Eirich, 2006).

Following this line of argument, the crucial role of continuous full-time employment across the life course for financial well-being in retirement is well-documented (Balthasar et al., 2003; Blossfeld, Buchholz, & Hofäcker, 2006). In contrast part-time jobs are associated with lower pension accrual, particularly in liberal pension systems (Fasang et al., 2013; Ginn & Arber, 1999). Given the strong gendered interrelation between work and family life courses in developed societies (Krüger & Levy, 2001), life course and gender scholars stress the necessity of including family life courses in retirement studies along with employment trajectories (Bütler et al., 2004; Drobnič, 2003; Ginn & Arber, 1999; Meyer & Pfau-Effinger, 2006). However, most research to date focuses on the current family status at retirement or spouses joint retirement timing rather than longitudinal family life courses (Drobnič, 2003; Kim & Moen, 2002; O'Rand & Farkas, 2002). On the one hand, divorced, separated or widowed persons, especially women, face elevated poverty risks in old age because they lack access to a spouse's income (e.g. Bíró, 2013; Bütler et al., 2004). On the other hand, women who were never married tend to have higher individual pension income than continuously married women, albeit the difference varies across countries (Fasang et al., 2013). Family tasks like childcare and housework are, mostly for women, associated with employment

interruptions and consequently with low pension accrual (Madero-Cabib, 2015; Farkas & O’Rand, 1998; Ginn & Arber, 1999; Le Feuvre et al., 2014; Rosende & Schoeni, 2012).

Overall, the importance of a longitudinal life course perspective including not only employment but also family life courses for studying retirement outcomes is well-recognized. Nonetheless, most empirical studies to date suffer from limited longitudinal life course information or from methodology that uses only crude indicators particularly on family life courses, such as the number of children and whether a divorce ever occurred (Buchholz, 2006; Warner & Hofmeister, 2006). Moreover, analyses are often either focused on a single country (e.g. Bernardi & Garrido, 2006) or encompass a large number of countries without theorizing in a detailed comparative way how specific country contexts generate similarities and differences across individual life courses (Alavinia & Burdorf, 2008; Blossfeld, Buchholz, & Hofäcker, 2006; Disney & Johnson, 2001).

In this article we examine how multidimensional longitudinal work-family life courses from ages 20 to 59 are associated with financial well-being in retirement. A sequential perspective on interlocked employment and family life courses is important for two reasons. First, the sequential conceptualization of employment and family life courses addresses problems of the “short view on analytical scope” (Elder 1985:31) inherent in exclusively focusing on single events. It enables us “to study a complex set of life-course trajectories as they actually take place, providing ideal types of trajectories that can be interpreted and analysed in a meaningful way” (Aassve et al. 2007:371). Second, the multidimensional sequential perspective allows us to classify holistic longitudinal experiences in terms of interactions between the dimensions considered, in our case, work and family trajectories (Pollock, 2007:176). Interactions are considered by grouping people that are similar on both dimension, i.e. have a similar family trajectory and a similar work trajectory. We can then examine how typical work-family life courses for men and women are associated with financial well-being in retirement. We understand ‘typical’ life courses in the sense that they are shared by larger proportions of a population and thereby represent common experiences.

In particular we compare the cohorts born between 1920 and 1950 that experienced their active family formation phase and established careers roughly between 1945 and 1990 in similar strong male breadwinner contexts in Germany and Switzerland. They mostly retired between 1980 and 2010 in a restrictive liberal pension system in Switzerland and a protective corporatist pension system in Germany.<sup>1</sup> We use the exceptionally rich longitudinal life course information from SHARELIFE (Schröder, 2011) and employ multichannel sequence analysis (Gauthier et al., 2010; Pollock, 2007) and cluster analysis to identify a typology of joint work-

family trajectories across the life course. Regression analysis allows us to examine how these typical work-family life course profiles are associated with several indicators of financial well-being in retirement. Findings show that in Switzerland the particular combination of a strong male breadwinner context earlier in life with a liberal pension system later in life is associated with lower individual pension income for typical female life courses<sup>ii</sup>. Women who worked part-time most of their life course and have two or more children also have lower household equivalence income in retirement in Switzerland compared to their German peers.

We contribute to the comparative life course and retirement literature in three respects. First, beyond snapshot information on single events in the life course we take into account longitudinal information on the entire adult life course from ages 20 to 59; second, we acknowledge the importance of family processes next to employment by conceptualizing adult life courses as interlocked work-family trajectories; and third, we demonstrate the added value of a small N in-depth comparative cohort design for informing social policies that are life course sensitive.

## **2. Social Policies, Life Course Patterns and Financial Well-being in Retirement**

Macro-structural characteristics, including social policies, welfare states, and labour markets set incentives and constraints in which individuals navigate their life courses over time. Based on the political economy (Hall & Soskice, 2001) and comparative welfare regime literature (Esping-Andersen, 1990), life course research has persuasively shown systematic variation of life course outcomes across relatively broad regime typologies. For instance, authoritarian regimes tend to be associated with more standardized life courses whereas in liberal democratic countries life courses are more heterogeneous and de-standardized (Fasang, 2014; Brückner & Mayer, 2005). To move beyond such general dichotomies, differential life course sociology argues that it is most conducive to (Mayer, 2005:48): (1) compare single countries rather than overall regime types, (2) disaggregate national institutional arrangements to distinct policy fields and match them to specific life course outcomes, which (3) can be treated separately as dependent (and independent) variables.

We place our study in this paradigm and compare specific birth cohorts in two countries to carefully examine them in the specific socio-historical context in which they experienced their work family life courses and retirement. Germany and Switzerland are selected with the comparative rationale of both characterizing a strong male breadwinner society during the study cohorts' work-family life courses but very different pension systems when they retired. We thereby draw attention to inter-temporal combinations of different

social policies across individual life courses that jointly affect later life outcomes. For instance individuals born in 1940 will be affected most by the family policies in effect during their active family formation phase between ages 20 and 45 from 1960 to 1985. Their retirement instead, will be shaped by pension regulations during the 1990s and early 2000s when they retire and not by those in previous years.

Figure 1 locates our study cohorts born 1920-1950 in historical time and illustrates the comparative logic of similarities and differences in the two countries in different phases of our study cohorts' life courses. Despite some variation within these birth cohorts, this design enables us to compare birth cohorts that all experienced their family formation and employment life courses in similar environments consisting of strong incentives for a male breadwinner division of labour, but were subject to very different pension systems.

< Figure 1 about here >

Germany represented the prototype of a conservative corporatist welfare regime with an active regulative state securing a relatively high degree of decommodification with strong labour market regulation and generous welfare and pension provision (Ebbinghaus, 2006; Esping-Andersen, 1990; Hall & Soskice, 2001; Mayer, 1997). Private insurance against social risks was, at most, complementary.<sup>iii</sup> Switzerland, in contrast, is classified as a hybrid conservative-liberal welfare state with strong traditionalist elements, historically modest universal transfers and a high degree of commodification, i.e. dependence on labour income, as well as private and occupational pensions (Arts & Gelissen, 2002; Esping-Andersen, 1990; Korpi & Palme, 1998; Tabin et al., 2008). The comparison of a pure conservative type (West Germany in this period) with a hybrid conservative-liberal type (Switzerland) provides systematic similarities and differences across individuals' life courses that are particularly fruitful for comparison. In the following, we elaborate on the similarities and differences in Germany and Switzerland relevant to gendered life course patterns and financial well-being in retirement for our study cohorts.

## **2.1 Similarities: Family policies and gendered labour markets in Switzerland and Germany, 1950-1990**

Both Switzerland and Germany set strong incentives for a traditional male breadwinner division during the adult life courses of our study cohorts, roughly 1950-1990 (see Figure 1). This model assumes employment, upward career mobility, and financial

independence as the norm for men, and economic inactivity and family care combined with financial dependence, mostly through marriage, as the norm for women (Meyer and Pfau-Effinger, 2006). Policies that favour a male breadwinner – female caretaker division include granting men preferential access to training and more lucrative professions, generous dependent tax allowances, household instead of individual taxation, high marginal tax rates that penalize second earners, along with limited public child-care provision (Cooke & Baxter, 2010; Lewis, 2001; Sainsbury, 1999).

In Germany and Switzerland policies that were implemented just after World War II strongly reinforced a male breadwinner model (Cooke & Baxter, 2010; Crompton, 2006; Lewis, 2001; Morgan, 2006). This was precisely the historical period (ca. 1950 to 1990), when our study cohorts experienced their active family formation phase, reached occupational maturity and launched careers. Further, during this time the traditional family life cycle model (Duvall, 1957) with an ordered rapid sequence from leaving the parental home, to marriage and parenthood was widespread across western European countries, compared to a notable de-standardization of family trajectories among younger cohorts born in the 1960s and 1970s (Brückner & Mayer, 2005; Elzinga & Liefbroer, 2007; Widmer & Ritschard, 2009). Figure 2 shows that both countries had similar crude marriage and divorce rates during the last 50 years. Additional analysis based on our own analysis sample from SHARELIFE also showed similar proportions of married, divorced and remarried individuals for the two countries (available from authors).

< Figure 2 about here >

The upper part of Table 1 provides an overview of similar male breadwinner policies in Germany and Switzerland between 1950 and 1990. In both countries several policies reinforce a male breadwinner-female carer division and thus acted as immediate barriers to independent female pension accrual through employment (Aisenbrey et al., 2009; Brückner, 2004; Kuehni et al., 2013; Le Feuvre et al., 2014; Madero-Cabib, In Press). Tax legislation in both countries strongly penalized second earners in married couples with joint taxation (Dingeldey, 2001; Peters, 2014). Both Germany and Switzerland have traditionally gender-segregated labour markets and high gender employment gaps and gender wage gaps (Mandel & Semyonov, 2005), although reliable numbers before 2000 are lacking (OECD, 2014). During our study cohorts' active family formation phase there was no public childcare and very limited private care for children under the age of three in Germany. From age three, public care was only part-time and not universally available (Aisenbrey et al., 2009). In



Switzerland, although there is some variation between German, French and Italian cantons (Buchmann et al., 2010), limited public childcare<sup>iv</sup> and the high costs of existing services equally set strong incentives for mothers to withdraw from the labour market in favour of child care (Stern et al., 2013; Wall & Escobedo, 2013). While there was no maternity leave arrangement in effect for our study cohorts in Switzerland, in Germany, a rudimentary maternity leave was first introduced as early as 1952. It guaranteed women a leave with sick pay of six weeks before and eight weeks after childbirth. In 1979, an additional four months of leave for working mothers were introduced, resulting in a maximum leave period of six months (OECD, 2014).<sup>v</sup> However, most of the women in our study cohorts had completed their active family formation by 1979.

