

Effects of Early Life Family Events on Women's Late Life Labour Market Behaviour: An Analysis of the Relationship between Childbearing and Retirement in Western Germany

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Abstract: The relationship between a woman's reproductive history and her entry into retirement is not well-investigated yet. Will mothers exit the workforce earlier than childless women (as they have a weaker labour market orientation; as they are more likely to have a 'male breadwinner' in the household), or will they work longer to make-up for employment interruptions during their reproductive phase? We exploit data from the German Socio-Economic Panel to estimate discrete-time logit models for women's transition to retirement, using detailed information on the individual's fertility biography as main explanatory variables. Our primary finding is that having children delays a woman's exit from the labour force. This effect tends to be stronger for mothers who experienced their first birth relatively late. Postponing fertility and retirement should both be driven by a relatively strong career orientation. Thus, in addition to household economic considerations, the individual's evaluation of her worker role relative to her family role is likely to be important. However, we do not find a significant influence of maternal employment during a child's pre-school years on the decision to retire.

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1. Introduction

A substantial body of research has evolved in recent years that investigates late life labour force transitions of both men *and* women (e.g., Dahl et al. 2003; Peracchi and Welch 1994; Ruhm 1996). At the same time, the role of household and family characteristics in such transitions has received growing attention (e.g., Drobnic 2002; Szinovacz et al. 1992). Finally, it has been emphasised that an exclusive focus on contemporaneous determinants is insufficient to explain the observed employment disparities among older men and women, which are likely to represent role patterns developed earlier in the family life course (e.g., Henretta et al. 1993; Pienta et al. 1994).

Following up on this literature, we examine the influence of early life family events on female labour market behaviour in later life. Although some studies suggest that having children might delay women's exit from the work force (e.g., Drobnic and Schneider 2000; O'Rand and Henretta 1982; Pienta 1999), the relationship between a woman's reproductive history and her entry into retirement has not been sufficiently investigated in a systematic manner yet. It is the aim of the present study to contribute to filling in this gap, using the (western) German case as an example. To begin with, we briefly elucidate the conceptual background of our paper, discussing the linkage between family context and women's retirement decision. In the empirical part we use data from the German Socio-Economic Panel (GSOEP) to estimate discrete-time logit models for women's transition to retirement across all waves from 1984 through 2000. Detailed information on the individual's fertility biography is used to construct our main explanatory variables.

2. The linkage between family context and women's entry into retirement

Many studies have shown that marital context matters particularly for women's retirement timing. Findings frequently support the so called 'joint-retirement hypothesis', which suggests that spouses often retire together, although wives are typically younger than their husbands (e.g., Allmendinger 1990; Blau and Riphon 1999; Hurd 1990; O'Rand and Farkas 2002). Several explanations, like assortative mating, economic variables, or the complementarity of leisure, have been put forward to explain this pattern (cf. Hurd 1990). More generally, Henretta and O'Rand (1983), for example, presume that – irrespective of gender – the characteristics of each spouse have a similar effect on the partners' retirement pattern. Other authors, however, dismiss the assumption of such symmetry in role relationships. They argue “that the cultural norm of the husband retiring later than his wife or at the same time is supported by familial ideology as to the appropriate relative economic power of spouses; a wife continuing in paid employment after her husband's retirement challenges his status as chief economic provider” (Arber and Ginn 1995: 71) and might jeopardise the family's social status through her usually lower occupational position (Allmendinger 1990: 291).

Particularly if the latter explanations were true, it would not be clear, whether the close relationship between men's and women's exit from the labour market will persist in the future. Compared to previous generations, a growing share of the current female population will not enter retirement anymore as dependent spouses in the first place, but as financially autonomous, pension-covered workers themselves, who have spent significant time in the paid labour force. Thus, Honig (1998: 206), for example, finds that “older married women today, in forming expectations about when to retire, not only

consider their husband's retirement plans, but also systematically evaluate their own future opportunity sets.”

Female participation in market work is a decisive determinant of present and future economic opportunity sets. Whether a woman is gainfully employed or not, however, very much depends on her reproductive history. Women with young children are less likely to be engaged in market work at all, and working mothers are more likely to be part-time employed than their childless counterparts (e.g., Gustafsson et al. 1996; Drobnic et al. 1999; Whittington et al. 2000). While this is by now quite well investigated, we know only relatively little about the work and retirement patterns of mothers in their later years, i.e. in the period after intensive childrearing (e.g., Pienta et al. 1994; Ruhm 1996).