< Table 1 about here >

## **2.2. Differences: Labour market exit and pension policies in Switzerland and Germany, 1990-2005**

The lower panel of Table 1 summarizes core differences in the Swiss and German pension systems for our study cohorts. The liberal Swiss pension system is based on three pillars. First a public pension fund called AVS (*Assurance-Vieillesse et Survivants* or Old Age and Survivors Insurance) to which contribution is mandatory for everyone living in Switzerland. The AVS pension fund provides only basic benefits. It is managed by the state and operates on a ‘pay-as-you-go’ (PAYG) pension logic, according to which the working population finances the pensions of retirees and the state is the exclusive administrator of funds (Calvo et al., 2010). However, in the AVS individuals bear the risk of losing contributions due to employment interruptions. Not contributing for a year reduced total public pension savings by 2.3 percent on average (OFS, 2012)<sup>vi</sup>. Additional investment in private and occupational pensions is therefore crucial for securing a basic standard of living during retirement in Switzerland. Investing in occupational pensions is mandatory for employees and civil servants above a relatively low earnings limit. In contrast, investing in private pensions is voluntary and heavily used by the self-employed who are excluded from occupational pensions (Bonoli, 2006). Private and occupational pensions are based on the ‘individual retirement account’ (IRA) logic, according to which individual savings and contributions finance pensions. They are administered by private organizations, such as insurance offices or banks (Calvo et al., 2010).

In this system, individuals with interrupted employment careers or working in typical female jobs often have very limited access to occupational and private pensions (Ginn et al., 2001). Part-time jobs and typical female occupations are concentrated in the private sector in the liberal Swiss labour market. They are not covered by occupational pension schemes if they earn below a lower earnings limit, which is usually the case (Ginn et al., 2001; Oesch, 2008). Recent studies (Le Feuvre et al., 2014; Kuehni et al., 2013; Rosende & Schoeni, 2012) highlight high pension penalties for employment interruptions due to family responsibilities that incur losses in public pensions and are associated with limited access to the other pillars in Switzerland. We lack reliable numbers earlier, but even in 2008 only 5 percent of working men were not contributing to any occupational pension fund, while this was the case for 20 percent of working women (Rosende & Schoeni, 2012). This percentage was presumably much higher during the life courses of our study cohorts given an increase of female labour force participation in Switzerland across the past decades (OECD, 2014).

The AVS currently assures a minimum public pension of 1,170 CHF per month. Controlling by inflation in 1990 it was about 800 CHF. However, only individuals who contributed uninterruptedly to the AVS pension fund are eligible to this minimum pension. For those who contributed to the AVS either sporadically, or never there is a means-tested pension supplement (*prestation complementaire*) in the AVS aimed at ensuring a minimum living standard (Bonoli, 2006). Importantly, the means-tested minimum pension supplement is based on the principle of subsidiarity and will only be granted if a spouse cannot provide for the basic standard of living. Therefore women who never worked will not be eligible to any pension benefit if their spouses earn above a certain earnings threshold.

In *Germany*, the Bismarck model of public pension insurance practically covered the entire employed population for our study cohorts (Schulze & Jochem, 2006). Pension policies were intended to shape retirement by means of ‘political-administrative intervention’ (Leisering, 2003:210) with a generous earnings-related, universal public pension system based on a PAYG logic. Occupational and private pensions, mainly life insurances, were fairly widespread but each accounted for less than 10 percent of pensioner income in the 1990s, when our study cohorts retired (Council of the European Union, 2003). For our study cohorts, numerous generous early retirement options enabled a well-secured early labour market exit (Blossfeld, Buchholz, & Hofäcker, 2006), as the state stepped in to cushion the social consequences of downsizing and labour market restructuring during the 1990s. In the German corporatist labour market the public pension system also covered part-time jobs that were concentrated in the public sector and provided comparatively good benefits. Pension

provisions were expanded in the 1970s and 1980s when our study cohorts started to retire and women's pension rights were continuously strengthened by subsequent reforms. This included improved recognition of part-time and low paid work (1972), default pension sharing upon divorce (1976) and the retrospective recognition of childcare responsibilities (1986) (Schulze & Jochem, 2007).

Men and women of our study cohorts are entitled to an old age pension in the public scheme if they contributed for at least 5 years (Fasang, 2008). There is no minimum pension amount and contributions below 5 years yield no pension benefits. The amount granted after 5 contribution years is usually very low and therefore has to be complemented by means-tested social assistance (Schulze and Jochem, 2006). Individuals who receive no old age pensions, because they never worked or contributed too little are eligible for means-tested social assistance, if their spouses cannot provide for them. The German system equally builds on the principle of subsidiarity and the state only steps in if there is no spouse who can provide.

In both countries, men's labour force participation rates above age 50 were consistently high between 1991 and 2012 at above 90 percent, whereas the participation rates of older women ranged only around 70 percent (OECD, 2014). In Switzerland labour force participation was higher than in Germany for both genders by around 5 percent between 2000 and 2010, which reflects the generous largely state funded early retirement routes in effect for our study cohorts in Germany, but not in Switzerland (Blossfeld, Buchholz, & Hofäcker, 2006; Kohli et al., 1991) (see Table 1).

### **2.3 Expectations/Hypotheses**

We expect that the strong male breadwinner contexts during the work-family life courses of our study cohorts in Germany and Switzerland will generate similar gendered work-family life courses in the two countries (*hypothesis 1*). These accumulated life course experiences however, will be 'rewarded' differentially in the liberal Swiss and in the corporatist German pension systems. In particular, we hypothesize that typical female work-family life courses, characterized by early parenthood, weak labour force attachment and part-time employment will be associated with even lower individual pension income in the liberal Swiss system than in the corporatist German system (*hypothesis 2*). To what extent lower individual pension incomes are reflected in lower household equivalence income, depends on the household composition and the earnings of other household members. Low individual pension income can signal both dependence on another household member, usually of women on men, or a low standard of living. Instead, household equivalence income is a more direct

measure of individuals' financial well-being in retirement. We therefore also examine whether specific typical work-family profiles that are associated with lower individual pension income are also associated with lower household equivalence income in Germany and Switzerland.

### **3. Data, Variables and Methods**

#### **3.1 Data**

We use data from the Survey of Health, Aging, and Retirement in Europe (SHARE) (Schröder, 2011). Specifically, we use the third wave, SHARELIFE, which was collected in 2008-2009. SHARELIFE provides detailed information about pension income, household income as well as retrospective information about individual work- family trajectories starting from early adulthood until retirement. Data collection of SHARE was based on a probability sample and face-to-face interviews. SHARELIFE uses elaborate life history calendars to help respondents to accurately remember and order different events along the life course (Schröder, 2011). To account for non-response and selective mortality, we follow the recommended strategy of using calibrated weights provided by the SHARE team (Deville & Särndal, 1992). These correct for deviations due to the original sampling design and adjust to a set of known population totals (ibid.).

#### **3.2. Variables**

##### *Joint work-family life courses*

Employment and family trajectories are measured as longitudinal sequences in yearly intervals from ages 20 to 59. Work trajectories were specified based on three states: (1) 'out of the labour force', which includes education, housework, unemployment and disability, (2) 'full time work', including civil servants and self-employed, and (3) 'part time work' comprising all forms of self-reported part time work. Unfortunately, we are unable to reconstruct educational trajectories with SHARELIFE. Analyses allowing for more employment states, e.g. separating self-employed and civil servants yielded considerably worse clustering in the subsequent analyses. We therefore retain the simple employment specification that proved most useful to highlight the main variation in interrelated work-family life course profiles for our study cohorts.

To construct the family trajectories we considered six states based on a combination of the number of children and marital status: (1) 'single, no child', (2) 'single, 1+ children', (3) 'married, no children', (4) 'married, 1 child', (5) 'married, 2+ children', (6) 'divorced, with

and without children'. We combine cohabitation and marriage, because cohabitation out of wedlock occurred very rarely for our study cohorts. The state single includes very few reported unmarried relationships. We do not distinguish divorce with and without children, because divorce without children occurs very rarely. Allowing for additional family states, e.g. adding the category 'married, 3+ children' yields a number of additional work-family types but they do not show significantly different associations with our indicators of financial well-being. We therefore retain the more parsimonious typology separating between 1, and 2+ children that captures the empirically important variation for financial well-being in retirement. Not distinguishing 1 child from 2+ children, but only including the presence of parenthood, is also not a viable solution for substantive and empirical reasons. Substantively, it is well documented that women are much more likely to re-enter employment and experience lower career penalties if they only have one child compared to two or more children (e.g. Aisenbrey et al., 2009). Empirically, we miss several work-family clusters that are associated with financial well-being, when we only distinguish between parenthood and childlessness (results available from authors).

Our analysis sample encompasses all persons aged 59 and above who were not working any more at the time of the interview and reported being retired. Most of our analysis sample was considerably older at the time of the interview: 77.2 percent of individuals were aged 64 or older (cohorts born 1920-1944), and the average age of the sample is 70 (see Figure 1). Nonetheless as shown above employment rates among older adults in Switzerland are somewhat higher than in Germany for our study cohorts. Therefore it would be possible that we include a larger and somewhat more selective part of the birth cohorts 1945-1950 for Germany than for Switzerland. However the birth cohorts 1945-1950 included in our analysis are very similar in terms of education and gender composition for the two countries. We therefore assume that social selectivity in this relatively small part (cohorts 1945-1950) of our overall analysis sample (cohorts 1920-1950) will not majorly distort our findings. Moreover results remain similar when excluding the last five birth cohorts.