According to O’Rand et al. (1992: 82, italics in the original), “the retirement process is appropriately viewed as temporarily embedded in *current* incentive-disincentive structures that mediate retirement decisionmaking and in *long-term* family relations that constitute the joint role pathways of couples through work and family domains.” With regard to the latter dimension, in which we are interested here, one can basically ask two questions (e.g., Pienta 1999): Will mothers exit the workforce earlier than childless women, having a presumably weaker labour market orientation throughout their life course and being more likely to have a ‘male breadwinner’ in the household? Or will they work longer – and independent of a potential partner’s status – to make-up for losses in their own personal income and retirement benefits due to reduced work hours or employment interruptions during their reproductive phase?

Yabiku (2000) points out that even though children need not necessarily reduce women’s total years in the labour force, they may create discontinuities in employment

careers, including temporary part-time work. The effect on (public and/or private) pension receipt might still be the same: various studies show that women are ‘penalised’ by childbearing and family care duties (cf. Evandrou and Glaser 2003; Kingson and O’Grady-LeShane 1993; Yabiku 2000). This is of considerable relevance for women’s economic well-being in old-age, particularly in a situation, where the greater overall access or entitlement to pensions for younger cohorts of women is likely to be paralleled by future cuts in public retirement income sources. This shifts even more saving and investment responsibility to the individual worker, particularly if she needs to buffer the effects of (temporary) labour exits resulting from conflicts between family and market contingencies (cf. Farkas and O’Rand 1998).

3. Data and method

Sample. Our data stem from the 1984 through 2001 waves of the German Socio-Economic Panel study (GSOEP), provided by the DIW Berlin (see SOEP Group, 2001, for a description). The sample refers to western German women aged 50 to 69. We restrict our analysis to western Germany, because the work-family nexus in eastern Germany was and is very different (cf. Kreyenfeld 2001; see Börsch-Supan and Schmidt, 1996, for a comparison of retirement patterns). Immigrants are also excluded from the sample. Since we are interested in the transition to retirement, the woman must have been employed (either part-time or full-time) for a period of at least one year after the age of 50. Finally, given that marriage and childbearing are two closely connected events (particularly in western Germany; e.g. Konietzka and Kreyenfeld 2002), we only consider ever married women.

Dependent variable. Following previous studies based on GSOEP data (e.g., Börsch-Supan et al. 2003; Drobnic 2002), we use self-reported retirement from the individuals employment history (PBIOSPELL) as a proven indicator of the retirement transition. While the expected ‘normal’ retirement age in the German public pension system (which covers about 85 percent of the workforce) is 65, there have been many exceptions allowing particularly women to retire at age 60 or even earlier.¹ Thus, the average retirement age in our sample is 59.8 years. It should be noted, that – according to our definition of retirement – the individual neither needs to be eligible for an old-age pension, nor does she need to receive pension payments to be considered as retired.

Explanatory variables. Since we are mainly interested in the effect of one particular factor – i.e. childbearing – on the woman’s retirement decision, we generate a parsimonious model that includes only very standard control variables.

Individual characteristics used in the regression are the woman’s *age* (six categories represented by dummy variables), the *highest educational degree* (as a measure of her human capital endowment), the number of *years spent in the labour force*, either full-time or part-time, till the age of 50 (as an indicator of her contributions to the pension system and her overall work orientation till the end of her reproductive period), the number of separate *employment spells* till the age of 50 (to account for possible discontinuities in her career), and her self-rated health status. Indirectly, these variables also catch institutional effects of the German pension system, particularly early retirement options at age 63 for individuals with a long service life (35 or more

¹ See Berkel and Börsch-Supan (2003), Börsch-Supan et al. (2003) for a description of the German pension system, its recent reforms, and institutional determinants influencing retirement decisions.

years in the labour force), for women at age 60 with at least 15 years of service (10 of those after age 40), or for older disabled individuals (cf. Börsch-Supan et al. 2003: Table 1). Including further, i.e. direct indicators of old-age pension eligibility neither changed the regression outcome of the other variables, nor did it improve the overall model fit.