With this sample specification we can reconstruct complete work-family life courses until age 59 for 1709 individuals. The duration between retirement and assessment of the financial well-being indicators differs for individuals due to the age structure of our sample. We therefore control for age at interview in all subsequent regression models. Table 2 provides an overview of case numbers and the average duration spent in each sequence state by country and by gender.

< Table 2 about here >

### *Financial well-being in retirement*

As indicators for retirees' financial well-being we consider individual pension income and household equivalence income. Descriptive statistics on the two outcome variables are presented in Table 3 for the total population and separately by gender for Germany and Switzerland. We present the unweighted means, the standard deviation in parentheses, and weighted means in brackets. There are only small deviations between the unweighted and weighted means on the two outcome variables. All following results with and without weights showed only minor deviations and supported the same substantive conclusions. We therefore only present unweighted results for the remaining analyses (weighted results available from authors).

1) *Individual pension income* was measured with the question '*Approximately, how much was your first total monthly benefit after taxes from social security or pensions. Interviewer note: Enter sum of all pensions (public, occupational or private). Enter currency at next question*'. Unfortunately SHARELIFE data does not include information about current pension income at the time of the survey. However, previous evidence supports that both in liberal and corporatist welfare contexts, pension income tends to stay fairly stable across retirement trajectories (Fasang, 2012). Initial pension income is therefore a good approximation of later life pension income. Our measure includes pension income received in the first month of retirement taking into account all pension funds and social security transfers. Respondents who reported that they had never worked and were married were assigned a pension income of 0 (2.73 percent of cases). Because individuals included in the sample retired in different years individual pension income was adjusted by the OECD consumer price index (OECD, 2014) taking 2010 as the base year. All pension incomes were converted to Euros at the annual average exchange rate of 2010.

A relatively high proportion of the population had missing values on pension income (46.3 percent), which is typical for studies on retirement among these cohorts. In SHARELIFE, as in other surveys, only those individuals are asked about their pension income who explicitly state that they retired from their last job. As a result people who worked just a short period of time early in their life course and did not re-enter the labour market are likely to not report any pension income. Consequently, the missing values on pension income are highly concentrated among women with weak labour force attachment over the life course (see Appendix 1). These women are usually excluded in analyses on retirement outcomes that are conventionally limited to samples of people working at age 55

(e.g. Blossfeld & Hofmeister, 2006). Discarding them would exclude large parts of the female population for our study cohorts and omit part of the variation between gendered work-family life courses and retirement outcomes we are most interested in.

We therefore tried several approaches for dealing with these missing values. Results were robust to three different imputation strategies: (1) setting missing values at zero pension income given that they are highly concentrated among women with very little labor market experience, (2) replacing missing values by the average pension income of the corresponding work-family cluster by country, and (3) imputing pension income using 100 multiple imputations by chained equations with predictive mean matching (Heitjan & Little, 1991; van Buuren & Groothuis-Oudshoorn, 2011). Education, country, gender, household income, and the eight work-family clusters reported below, which summarize complete work-family profiles over the life course, are entered into the imputation procedure. Approach (3) based on predictive mean matching is the most conservative approach, because the simple replacement by means or zero incomes understates the variation in the outcome, which yields larger effect sizes and more significant results. We therefore present results using predictive mean matching in the final analyses (results of other imputation strategies presented in Appendix 4).

We gain further confidence in our imputation strategy because the national averages on pension income correspond closely to official statistics in the two countries during the 1990s, when our study cohorts retired (see DRV, 2014 for Germany and OFAS, 2012 for Switzerland). Pension income is higher on average in Switzerland at EUR 2075 than in Germany at EUR 1106 (Table 3), reflecting the higher cost of living in Switzerland. In both countries women's pension incomes average at about half of men's pension incomes (Table 3).

2) *Household income* is assessed with the question '*How much was the overall household income after taxes that your household had in an average month of [previous year]?*'. Household income refers to the sum of all household members' net income in the survey year of SHARELIFE (2008/2009). It was therefore not necessary to adjust for inflation as for individual pension income. All household incomes were converted to Euros using the annual average exchange rate in 2008 and 2009 and equivalized by dividing the sum of all household members' incomes by the square root of the household size (OECD, 2011). The proportion of missing values is also relatively high (38 percent). This is common for household income in large panel surveys that frequently report missing values for 30 to 40 percent of the population (Peracchi, 2002). We therefore apply the same multiple imputation procedure used for pension income based on predictive mean matching. Appendix 2 shows

that in contrast to individual pension income, gendered work-family trajectories are not significantly associated with missing values on household income. Table 3 presents means and standard deviations of household equivalence incomes with missing values and without missing values. In both cases, household income is higher in Switzerland than Germany, and women in the two countries show lower household income than men. The values with and without imputation are similar.

< Table 3 about here >

### 3.3 Methods

First, to classify groups of typical work-family trajectories, we use multichannel sequence analysis (MCSA) (Gauthier et al., 2010; Pollock, 2007), a recently developed extension of sequence analysis (SA) (for an introduction see MacIndoe & Abbott, 2004; Abbott, 1995). Sequence analysis is a technique for classifying sequences of categorical states. Originally developed in biology for the analysis of DNA, it has become popular in life course and career research particularly in the past decade (see Aisenbrey & Fasang, 2010; Abbott, 1995). Figure 3 shows a fictitious example of three family sequences from age 20 to 59 for the same six family states as defined above. John and Hillary did not have children during the observation period. John married at age 35 and remained married, whereas Hillary's first marriage ended in divorce but she remarried at age 48. William followed what can be called a 'traditional' family sequence, getting married early (age 22) followed by quick transitions to the first and second child.

< Figure 3 about here >

Sequence analysis is used to compare every possible pair of sequences and determine how similar they are to one another (Abbott, 1995). In the most commonly applied form of sequence analysis, optimal matching analysis, sequence similarity is determined by counting the number of modifications one has to make to one sequence (either substituting or inserting/deleting a state) to turn it into the other sequence – a process referred to as sequence alignment. Two individual sequences are considered similar if they are composed of similar states occurring at similar time-points in the life course and few modifications, also called transformation operations, are necessary to transform one into the other. In our example John and Hillary's family sequences would be considered more similar than John and William's



family sequence, because John and Hillary both experience a late entry into marriage and spend more time in the same family state (married, no children) compared to William. The output of optimal matching and other approaches for determining sequence similarity is a *pairwise distance matrix*, which summarises the ‘distance’ between all the possible pairs of individual sequences.

The main difference between SA and MCSA is that the latter quantifies the distance between individual sequences not only in one domain, but in multiple domains (Pollock, 2007; Gauthier et al., 2010). This means that two individual sequences are considered similar only if they are composed of similar states in at least two domains, and if those states are experienced at similar time-points in the life course. Extending the example above to joint work-family trajectories, two individual sequences would be considered similar not only if they are characterised by a late entry to marriage and the absence of children, but also if they are simultaneously characterised by full-time employment. Thereby multichannel sequence analysis takes into considerations the interaction of two life domains (Pollock, 2007). The output of multichannel sequence analysis is a pairwise distance matrix that summarises the distance between the two-dimensional work family sequences.

There are several ways to calculate the distance between each pair of sequences (MacIndoe & Abbott, 2004; Aisenbrey & Fasang, 2010; Madero-Cabib et al., In Press). We use the Dynamic Hamming Distance (Lesnard, 2006, 2010) that places particular emphasis on similarity in terms of timing, i.e. two individual sequences are regarded as similar if they experience the same states at the same age. This is achieved by specifying time-dependent substitution costs based on time point specific transition probabilities between two sequence states.<sup>vii</sup>

To identify homogeneous groups of sequences that represent typical life course profiles we use ward cluster analysis (Ward, 1963) on the distance matrix resulting from MCSA. To determine the most appropriate number of clusters, we considered several cluster cut-off criteria, including the Average Silhouette Width (ASW)<sup>viii</sup> and Point Biserial Correlation (PBC) (Hennig & Liao, 2013; Kaufman & Rousseouw, 1990; Studer, 2013) that identify the most discriminant number of groups. Taken together the clusters represent types of trajectories (Gauthier et al., 2014). The ASW ranges between 0 and 1. Higher values indicate a more discriminant grouping. Values > 0.25 support that there is a meaningful structure in the data that is captured in the respective grouping (Studer, 2013).

We run MCSA across a pooled country sample to first examine, whether the male breadwinner context in the two countries indeed generated similar gendered life courses with

similar proportions of German and Swiss retirees in each work-family cluster (*hypothesis 1*). Second, we can directly estimate, whether the same life course patterns lead to significantly different retirement outcomes – individual pension income and household income in retirement - by interacting the joint work-family clusters with a country dummy in the regression analyses (*hypothesis 2*). This allows a straightforward test, whether the two welfare states ‘reward’ specific work-family trajectories across the life course differently.

To assess these associations we employ linear regression models using the clusters of joint work-family life courses as independent variables to predict the two indicators of retirees’ financial well-being. The regression models proceed in several steps. We first include only the work-family clusters, a country dummy, and gender. In a second step we include controls for education, age, and marital status at the time of the interview to examine, whether the work-family clusters maintain an independent effect. Age reflects the age at which the outcome was measured. The highest educational degree obtained was measured according to the 1997 International Standard Classification of Education or ISCED-97 (UNESCO, 2006). In a third step we include interaction effects between the work-family clusters and country.

For robustness checks we also conducted all steps of the analysis on gender-specific samples in addition to the analysis sample including both men and women (see appendix 5-8 for gender-specific analyses). The gender-specific analyses further substantiate our findings from the models including both men and women. Because the gender-specific analyses only add little in substantive terms, we retain the more parsimonious joint models for men and women and only selectively refer to the gender-specific models in the appendix.

All calculations were conducted using the R statistical software (R Core Team, 2012) along with the libraries *mice* (van Buuren & Groothuis-Oudshoorn, 2011) for the imputation, *lm* for linear regression, *TraMineR* for the multichannel sequence analysis (Gabadinho et al., 2011) and *WeightedCluster* for the cluster analysis (Studer, 2013).

## **4. Results**

### **4.1. Work-family life courses in Switzerland and Germany**

The cluster cut-off criteria introduced above clearly suggest eight clusters as the best grouping with a maximum ASW of .45 (Studer, 2013). An ASW of .45 is unusually high for cluster analysis following sequence analysis and supports a strong grouping in the data (see cluster cut-off criteria in Appendix 3). Figure 4 illustrates the eight groups of work-family trajectories as state distribution plots (Gabadinho et al., 2011). The work trajectory is

displayed on the left hand side and the corresponding family trajectory of the same individuals within a cluster on the right hand side. They show the proportion of individuals in each cluster in a respective sequence state, such as ‘full time employment’, which are indicated by different colours. The size of the clusters reflects their size in the population. They are sorted according to their proportion of men and women, with three groups at the top that have an equal proportion of men and women, followed by three typical female work-family profiles and two typical male groups at the bottom.

Notably all clusters that have a ‘traditional’ family trajectory of marriage and parenthood are highly gendered: One the one hand, clusters with more than 80 percent men that are characterized by full-time employment. On the other hand, clusters of more than 90 percent women where the “traditional” family trajectory is coupled with extended periods out of the labour force or in part-time work. The gender-mixed clusters are all characterized by a family trajectory that deviates from the traditional male breadwinner-female caretaker model: divorce, childless marriage and individuals who never married. These constitute small groups between 4 and 8 percent of the population. Note that the clusters were generated only based on the work-family trajectories and gender was not a constitutive element of grouping the life courses. These joint work-family clusters strikingly illustrate the gendered longitudinal life course outcomes of strong male breadwinner contexts for our study cohorts beyond single indicators in either the work or family domain.

The first typical male cluster, named ‘(1) full-time employed/2+ children’, is the largest group and accounts for 34 percent of the sample. This group represents the standard model of a male life course in a male breadwinner context. The second typical male cluster ‘(2) full-time employed/1 child’ differs by having one instead of two children. The typical female clusters are named cluster ‘(3) out of labour force/2+ children’, ‘(4) part-time employed/2+ children’, and ‘(5) out of labour force & part-time employed/1 child’. The gender-mixed groups are labelled cluster ‘(6) full-time employed/divorce’, ‘(7) full-time employed/married childless’, and ‘(8) full-time employed/unmarried childless’.

Across clusters there are large differences in the proportion of men and women and only marginal differences in the proportion of Swiss and German respondents (Table 4), which indicates similarly gendered work-family life courses for our study cohorts in Switzerland and Germany (*hypothesis 1*).

< Figure 4 about here >

< Table 4 about here >

#### 4.2. Work-family life courses and retirees' financial well-being

Table 5 shows linear regression models that assess the association of work-family life courses with individual pension income (*hypothesis 2*). Overall, findings support greater pension penalties for typical female life courses in the liberal Swiss pension system than in the corporatist German pension system. As expected, women have substantially lower individual pension income, about EUR 800 less than men irrespective of work-family trajectories (Table 5). Most work-family clusters are associated with lower pension income compared with the standard male work-family pattern of '(1) full-time employed/2+ children', the reference category (step 1, Table 5). These negative effects are smaller but remain strong and significant once controlling for education, age and marital status at the time of the interview for all work-family profiles that are not characterized by full-time employment (step 2, Table 5). For instance, group '(3) out of labour force/2+ children' is still associated with EUR 779.1 less pension income on average than cluster '(1) full-time employed/2+ children'. Having some part-time employment reduces this penalty to EUR 489.8 and EUR 611.5 for the other two typical female work-family clusters.

In line with *hypothesis 2*, all three female work-family trajectories are associated with even lower pension incomes in Switzerland than in Germany. This is visible in the significant and sizeable country interactions for Switzerland. The typical female clusters range from additional pension penalties between EUR 742.5 and EUR 569.2 in Switzerland (step 3, Table 5). These findings are supported in the gender-specific models that show similar effects for similar clusters for women but not for men (Appendix 5-8). The gender-specific analysis support that joint work-family clusters particularly matter for women's financial well-being in retirement but not for men's (Appendix 5).

In contrast, gender-mixed work-family clusters (clusters 6, 7, 8) characterized by full-time employment combined with deviations from the traditional family model, i.e. childlessness and no marriage, are associated with much smaller and insignificant pension penalties compared to the reference category. The remaining covariates operate in the expected way with Swiss and more educated individuals showing higher pension incomes.

< Table 5 about here >

To what extent are these differences in individual pension income reflected in household equivalence income? The main effects for the work-family profiles for Germany indicate significantly higher household income for group '(2) full-time employed, 1 child'

(EUR 428.8) and the typical female group ‘(4) part-time employed, 2+ children’ (EUR 781.5) compared to the reference group of “(1) full-time employment, 2+ children” (Table 6). There is one significant country interaction effect for Switzerland: the group ‘(4) part-time employed/2+ children’ is associated with EUR 612.2 less household equivalence income compared to Germany. These findings indicate that more access to pensions in female part-time jobs in Germany enables women, who followed this pathway to contribute to household equivalence income in retirement to the benefit of all household members. In contrast, mothers in Switzerland who worked part-time do not report higher household equivalence income. The higher individual pension penalties (Table 5) in Switzerland compared to Germany therefore extend to lower household equivalence income compared to Germany for women who worked part-time for most of their employment careers. Moreover for men, having only one child, and not two or more, combined with full-time employment is associated with higher household equivalence income in retirement. These findings are supported in the gender-specific models, although not all coefficients reach statistical significance in the smaller gender-specific samples. In line with expectations, the covariates show that Swiss persons, men, and more educated individuals report higher household income in retirement.

< Table 6 about here >

## 5. Discussion

The extent to which different pension systems are able to ensure the financial well-being of retirees is important in view of aging populations and low employment rates among older workers (Foster & Walker, 2013; Reynolds et al., 2012). In this study we relied on the exceptionally rich longitudinal life course information from SHARELIFE data to compare how the liberal Swiss and corporatist German pension systems differentially rewarded or penalized gendered work-family life courses that evolved in similar strong male breadwinner contexts in the two countries.

Overall, findings show lower individual pension income for all work-family profiles that deviate from the standard male model of full-time employment combined with two children in a stable married relationship (group 1). These penalties are particularly high for typical female work-family profiles, and they are stronger in the liberal Swiss pension system than in the corporatist German pension system (*hypothesis 2*). Moreover, for individuals with work-family profiles of long interrupted part-time employment combined with parenthood,

we find both lower individual pension income and lower household equivalence income in retirement in Switzerland compared to Germany. Accordingly, part-time employment over the life course enables mothers to contribute to a higher household equivalence income in retirement in Germany but not in Switzerland. On a more general level, our findings illustrate the lifelong financial dependence on a male breadwinner that is associated with typical female work-family life courses in both countries. Based on our small N comparison we can of course not rule out that other unobserved differences between the two countries contribute to the observed effects. We can simply state that our results are in line with the hypothesized greater pension penalties of the more liberal Swiss pension system than in corporatist German system for typical female life courses of motherhood combined with weak labor force attachment for extended periods of time.

In this article, we seek to contribute to the comparative life course and retirement literature in three regards. First, beyond single life course events, we took into account longitudinal work-family life courses across the entire adult life course as determinants of financial well-being in retirement. Findings show that the longitudinal work-family trajectories indeed maintain an independent effect on financial well-being in retirement even after controlling for current family conditions in retirement. This underlines the importance of investigating longer periods of the life course and not just snapshot events close to the retirement transition as determinants of financial well-being in old age. Second, we acknowledged the importance of family processes next to employment by conceptualizing adult life courses as interrelated multidimensional work-family trajectories. For instance, full-time employment was associated with higher financial well-being in retirement when coupled with a stable marriage and two children, than when it was coupled with a childless marriage or divorce. Third, we demonstrated the added value of a small, comparative cohort design for informing social policies that are life course sensitive. Work-family life courses indeed cluster into relatively homogeneous patterns that are strongly shaped by the welfare state context in which they unfold—in our case societies that set strong incentives for a male breadwinner—female carer division of labour. Pension regulations later in life differentially reward or penalize these life courses: liberal pension systems penalize typical female life courses to a greater extent than corporatist protective pension systems.

The results are of particular relevance considering a recent shift of the German pension system towards a more liberal model (Seeleib-Kaiser, 2013). When this more liberal pension system ‘hits’ cohorts that still have strongly gendered life courses we are likely to observe a resurgence of gender inequality in old age pensions in Germany. One way to

alleviate immediate gender pension gaps is to improve ex-post recognition of family care and part-time work over the life course in pension accrual. The Swiss pension system just recently introduced pension points for each child a woman had, albeit too late to affect our study cohorts (CFQF, 2011). In the long-term, however, equalizing women's capacity to accrue pensions independently through employment is a more sustainable strategy for enduringly reducing gender inequality across the life course and into old age (Fasang et al., 2013; Rosende & Schoeni, 2012). Next to increasing women's labour market integration and pension recognition of family care, our findings underline that it is crucial to provide access to pension benefits in part-time jobs, as has been argued by numerous gender welfare state scholars (e.g. Aisenbrey et al., 2009; Ginn et al., 2001).

Our study on two selected countries should be understood as a first step to broader country comparisons on the interplay of social policies in effect at different stages of the life course for specific cohorts. Future research should substantiate and expand our analysis to additional targeted small N country comparisons, because small N comparisons enable the necessary detail to examine inter-temporal connections between policies in effect early in life and later in life. Comparisons between 'pure' representatives of a specific regime type and hybrid models, such as Germany and Switzerland can provide interesting similarities and differences in institutional settings.

Future research on retirement will also rely on better measurements of financial well-being in retirement that do not systematically exclude women who did not work later in life, a common problem in studies on retirement. In addition, it would be interesting to extend the analysis to subjective well-being, health and mortality as additional indicators of quality of life in old age, on which women might not be equally disadvantaged compared to men.