In addition we account for several household characteristics, such as whether a *person needing care* lives in the household (to control for possible family obligations at home), whether the woman has a (retired) *partner*, the household's *monthly net income* (plus its square), and whether she is a *home owner* (as an indicator of assets and the household's overall economic situation).

Our main explanatory variables eventually refer to the woman's reproductive history: a binary indicator of whether she *ever had a child*, a continuous measure of the *number of children*, binary indicators of the *timing of fertility* (where we distinguish 'early' and 'late' childbearing by the median age at first birth in our sample, namely age 24), binary indicators of *maternal employment* during the oldest child's pre-school years (part-time or full-time for at least one year), and *interaction terms* between the timing and employment variables. *Table 1* displays descriptive sample statistics.

[Table 1 about here]

Method. Since this study uses annual information from the GSOEP, a discrete-time model is applied to analyse the individual's entry into the retirement state (cf. Allison 1982; Yamaguchi 1991).² A common choice to specify the discrete-time hazard

² Alternatively, i.e. with a different set-up of the data, a piecewise constant hazard model could be used (e.g., Drobnic 2002).

rate is the logistic regression function. If the conditional probability that an event occurs at time t (given that it has not occurred before time t) is sufficiently small, the logit model provides a good approximation to the continuous-time proportional hazards model (see Yamaguchi, 1991: Chapter 1, for a rule of thumb). The discrete-time logit model estimates the effect of the covariates on the log-odds of the event. The regression coefficients are then exponentiated to obtain so called odds ratios.

Different from conventional logistic regression analysis discrete-time models use multiple observations for each individual in the sample, i.e. each time unit during which an individual is observed contributes a separate and independent observation to the input data (Allison 1982: 81–87). Since the transition to retirement is defined here as a non-repeatable event, the individual is excluded from further observation once the event has occurred. This leads to insufficient variation in the dependent variable, prohibiting the identification of an individual-level unobserved heterogeneity term, as it would be the case in a standard panel regression model.

4. Results

For our analysis, we specified various models for three different sub-samples of women. *Table 2* gives the regression results for ever married women, to which we applied our main model, *Table 3* provides additional findings from alternative model specifications for the same sample, and *Tables A1* and *A2* in the paper's appendix display results for currently married women and for mothers, respectively. The outcome of the control variables is largely consistent with findings reported in previous studies of women's retirement (e.g., Drobnic 2002; Pienta 1999) and will therefore be discussed only briefly.

Naturally, the retirement decision is heavily determined by the individual's *age*. Transition rates increase significantly – but slowly – in a woman's fifties, sky-rocking immediately after age 59 with a marked peak in the age category 60-61. This clearly reflects the generous early retirement option for women, legislated in 1972 (see above). The probability to retire decreases sharply afterwards, but increases again around the official retirement age, i.e. in the age group 64 and over.

In line with expectations that can be derived from human capital theory, more highly educated women tend to stay in the labour force longer; the coefficients of the *educational variables* are not statistically significant, though. The number of *years a woman spent in employment* till the age of 50 clearly influences her decision to retire. A longer employment record results in earlier eligibility for old-age pensions and speeds up the transition to retirement significantly. *Career interruptions* (indicated by the number of separate employment spells), however, do not have any effect. Finally, individuals who report to have a *poor health* have a higher probability to withdraw from the labour market than their healthier counterparts.

Turning to household characteristics, we do not find a significant effect of the presence of a *person needing care*. This rather unexpected result might be explained in part by our lack of information on the actual time spent on caring. With regard to the role of a woman's *marital status*, the coefficients indicate that women living with a partner enter retirement later than their unmarried counterparts. This is consistent with results reported in a recent paper by Berkel and Börsch-Supan (2003), who suggest that the observed negative effect of being married is due to the higher probability of married women to have experienced family related employment interruptions, particularly during their childbearing years. However, since we control for career interruptions as

well as for children, this explanation cannot hold. Instead, what we see here might rather reflect an effect of our retirement measure, which is based on self-reported information. Married women should be more likely than unmarried ones to exit the labour force and pass through an intervening stage as a homemaker before considering themselves retired. In such a case, they may well report to be actually retired only when they reach the ‘normal’ retirement age of 65, which is way above the average (cf. Drobnic 2002).³ When analysing currently married women only, we find strong support for the joint retirement hypothesis, i.e. compared to those whose partner is still working, women with an already retired husband are twice as likely to retire themselves (see *Table A1*). Our final household variables, the household’s *monthly net income* and the binary *home ownership* indicator, both turn out to be insignificant.