More generally, this study underlines the strength of a life course perspective to directly examine how welfare state institutions earlier in the life course operate in concert with retirement systems later in life. The importance of a longer view on analytical scope (Elder, 1985) that takes into account long life courses and inter-temporal effects of different social policies has long been acknowledged in the basic principles of the life course paradigm (Crosnoe et al., 2003). The recent proliferation of appropriate longitudinal data and methodology opens new possibilities for empirical insights and theory development to inform social policies that shape individual life courses over time.

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## Tables

Table 1. Overview of similarities and differences in Germany and Switzerland in effect for cohorts born 1920-1950

Germany	Switzerland
<i>Similarities: Family policies and gendered labour markets, ca 1950-2000</i>	
<ul style="list-style-type: none"> <li>• Limited public and private child care, especially for children aged 0-3</li> <li>• Limited compensated maternity leave (none in Switzerland, sick pay for six weeks before and eight weeks after birth in West Germany)</li> <li>• Joint taxation of married spouses</li> <li>• High marginal tax rates that penalize second earners</li> <li>• Gender segregated labour markets</li> <li>• Normative pressure for marriage and female-carer male-breadwinner model</li> </ul>	
<i>Differences: Labour market exit and pension policies ca 1980-2005</i>	
<ul style="list-style-type: none"> <li>• Generous early exit routes</li> <li>• Generous public pensions</li> <li>• Private and occupational pensions only supplementary</li> <li>• Broad pension coverage of part-time work (concentrated in public sector)</li> <li>• Pension splitting among spouses in case of divorce (since 1976) and increasing recognition of parenthood in pensions (since 1986)</li> </ul>	<ul style="list-style-type: none"> <li>• Limited early exit routes</li> <li>• Limited public pensions</li> <li>• Private and occupational pensions essential</li> <li>• Limited pension coverage of part-time work (concentrated in private sector)</li> <li>• No recognition of family events (divorce, parenthood) in pensions</li> </ul>

Sources: Fasang et al., 2013; Aisenbrey et al., 2009; Blossfeld, Buchholz & Hofäcker, 2006; Bonoli, 2006; Brückner, 2004; Buchmann et al., 2010; Cooke & Baxter, 2010; Crompton, 2006; Dingeldey, 2001; Lewis, 2001; Mandel & Semyonov, 2005; Oesch, 2008; Peters, 2014; Schulze & Jochem, 2007; Stern et al., 2013.

*Table 2. Case numbers of analysis sample and descriptive statistics on duration in different sequence states for the country and gender subsamples*

	Germany			Switzerland		
	men	women	total	men	women	total
N	436	414	850	386	473	859
%	51.2	48.8	100	44.9	55.1	100
Employment state, mean duration in years						
Out of the labour force	4.0	20.6	12.1	3.4	19.4	12.2
Full time employment	35.9	11.2	23.9	35.7	12.2	22.7
Part time work	0.1	8.2	4.1	1.0	8.5	5.1
Family states						
Single no child	8.0	4.2	6.1	8.9	7.3	8.0
Single 1+ children	0.3	0.5	0.4	0.4	0.5	0.4
Married no child	4.3	3.7	4.0	5.1	4.3	4.7
Married 1 child	8.8	8.9	8.8	5.5	5.8	5.7
Married 2+ children	17.8	21.4	19.5	18.7	20.2	19.5
Divorced	0.9	1.3	1.1	1.4	1.9	1.7



*Table 3. Descriptive statistics on individual pension income and household equivalence income. Unweighted means, standard deviations (in parentheses) and weighted means (in brackets) for numeric variables; frequencies for factor variables*

	Germany			Switzerland		
	total	men	women	total	men	women
Pension income with missing values (EUR)	1238 (987.1) [1143.6]	1579 (974.6) [1560]	620 (654.6) [589.51]	2213 (2082.3) [2196.5]	2832 (2238.6) [2833.5]	1384 (1498.2) [1407.9]
Pension income replacing missing values with 100 multiple imputations (EUR)	1106 (868.4)	1609 (857.5)	575.9 (475.7)	2075 (1711.0)	2966 (1922.4)	1347 (1061.7)
Equivalized household income with missing values (EUR)	1885 (1633.9) [1785.7]	1986 (1357.2) [1953.5]	1771 (1894.8) [1646]	2718 (1775.5) [2687.3]	3155 (1979.6) [3156.4]	2329 (1469.3) [2291.1]
Equivalized household income replacing missing values with 100 multiple imputations (EUR)	1904 (1306.5)	2402 (1127.8)	1760 (1458.9)	2773 (1596.7)	3213 (1803.7)	2413 (1301.2)

Table 4. Descriptive information of eight groups of work-family trajectories

	1)	2)	3)	4)	5)	6)	7)	8)	Total
	FT employed 2+ children	FT employed 1 child	Out of LF 2+ children	PT employed 2+ children	Out of LF/PT 1 child	FT employed Divorced	FT employed Married childless	FT employed Unmarried childless	
%	34	11	17	13	8	5	8	4	100
N	578	184	291	223	139	85	134	76	1709
%Women in Cluster	15	20	98	95	94	48	45	50	52
%Women	10	4	32	24	15	5	7	4	100
%Men	60	18	1	1	1	5	9	5	100
%German in Cluster	53	66	47	43	53	37	44	34	50
%German	36	14	16	11	9	4	7	3	100
%Swiss	32	7	18	15	8	6	8	5	100
%Education ISCED									
0	14	14	57	0	14	0	0	0	100
1	22	8	25	19	9	10	4	4	100
2	25	7	27	16	11	3	9	7	100
3	32	5	20	15	7	5	10	8	100
4	35	16	14	9	9	4	8	4	100
5	43	13	8	11	6	6	9	5	100
Employment state, mean duration in years									
Out of labour force	4.1	3.6	34.8	11.8	21.9	6.3	8.1	3.1	12.1
Full time emp	35.7	35.7	4.3	6.2	6.3	31.7	27.5	36.4	23.3
Part time emp	0.2	0.7	0.9	22.0	11.8	2.0	4.4	0.5	4.6
Family states, mean duration in years									
Single no child	5.8	5.9	4.4	3.3	8.1	6.5	7.7	39.0	7.1
Single 1+ children	0.2	0.2	0.2	0.1	0.3	5.4	0.0	0.1	0.4
Married no child	1.7	3.3	1.5	1.7	2.8	5.1	31.4	0.9	4.4
Married 1 child	3.0	30.2	2.8	3.0	25.0	1.8	0.2	0.0	7.3
Married 2+ children	29.0	0.5	31.1	31.0	0.0	5.4	0.1	0.0	19.5
Divorced	0.4	0.0	0.1	0.9	1.2	15.8	0.7	0.0	1.4

Table 5. Linear Regression Models on Individual Pension Income

Covariates	Model 1	Model 2	Model 3
1) FT Employed/2+ Children (Ref.)	-	-	-
2) FT Employed/1 Child	-60.1	-62.1	27.0
3) OLF/2+ Children	-890.0***	-779.1***	-372.1+
4) PT Employed/2+ Children	-497.7**	-489.8**	-160.5
5) OLF & PT Employed/1 Child	-645.3**	-611.5**	-248.6
6) FT Employed/Divorce	86.9	-34.4	-274.2
7) FT Employed/Married Childless	-176.8	-205.8	-84.1
8) FT Employed/Unmarried Childless	255.2	458.9	112.4
West Germany (Ref.)	-	-	-
Switzerland	1011.5***	1099.0***	1365.9***
Women (Ref.)	-	-	-
Men	829.0***	782.1***	824.3***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	348.8*	302.0+
ISCED 3	-	369.1+	341.4+
ISCED 4	-	481.0*	468.1*
ISCED 5	-	1059.8***	1021.5***
Age	-	-7.1	-8.0
Current Marital Status: Married (Ref.)	-	-	-
Single	-	-186.2	-188.3
Divorced	-	216.3	221.7
Widowed	-	217.4	244.5+
Interaction Effects Cluster*Switzerland			
1) FT Employed/2+ Children*Switzerland (Ref.)	-	-	-
2) FT Employed/1 Child*Switzerland	-	-	-161.1
3) OLF/2+ Children*Switzerland	-	-	-742.5**
4) PT Employed/2+ Children*Switzerland	-	-	-569.2*
5) OLF & PT Employed/1 Child*Switzerland	-	-	-711.9*
6) FT Employed/Divorce*Switzerland	-	-	323.6
7) FT Employed/Married Childless*Switzerland	-	-	-241.5
8) FT Employed/Unmarried Childless*Switzerland	-	-	482.8
Constant	927.6***	809.7	732.1
R2	0.26	0.31	0.32
Observations	1709	1709	1709

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \*:  $p < .05$ ; + :  $p < .10$ ). Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

*Table 6. Linear Regression Models on Household Equivalence Income in Retirement*

Covariates	Model 1	Model 2	Model 3
1) FT Employed / 2+ Children (Reference)	-	-	-
2) FT Employed / 1 Child	254.3	283.0+	428.8*
3) OLF / 2+ Children	-135.7	-20.8	205.9
4) PT Employed / 2+ Children	485.5*	415.3*	781.5**
5) OLF & PT Employed / 1 Child	193.1	236.7	367.9
6) FT Employed / Divorce	312.7	162.8	125.5
7) FT Employed / Married Childless	586.7*	513.0*	389.6
8) FT Employed / Unmarried Childless	273.2	241.9	-260.7
West Germany (Reference)	-	-	-
Switzerland	859.8***	568.1***	726.8***
Women (Reference)	-	-	-
Men	575.6***	494.7***	537.7***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	30.5	-5.4
ISCED 3	-	468.7**	438.1*
ISCED 4	-	-217.3	-228.0
ISCED 5	-	933.8***	903.2***
Age	-	-27.40***	-28.3***
Current Marital Status: Married (Ref.)	-	-	-
Single	-	86.8	90.2
Divorced	-	163.4	172.7
Widowed	-	177.0	201.0
Interaction Effects Cluster*Switzerland			
1) FT Employed/2+ Children*Switzerland (Ref.)	-	-	-
2) FT Employed/1 Child*Switzerland	-	-	-372.1
3) OLF/2+ Children*Switzerland	-	-	-385.7
4) PT Employed/2+ Children*Switzerland	-	-	-612.2*
5) OLF & PT Employed/1 Child*Switzerland	-	-	-217.0
6) FT Employed/Divorce*Switzerland	-	-	28.4
7) FT Employed/Married Childless*Switzerland	-	-	214.2
8) FT Employed/Unmarried Childless*Switzerland	-	-	744.3
Constant	1438.2***	3226.9***	3198.6***
R2	0.10	0.18	0.19
Observations	1709	1709	1709

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \* :  $p < .05$ ; + :  $p < .10$ ). Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

**Figures**

*Figure 1. Comparative design for cohorts born 1920 until 1950 in Germany and Switzerland.*

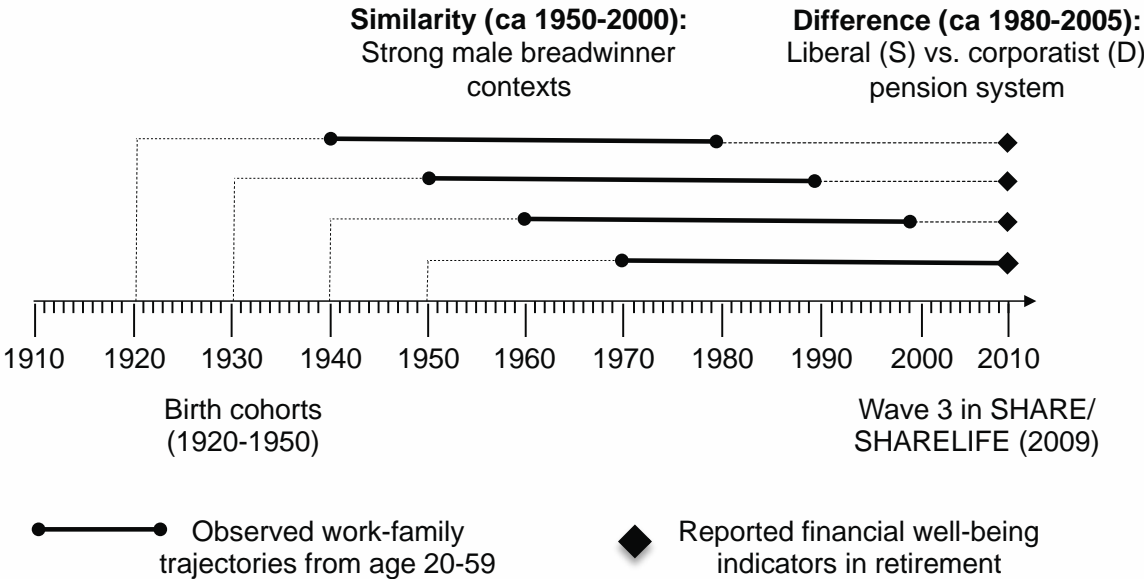
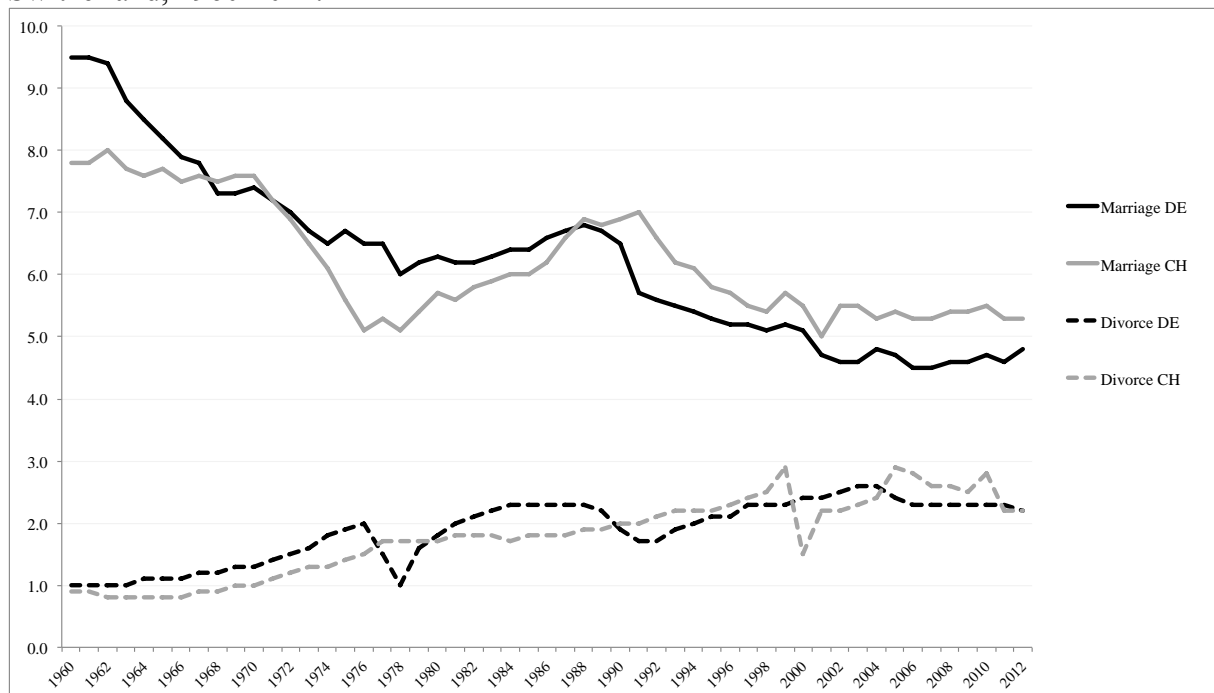


Figure 2. Number of marriages and divorces per 1000 population in Germany and Switzerland, 1960-2012.



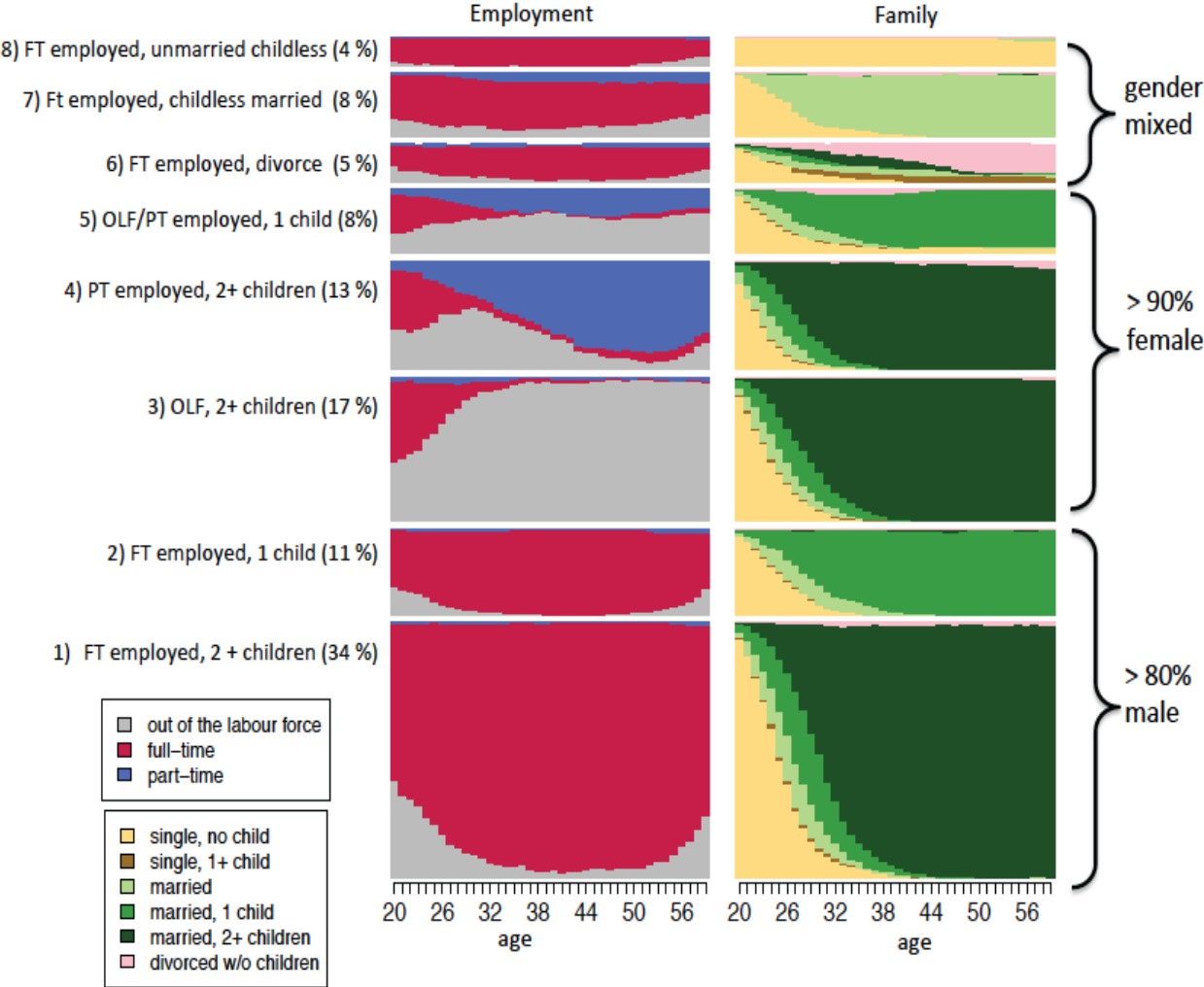
Source: OECD, 2015. <http://www.oecd.org/els/family/database.htm>

Figure 3. Fictitious example of family sequences for three individuals aged 20 to 59

Individuals / Ages	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
John	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	mnc	mnc	mnc	mnc	mnc
William	snc	snc	mnc	mnc	mnc	m1c	m1c	m1c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c
Hillary	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc	snc
Individuals / Ages	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
John	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc
William	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c	m2c
Hillary	mnc	mnc	mnc	d	d	d	d	d	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc	mnc

Alphabet
(1) single, no child: 'snc'
(2) single, 1+ children: 'sc'
(3) married, no children: 'mnc'
(4) married, 1 child: 'm1c'
(5) married, 2+ children: 'm2c'
(6) divorced, with and without children: 'd'

Figure 4. Eight clusters of work-family trajectories from ages 20 to 59 in Switzerland and Germany.