[Table 2 about here]

In the main model (*Table 2*), we use the *number of children* as an indicator of the woman’s reproductive history. The coefficient is statistically significant and negative, i.e. the more children a woman has, the lower is her propensity to withdraw from the labour force.⁴ In the additional models displayed in *Table 3*, we investigate the

³ It is interesting to note that – in contrast to most married mothers in Germany – “[u]nmarried mothers often opt for full-time jobs when children grow older.” (Drobnic et al. 1999: 143). This should increase their prospective pension level and might thus also contribute to the observed differences in retirement behaviour.

⁴ The direction and the magnitude of this effect remain the same when the analysis is restricted to currently married women (cf. *Table A1*).

relationship between childbearing and retirement in greater detail.⁵ First, in order to check the robustness of the negative correlation observed above, we use a simple binary variable that indicates whether the woman ever had a child. It turns out that mothers have a roughly 35 percent lower risk to retire in year t than the childless. In a next step we take into account the *timing of fertility*. While there are no statistically significant differences between the childless and early childbearers⁶, it shows that particularly women who had their first child later, i.e. after age 23, postpone retirement.⁷ According to Pienta (1999: 77), who made a similar observation in a sample of US women, “[t]his suggests that women who delay childbearing do maintain stronger ties to the labor force in later life.” Since participation in market work in later years is likely to be a continuation of earlier labour force attachment (Pienta et al. 1994), these women might also be the ones who are most likely to have worked when their children were young. To account for the potential influence of maternal employment during an early stage of the family life course, we estimate another model that includes an indicator of the mother’s labour force participation during the oldest child’s pre-school years. In contrast to research by Henretta et al. (1993), who find that US women’s employment during the childrearing years is associated with earlier retirement, we cannot identify any such effect in our analysis. The coefficients of the ‘worker’ and ‘homemaker’

⁵ The coefficients of the control variables do not differ from those reported above and will not be discussed anymore.

⁶ The similarity between these two groups of women might be explained by the assumption that childlessness in the cohorts under study is primarily involuntary and that involuntarily childless women would have borne a child at an average age. Late fertility however is assumed to be a matter of choice (cf. Hofferth 1984).

⁷ This effect does not increase, though, when we use a higher age limit (27 or 30, respectively) to define ‘late fertility’.

variables both indicate a later exit from the labour market and are not significantly different from each other. Neither does the interaction between the timing of fertility and early maternal employment – in the final model – reveal further insights.

[Table 3 about here]

Eventually, we estimated a ‘mothers only’ model that includes the number of children, the timing of fertility, and information on the mother’s employment when the first child was young (*Table A2*). The analysis confirms the results for married women. Each additional child results in lower transition rates to retirement and mothers who started childbearing late are also more likely to exit the labour force later. It should be noted, though, that the respective coefficients are only weakly significant at the 10-percent-level. Early maternal participation in labour market activities has no own effect.

5. Conclusions

Investigating the role of a woman’s reproductive history in her retirement decision, this paper adds to a recent literature that emphasises the importance of the family context in retirement decisions. According to the hypotheses formulated above, children might both delay or speed-up the transition to retirement. Our empirical results for a sample of western German women in the 1980s and 1990s provide statistically significant evidence that mothers retire later than their childless counterparts. This effect tends to be stronger, when the mother experienced her first birth relatively late.

Having children clearly produces disadvantages for women who plan to retire. Women’s options in combining the mother and worker roles are structurally constrained

in most industrialised societies (e.g., Brewster and Rindfuss 2000) and, as a result, mothers will usually face lower final benefit levels, if they qualify for pension benefits at all. “A typical female employment pattern in Germany consists of full-time work until marriage and children, a prolonged stay out of the labor market, and a return to paid employment via part-time work when the youngest child reaches school age.” (Drobnic et al. 1999: 143) Thus, mothers who re-entered the labour market after childbearing may indeed be expected to work longer in order to improve their pension opportunities (e.g., Farkas and O’Rand 1998; O’Rand and Landerman 1984). While this should hold particularly for women who were not able to establish early work careers, e.g. such with early childbearing experiences (cf. O’Rand and Henretta 1982), our data show the contrary, i.e. especially those women who started childbearing at a higher age retire later than others.