Note: The size of the clusters reflects their size in the population. They are sorted according to their proportion of men and women, with three groups at the top that have an equal proportion of men and women, followed by three typical female employment and family profiles and two typical male groups at the bottom.



## Appendix

Appendix 1. Logistic regression model on missing values on individual pension income (Dependent variable 1=missing, 0=not missing. Coefficients in odds ratios)

Covariates	Model 1	Model 2	Model 3
1) FT Employed / 2+ Children (Reference)	-	-	-
2) FT Employed / 1 Child	1.20	1.21	1.22
3) OLF / 2+ Children	4.31***	5.25***	4.37***
4) PT Employed / 2+ Children	1.04	0.80	0.78
5) OLF & PT Employed / 1 Child	2.38***	2.65***	2.92***
6) FT Employed / Divorce	1.25	1.10	1.37
7) FT Employed / Married Childless	1.77**	1.46+	1.51
8) FT Employed / Unmarried Childless	0.72	0.74	0.95
West Germany (Reference)	-	-	-
Switzerland	1.10	1.02	1.03
Women (Reference)	-	-	-
Men	0.53***	0.46***	0.45***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	0.89	0.90
ISCED 3	-	1.49+	1.51+
ISCED 4	-	0.99	0.99
ISCED 5	-	1.19	1.21
Age	-	0.92***	0.92***
Current Marital Status: Married (Ref.)	-	-	-
Single	-	0.89	0.91
Divorced	-	1.01	1.03
Widowed	-	1.15	1.13
Interaction Effects Cluster*Switzerland			
1) FT Employed/2+ Children*Switzerland (Ref.)	-	-	-
2) FT Employed/1 Child*Switzerland	-	-	0.98
3) OLF/2+ Children*Switzerland	-	-	1.43
4) PT Employed/2+ Children*Switzerland	-	-	1.02
5) OLF & PT Employed/1 Child*Switzerland	-	-	0.78
6) FT Employed/Divorce*Switzerland	-	-	0.69
7) FT Employed/Married Childless*Switzerland	-	-	0.93
8) FT Employed/Unmarried Childless*Switzerland	-	-	0.66
Constant	0.77+	265.19***	266.41***
AIC	2156.5	2031.8	2042.7
Observations	1709	1709	1709

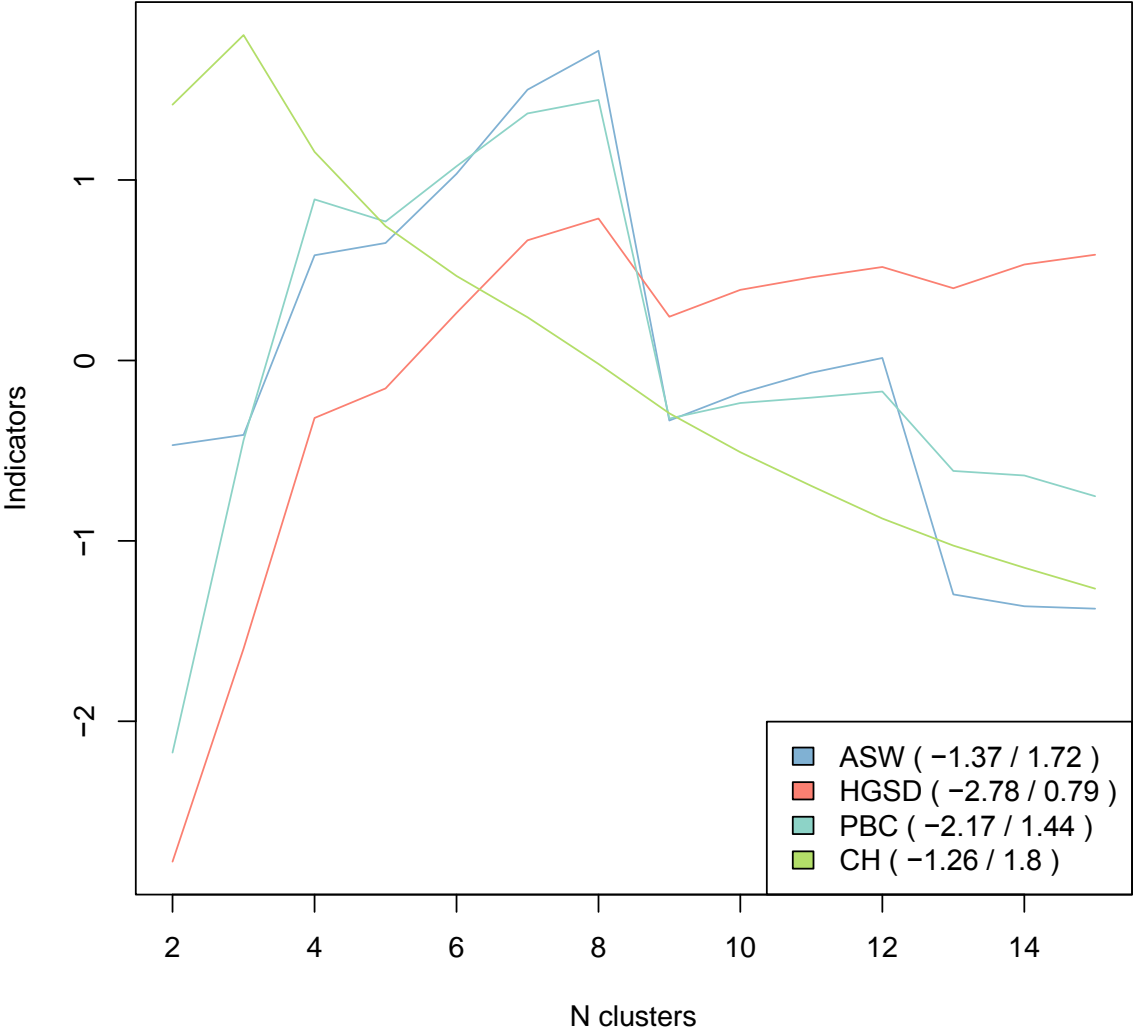
Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \*:  $p < .05$ ; +:  $p < .10$ ). Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

Appendix 2. Logistic regression model on missing values on household equivalence income (Dependent variable 1=missing, 0=not. Odds ratios)

Covariates	Model 1	Model 2	Model 3
1) FT Employed / 2+ Children (Reference)	-	-	-
2) FT Employed / 1 Child	0.76	0.75	0.65+
3) OLF / 2+ Children	1.00	1.03	1.07
4) PT Employed / 2+ Children	0.76	0.72	0.68
5) OLF & PT Employed / 1 Child	0.82	1.00	1.12
6) FT Employed / Divorce	0.57*	1.63	1.57
7) FT Employed / Married Childless	1.18	1.19	0.79
8) FT Employed / Unmarried Childless	0.36**	0.40+	0.24*
West Germany (Reference)	-	-	-
Switzerland	0.46***	0.51***	0.45***
Women (Reference)	-	-	-
Men	0.76+	0.57***	0.58***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	0.63*	0.61*
ISCED 3	-	0.62*	0.62*
ISCED 4	-	0.84	0.84
ISCED 5	-	0.91	0.91
Age	-	1.00	1.00
Current Marital Status: Married (Ref.)	-	-	-
Single	-	0.68	0.69
Divorced	-	0.12***	0.12***
Widowed	-	0.23***	0.23***
Interaction Effects Cluster*Switzerland			
1) FT Employed/2+ Children*Switzerland (Ref.)	-	-	-
2) FT Employed/1 Child*Switzerland	-	-	1.55
3) OLF/2+ Children*Switzerland	-	-	0.98
4) PT Employed/2+ Children*Switzerland	-	-	1.16
5) OLF & PT Employed/1 Child*Switzerland	-	-	0.79
6) FT Employed/Divorce*Switzerland	-	-	1.11
7) FT Employed/Married Childless*Switzerland	-	-	2.21+
8) FT Employed/Unmarried Childless*Switzerland	-	-	2.26
Constant	1.05	2.48	2.73+
AIC	2165.6	2052.8	2060.1
Observations	1709	1709	1709

Notes: Significant estimate coefficients in grey (\*\*\*: p < .001, \*\*: p < .01; \* : p < .05; + : p < .10). Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

Appendix 3. Cluster cut-off criteria for ward cluster analysis on pairwise distance matrix obtained with multichannel sequence analysis. ASW = Average Silhouette Width, HGSD = Hubert's Gamma Sommer's D, PBC = Point Biserial Correlation, CH = Calinsky Harabasz measure.