Our explanation for this finding suggests that mere pension related considerations might be less important than the individual’s evaluation of her worker role relative to her family role.⁸ Since many women’s employment histories exhibit family related discontinuities, they might “regard their mid-life as a special challenge and opportunity, and may view the later phase of their work career in a different way from men. They are also less likely than men to have achieved their career goals at the time their spouses wish to retire” (Bernard et al. 1995: 57). Such considerations, that refer to the individual’s social status and occupational prestige rather than to her income, should be particularly prevalent among women with a strong work orientation and better career opportunities – and it is typically these women who have a higher age at motherhood

⁸ Hofferth (1984: 147) even shows that women who delayed the first birth until age 30 or older are better off economically at age 60 than those who had their first birth earlier.

(see Gustafsson 2001, for example). However, when controlling for retirement effects of maternal employment during the earlier childrearing years, we do not find additional support for this explanation. A reason for the insignificance of young mothers' employment status can be seen in the institutional set-up of the 'conservative' German welfare state (reflected, for example, by the poor provision of public child care) that constitutes a major obstacle to all mothers' labour force participation, independent of their education, work orientation, or the like (cf. Drobnic et al. 1999: 144; Kreyenfeld and Hank 2000).

One might still assume – a priori – that family orientation should be strongest and labour market attachment should be weakest among women with children. Thus it needs some further explanation, why mothers tend to retire later. First, one may need to take into consideration the selection of our sample, which comprises only women who were gainfully employed for at least one year after age 50. Particularly the mothers in our analysis are therefore likely to exhibit a higher work orientation and – consequently – a greater involvement in paid employment than the average population (Drobnic 2002). Moreover, Hofferth (1984: 153) cites work showing “that childless women [born in the US at the turn of the 20th century; K.H.] were even less likely to be employed when in their 40s and 50s than those with children.” Second, even if it is not for an improvement of their own pension opportunities, household economic considerations may still drive mothers to prolong their participation in the paid labour force. Greater family responsibilities can pose some barrier to the individual's labour force exit, because

children (or grandchildren) may be in need of financial support (e.g. Drobnic and Schneider 2000; Pienta 1999).⁹

A couple of immediate subsequent research questions can be derived from our findings. While, first, financial needs of the younger generation may result in longer employment of mothers (as indicated above), family care needs may as well lead to reduced work hours or women's earlier exit from the work force (e.g., Spiess and Schneider 2003). What should be examined further is therefore the relative importance of intergenerational financial transfers based on female earnings over intra-family caregiving provided by older women. Of particular interest is, whether or how this is influenced by different welfare state models (comparing, for example, service-heavy versus transfer-heavy systems). Second, the life course dynamics of work-family-roles in partnerships and their relevance for later life labour market behaviour still need to be analysed in greater detail. Such research may also benefit most from cross-national research, i.e. from paying close attention to the social, economic, and institutional contexts, in which gender relations are formed and in which individual's eventually make their retirement decision.

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⁹ Since the children of 'late' childbearers will be younger, i.e. less independent, when the mother reaches retirement age, it is possible that financial needs of these children explain some of the observed delay in their mother's labour force exit (cf. Hofferth 1984: 152).

References

- Allison, P.A. (1982): Discrete-time methods for the analysis of event histories. In: S. Leinhardt (Ed.), *Sociological Methodology* [Vol. 12]. San Francisco: Jossey-Bass, 61-98.
- Allmendinger, J. (1990): Der Übergang in den Ruhestand von Ehepaaren. Auswirkungen individueller und familiärer Lebensverläufe. In: K.-U. Mayer (Ed.), *Lebensverläufe und sozialer Wandel* [Kölner Zeitschrift für Soziologie und Sozialpsychologie, Special Issue 30], 272-303.
- Arber, S., J. Ginn (1995): Choice and constraint in the retirement of older married women. In: S. Arber & J. Ginn (Eds.), *Connecting Gender and Ageing. A Sociological Approach*, Buckingham & Philadelphia: Open University Press, 69-86.
- Berkel, B., A. Börsch-Supan (2003): Pension reform in Germany: The impact on retirement decisions. *NBER Working Paper 9913*.
- Bernard, M., C. Itzin, C. Phillipson, J. Skucha (1995): Gendered work, gendered retirement. In: S. Arber & J. Ginn (Eds.), *Connecting Gender and Ageing. A Sociological Approach*, Buckingham & Philadelphia: Open University Press, 56-68.
- Blau, D.M., R. Riphahn (1999): Labor force transitions of older married couples in Germany. *Labour Economics*, 6 (2), 229-251.
- Börsch-Supan, A., P. Schmidt (1996): Early retirement in East and West Germany. In: R. Riphahn et al. (Eds.), *Employment Policy in Transition. The Lessons of German Integration for the Labor Market*, Berlin (and others): Springer, 83-102.
- Börsch-Supan, A., S. Kohnz, R. Schnabel (2003): Micro-modelling of retirement choices in Germany. In: J. Gruber & D. Wise (Eds.), *Incentive Effects of Public Pension Systems*, Chicago: University of Chicago Press, forthcoming.
- Brewster, K.L., R.R. Rindfuss (2000): Fertility and women's employment in industrialized nations. *Annual Review of Sociology*, 26, 271-296.
- Dahl, S.-Å., Ø.A. Nilsen, K. Vaage (2003): Gender differences in early retirement behaviour. *European Sociological Review*, 19 (2), 179-198.

- Drobnic, S. (2002): Retirement timing in Germany. The impact of household characteristics. *International Journal of Sociology*, 32 (2), 75-102.
- Drobnic, S., H.-P. Blossfeld, G. Rohwer (1999): Dynamics of women's employment patterns over the family life course: A comparison of the United States and Germany. *Journal of Marriage and the Family*, 61 (1), 133-146.
- Drobnic, S., T. Schneider (2000): Der Übergang erwerbstätiger Ehepartner in den Ruhestand aus der Lebensverlaufperspektive. *Zeitschrift für Soziologie der Erziehung und Sozialisation (Supplement 3)*, 205-220.
- Evandrou, M., K. Glaser (2003): Combining work and family life: the pension penalty of caring. *Ageing & Society*, 23 (5), 583-601.
- Farkas, J.I., A.M. O'Rand (1998): The pension mix for women in middle and late life: The changing employment relationship. *Social Forces*, 76 (3), 1007-1032.
- Gustafsson, S.S. (2001): Optimal age at motherhood. Theoretical and empirical considerations on postponement of maternity in Europe. *Journal of Population Economics*, 14 (2), 225-247.
- Gustafsson, S.S., C.M.M.P. Wetzels, J.D. Vlasblom, S. Dex (1996): Women's labor force transitions in connection with childbirth: A panel data comparison between Germany, Sweden and Great Britain. *Journal of Population Economics*, 9 (3), 223-246.
- Henretta, J., A. O'Rand (1983): Joint retirement in the dual worker family. *Social Forces*, 62 (2), 504-520.
- Henretta, J.C., A. O'Rand, C.G. Chan (1993): Joint role investments and synchronization of retirement: A sequential approach to couple's retirement timing. *Social Forces*, 71 (4), 981-1000.
- Hofferth, S.L. (1984): Long-term economic consequences for women of delayed childbearing and reduced family size. *Demography*, 21 (2), 141-155.
- Honig, M. (1998): Married women's retirement expectations: Do pensions and social security matter? *American Economic Review*, 88 (2), 202-206.

- Hurd, M. (1990): The joint retirement decision of husbands and wives. In: D.A. Wise (Ed.), *Issues in the Economics of Aging*, Chicago: University of Chicago Press, 231-254.
- Kingson, E.R., R. O'Grady-LeShane (1993): The effects of caregiving on women's social security. *The Gerontologist*, 33 (2), 230-239.
- Konietzka, D., M. Kreyenfeld (2002): Women's employment and non-marital childbearing: A comparison of East and West Germany in the 1990s. *Population*, 57 (2), 331-358.
- Kreyenfeld, M. (2001): *Employment and Fertility – East Germany in the 1990s* (Doctoral Dissertation), Rostock: University of Rostock.
- Kreyenfeld, M., K. Hank (2000): Does the availability of child care influence the employment of mothers? Findings from western Germany. *Population Research and Policy Review*, 19 (4), 317-337.
- O'Rand, A.M., J.I. Farkas (2002): Couples' retirement timing in the United States in the 1990s. The impact of market and family role demands on joint work exits. *International Journal of Sociology*, 32 (2), 11-29.
- O'Rand, A.M., J.C. Henretta (1982): Delayed career entry, industrial pension structure, and early retirement in a cohort of unmarried women. *American Sociological Review*, 42 (3), 365-373.
- O'Rand, A.M., J.C. Henretta, M.L. Krecker (1992): Family Pathways to Retirement. In: M. Szinovacz et al. (Eds.), *Families and Retirement: Conceptual and Methodological Issues*, Beverly Hills: Sage, 81-98.
- O'Rand, A.M., R. Landerman (1984): Women's and men's retirement income: Early family role effects. *Research on Aging*, 6 (1), 25-44.
- Peracchi, F., F. Welch (1994): Trends in labor force transitions of older men and women. *Journal of Labor Economics*, 12 (2), 210-242.
- Pienta, A. (1999): Early childbearing patterns and women's labor force behavior in later life. *Journal of Women & Aging*, 11 (1), 69-84.