Appendix 4. Linear regression models on individual pension income replacing missing values by the average pension of the corresponding work-family trajectory by country

Covariates	Model 1	Model 2	Model 3
1) FT Employed / 2+ Children (Reference)	-	-	-
2) FT Employed / 1 Child	-75.5	-74.7	20.3
3) OLF / 2+ Children	-1437.0***	-1376.4***	-829.3***
4) PT Employed / 2+ Children	-739.3***	-724.1***	-523.6***
5) OLF & PT Employed / 1 Child	-1006.3***	-973.8***	-599.2***
6) FT Employed / Divorce	-97.4	-101.7	-292.6
7) FT Employed / Married Childless	-199.8+	-207.7+	-85.5
8) FT Employed / Unmarried Childless	111.3	236.2	-221.5
West Germany (Reference)	-	-	-
Switzerland	913.7***	954.6***	1240.2***
Women (Reference)	-	-	-
Men	417.1***	387.8***	430.7***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	195.4+	138.5
ISCED 3	-	215.4*	180.9+
ISCED 4	-	255.3*	237.1*
ISCED 5	-	585.0***	541.3***
Age	-	-1.2	-2.3
Current Marital Status: Married (Ref.)	-	-	-
Single	-	-126.5	-122.5
Divorced	-	29.3	38.3
Widowed	-	76.3	109.1
Interaction Effects Cluster* Switzerland			
1) FT Employed/2+ Children*Switzerland (Ref.)	-	-	-
2) FT Employed/1 Child*Switzerland	-	-	-171.8
3) OLF/2+ Children*Switzerland	-	-	-1010.3***
4) PT Employed/2+ Children*Switzerland	-	-	-349.8***
5) OLF & PT Employed/1 Child*Switzerland	-	-	-738.1***
6) FT Employed/Divorce*Switzerland	-	-	236.6
7) FT Employed/Married Childless*Switzerland	-	-	-245.7
8) FT Employed/Unmarried Childless*Switzerland	-	-	640.4*
Constant	1315.5***	1075.8***	1005.5***
Observations	1709	1709	1709

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ , \* :  $p < .05$ ; + :  $p < .10$ ). Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

Appendix 5. *Linear Regression Models on Individual Pension Income (Women)*

Covariates	Model 1	Model 2	Model 3
1) FT/married 2+ children (Ref.)	-	-	-
2) OLF/married 2+ children	-938.3***	-829.0***	-560.3***
3) PT/married 2+ child	-277.1*	-280.5*	-195.5
4) OLF, PT/married 1 child	-572.8***	-529.5***	-270.9
5) FT/divorce	-192.9	-536.0*	-474.3
6) PT, OLF/married childless	213.4	138.7	-124.5
7) FT/unmarried childless	-14.0	-94.1	-155.5
West Germany (Ref.)	-	-	-
Switzerland	734.2***	844.2***	1109.3***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	271.6*	250.4*
ISCED 3	-	245.3*	236.5+
ISCED 4	-	434.1**	395.1**
ISCED 5	-	930.7***	925.1***
Age	-	-9.7*	-9.8*
Current Marital Status: Married (Ref.)	-	-	-
Single	-	139.1	109.3
Divorced	-	446.0**	403.2*
Widowed	-	242.8**	253.3**
Interaction Effects Cluster * Switzerland			
1) FT/married 2+ children*Switzerland (Ref.)	-	-	-
2) OLF/married 2+ children* Switzerland	-	-	-523.0*
3) PT/married 2+ child*Switzerland	-	-	-177.3
4) OLF, PT/married 1 child* Switzerland	-	-	-551.0*
5) FT/divorce* Switzerland	-	-	-64.8
6) PT, OLF/married childless* Switzerland	-	-	408.5
7) FT/unmarried childless* Switzerland	-	-	20.7
Constant	996.1***	1108.8**	1003.0**
R2	0.22	0.29	0.31
Observations	887	887	887

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \*:  $p < .05$ ; + :  $p < .10$ ). Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

Appendix 6. *Linear Regression Models on Individual Pension Income (Men)*

1) FT/married 2+ children (Ref.)	-	-	-
2) FT/married 1 child	170.9	130.6	161.5
3) FT/married childless	-299.4	-302.9	-138.7
4) FT/divorced children	192.6	247.1	-335.7
5) FT/unmarried childless	-227.1	-224.0	-455.2
West Germany (Ref.)	-	-	-
Switzerland	1508.8***	1740.3***	1726.4***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	315.4	330.7
ISCED 3	-	202.2	207.0
ISCED 4	-	685.0**	685.5**
ISCED 5	-	1471.4***	1465.7***
Age	-	-20.1*	-20.0*
Current Marital Status: Married (Ref.)	-	-	-
Single	-	36.6	18.6
Divorced	-	-257.3	-281.5
Widowed	-	431.7+	438.9+
Interaction Effects Cluster*Switzerland			
1) FT/married 2+ children*Switzerland (Ref.)	-	-	-
2) FT/married 1 child*Switzerland	-	-	-96.5
3) FT/married childless*Switzerland	-	-	-292.6
4) FT/divorced children*Switzerland	-	-	895.3
5) FT/unmarried childless*Switzerland	-	-	481.8
Constant	1593.9***	2095.6**	2099.2**
R2	0.15	0.24	0.24
Observations	822	822	822

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \*:  $p < .05$ ; + :  $p < .10$ ).  
Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.

*Appendix 7. Linear Regression on Household Equivalence Income in Retirement (Women)*

Covariates	Model 1	Model 2	Model 3
1) FT/ married 2+ children (Ref.)	-	-	-
2) OLF/ married 2+ children	-201.5	-75.8	100.0
3) PT/ married 2+ child	394.7*	376.6*	670.9*
4) OLF, PT / married 1 child	288.6	416.7*	465.3+
5) FT/ divorce	-139.8	-225.2	-32.5
6) PT, OLF/ married childless	513.5*	438.4+	139.8
7) FT/ unmarried childless	-12.1	704.7	474.0
West Germany (Reference)	-	-	-
Switzerland	687.7***	462.5**	659.9*
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	168.6	135.5
ISCED 3	-	606.7**	588.6**
ISCED 4	-	-80.4	-108.6
ISCED 5	-	997.0***	990.6***
Age	-	-18.7**	-18.3*
Current Marital Status: Married (Ref.)	-	-	-
Single	-	-930.8+	-985.3+
Divorced	-	113.3	53.3
Widowed	-	12.8	7.6
Interaction Effects Cluster*Switzerland			
1) FT/married 2+ children*Switzerland (Ref.)	-	-	-
2) OLF/married 2+ children*Switzerland	-	-	-346.1
3) PT/married 2+ child*Switzerland	-	-	-546.5
4) OLF, PT/married 1 child*Switzerland	-	-	-72.0
5) FT/divorce*Switzerland	-	-	-272.4
6) PT, OLF/married childless*Switzerland	-	-	478.7
7) FT/unmarried childless*Switzerland	-	-	287.4
Constant	1661.9	2709.0***	2606.1***
R2	0.07	0.14	0.15
Observations	887	887	887

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \* :  $p < .05$ ; + :  $p < .10$ ).  
Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time

*Appendix 8. Linear Regression on Household Equivalence Income in Retirement (Men)*

Covariates	Model 1	Model 2	Model 3
1) FT/ married 2+ children (Ref.)	-	-	-
2) FT/ married 1 child	219.2	224.5	352.2+
3) FT/ married childless	-68.4	-135.3	-323.0
4) FT/ divorced children	262.7	-461.7	-572.3
5) FT/ unmarried childless	68.5	-772.5	-1388.2*
West Germany (Reference)	-	-	-
Switzerland	1144.6***	855.8***	835.6***
Educational Level ISCED 0 & 1 (Ref.)	-	-	-
ISCED 2	-	-93.8	-115.0
ISCED 3	-	311.7	279.7
ISCED 4	-	-262.3	-262.3
ISCED 5	-	733.4***	714.1***
Age	-	-32.6***	-33.8***
Current Marital Status: Married (Ref.)	-	-	-
Single	-	1057.7+	1111.0+
Divorced	-	790.1*	782.7*
Widowed	-	444.5*	480.4*
Interaction Effects Cluster*Switzerland			
1) FT/married 2+ children*Switzerland (Ref.)	-	-	-
2) FT/married 1 child*Switzerland	-	-	-395.8
3) FT/married childless*Switzerland	-	-	337.9
4) FT/divorced children*Switzerland	-	-	167.9
5) FT/unmarried childless*Switzerland	-	-	1115.1*
Constant	1904.3***	4055.2	4157.7***
R2	0.11	0.19	0.20
Observations	822	822	822

Notes: Significant estimate coefficients in grey (\*\*\*:  $p < .001$ , \*\*:  $p < .01$ ; \* :  $p < .05$ ; + :  $p < .10$ ).  
Meaning of categories: FT= Full-Time; OLF=Out of Labour Force; PT=Part-Time.



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<sup>i</sup> We refer to the Federal Republic of Germany (FRG), the former West throughout and exclude persons born in the communist German Democratic Republic (GDR) in the East. The life courses of our study cohorts developed during the German division and the GDR cannot be classified as a male breadwinner model but on the contrary set high incentives for female labour force participation.

<sup>ii</sup> Levy and Widmer (2013), instead of proposing one standard life-course, understand two ideal-typical gendered life-course regimes that are particularly relevant for the male breadwinner societies during which our study cohorts experienced their prime work-family life courses. On the one hand, male life courses correspond to the tripartite model proposed by Kohli (1986), i.e. education, then full-time employment in continuous occupational careers, and retirement. On the other hand, female life courses are characterised by education, then full-time work, but as soon as they marry and enter motherhood, they tend to leave the labour market, and then rarely return to work, or return mainly in part-time positions (Levy & Widmer, 2013).

<sup>iii</sup> Since the mid-2000s German social policies have shifted towards lower incentives for a male breadwinner model and a more liberal restrictive pension system (Seeleib-Kaiser, 2013). However, this shift did not affect our study cohorts because they were too old when the policies were implemented.

<sup>iv</sup> In 2010 still almost 30 percent of children were not covered (Stern et al., 2013).

<sup>v</sup> This duration was extended several times subsequently to a maximum of three years per child since 1992 (Gornick et al., 1997), although these later extensions are of little relevance for the study cohort.

<sup>vi</sup> The AVS is financed not by taxes but by contributions that individuals must additionally pay to the state. Regarding this and other social assistance procedures, scholars remark a lack of state accountability in welfare provision (Kuehni et al., 2013; Tabin & Togni, 2013).

<sup>vii</sup> Results were robust when using Optimal Matching with constant substitution costs of 2 and indel costs of half this uniform substitution cost of 1 (see MacIndoe & Abbott, 2004). Because the clustering yielded slightly better cut-off criteria we retain the Dynamic Hamming Distance for the final specification.

<sup>viii</sup> The silhouette is a graphical display for evaluating the partitioning quality of different cluster solutions, i.e. different numbers of clusters. In this graphical display “each cluster is represented by a so-called silhouette, which is based on the comparison of its tightness and separation. This silhouette shows which objects lie well within their cluster, and which ones are merely somewhere in between clusters. The entire clustering is displayed by combining the silhouettes into a single plot, allowing an appreciation of the relative quality of the clusters and an overview of the data configuration. The average silhouette width provides an evaluation of clustering validity, and might be used to select an ‘appropriate’ number of clusters.” (Rousseeuw, 1987: 1).