- Pienta, A.M., J.A. Burr, J.E. Mutchler (1994): Women's labor force participation in later life: The effects of early work and family experiences. *Journal of Gerontology: Social Sciences*, 49 (5), S231-S239.
- Ruhm, C. (1996): Gender differences in employment behavior during late middle age. *Journal of Gerontology: Social Sciences*, 51 (1), S11-S17.
- Spiess, C.K., U. Schneider (2003): Interactions between care-giving and paid work hours among European midlife women, 1994 to 1996. *Ageing & Society*, 23 (1), 41-68.
- Szinovacz, M., D.J. Ekerdt, B. Vinick (Eds.) (1992): *Families and Retirement: Conceptual and Methodological Issues*. Beverly Hills: Sage.
- SOEP Group (2001). The German Socio-Economic Panel (GSOEP) after more than 15 years – overview. In: E. Holst et al. (Eds.), *Proceedings of the 2000 Fourth International Conference of German Socio-Economic Panel Study Users (GSOEP 2000)*, *Vierteljahrshefte zur Wirtschaftsforschung*, 70 (1), 7-14.
- Whittington, L., S. Averett, D. Anderson (2000): Choosing children over career? Changes in the postpartum labor force behavior of professional women. *Population Research and Policy Review*, 19 (4), 339-355.
- Yabiku, S.T. (2000): Family history and pensions: The relationships between marriage, divorce, children, and private pension coverage. *Journal of Aging Studies*, 14 (3), 293-312.
- Yamaguchi, K. (1991): *Event History Analysis*. Newbury Park: Sage.

Tables

Table 1: Descriptive sample statistics

	<i>Mean (Standard Deviation)^a</i>
Dependent variable	
Retired	7 %
Individual characteristics	
<i>Age group</i>	
Age 50-53	36 %
Age 54-57	33 %
Age 58-59	14 %
Age 60-61	9 %
Age 62-63	4 %
Age 64+	4 %
<i>Education & employment history</i>	
No degree	39 %
Vocational degree	54 %
University degree	6 %
Years in labour force (at age 50)	21,49 (9,50)
# of employment spells (at age 50)	2,22 (1,17)
Self-reported poor health	11 %
Household characteristics	
Person needing care	4 %
No partner	15 %
Partner, not retired	59 %
Partner, retired	25 %
Net household income (DM/month)	4166,38 (2884,73)
Home owner	63 %

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Table 1: Descriptive sample statistics (continued)

	<i>Mean (Standard Deviation)^a</i>
Reproductive history	
# of children	2,13 (1,36)
Ever children	91 %
'Early' first birth (< age 24)	40 %
'Late' first birth (\geq age 24)	51 %
Child young, mother employed	24 %
Child young, mother not employed	67 %
'Early' first birth * employed	12 %
'Early' first birth * not employed	28 %
'Late' first birth * employed	12 %
'Late' first birth * not employed	39 %
Sample size	
# of observations	5,765
# of women	837
# of events	386
<i>Source:</i> GSOEP, 1984-2001, author's calculations.	
^a For binary variables, no standard deviation is displayed.	

Table 2: Discrete-time logistic regression results for *ever married* women's transition to retirement, 1984 to 2000 – Main model

	<i>exp (b)</i>	<i>s.e.</i>	<i>t</i>
Individual characteristics			
<i>Age group</i> ^a			
Age 54-57	3.09	.83	4.18 ***
Age 58-59	4.93	1.41	5.56 ***
Age 60-61	52.40	13.47	15.40 ***
Age 62-63	15.68	4.82	8.95 ***
Age 64+	26.15	7.59	11.24 ***
<i>Education & employment history</i>			
Vocational degree ^b	.88	.11	-1.01
University degree ^b	.62	.18	-1.61
Years in labour force (at age 50)	1.02	.01	2.89 ***
# of employment spells (at age 50)	1.05	.06	.90
Self-reported poor health	1.45	.24	2.20 **
Household characteristics			
Person needing care	1.14	.28	.51
Partner, not retired ^c	.31	.06	-6.14 ***
Partner, retired ^c	.72	.12	-1.98 **
Household income	1.00	.01	.33
Squared household income	1.00	.00	-.65
Home owner	.92	.12	-.67
Reproductive history			
# of children	.91	.04	-2.03 **
Constant	-4.30	.40	-10.73 ***
<i>Pseudo-R</i> ²		.27	
<i>Source:</i> GSOEP, 1984-2001, author's calculations.			
^a Reference category: age 50-53.			
^b Reference category: no degree.			
^c Reference category: no partner.			
Significance: * < .10; ** < .05; *** < .01.			

Table 3: Selected discrete-time logistic regression results for *ever married* women's transition to retirement, 1984 to 2000 – Additional models^a

	<i>exp (b)</i>	<i>s.e.</i>	<i>t</i>
(a) Binary specification of children			
Ever child	.63	.13	-2.21 **
(b) Age at first birth^b			
'Early' first birth	.71	.16	-1.53
'Late' first birth	.59	.13	-2.49 **
(c) Mother's labour force participation^b			
Child young, mother employed	.57	.13	-2.39 **
Child young, mother not employed	.66	.14	-1.94 *
(d) Timing of fertility & mother's labour force participation^b			
'Early' first birth * employed	.62	.16	-1.81 *
'Early' first birth * not employed	.77	.18	-1.12
'Late' first birth * employed	.54	.14	-2.35 **
'Late' first birth * not employed	.61	.13	-2.25 **
<i>Source:</i> GSOEP, 1984-2001, author's calculations.			
^a All control variables used in the main model (cf. Table 2) are also included here.			
^b Reference category: no children.			
Significance: * < .10; ** < .05; *** < .01.			

Appendix

Table A1: Discrete-time logistic regression results for *currently married* women's transition to retirement, 1984 to 2000^a

	<i>exp (b)</i>	<i>s.e.</i>	<i>t</i>
Individual characteristics			
<i>Age group^b</i>			
Age 54-57	4.79	2.00	3.75 ***
Age 58-59	8.86	3.80	5.08 ***
Age 60-61	116.17	46.58	11.86 ***
Age 62-63	22.85	10.66	6.71 ***
Age 64+	65.02	28.03	9.68 ***
<i>Education & employment history</i>			
Vocational degree ^c	1.04	.16	.28
University degree ^c	.91	.33	-.27
Years in labour force (at age 50)	1.03	.01	3.33 ***
# of employment spells (at age 50)	1.02	.07	.30
Self-reported poor health	1.54	.31	2.18 **
Household characteristics			
Person needing care	1.21	.33	.72
Retired partner	2.16	.35	4.80 ***
Household income	1.01	.02	.65
Squared household income	1.00	.00	-.81
Home owner	.75	.11	-1.86 *
Reproductive history			
# of children	.88	.05	-2.18 **
Constant	-6.21	.60	-10.38 ***
<i>Pseudo-R²</i>		.31	
<i>Source: GSOEP, 1984-2001, author's calculations.</i>			
^a Sample: 4,832 observations, 680 women, 285 events.			
^b Reference category: age 50-53.			
^c Reference category: no degree.			
Significance: * < .10; ** < .05; *** < .01.			

Table A2: Discrete-time logistic regression results for *mothers'* transition to retirement, 1984 to 2000^a

	<i>exp (b)</i>	<i>s.e.</i>	<i>t</i>
Individual characteristics			
<i>Age group</i> ^b			
Age 54-57	2.93	.80	3.93 ***
Age 58-59	3.94	1.19	4.55 ***
Age 60-61	44.07	11.60	14.38 ***
Age 62-63	14.92	4.68	8.61 ***
Age 64+	26.02	7.78	10.90 ***
<i>Education & employment history</i>			
Vocational degree ^c	.88	.12	-.99
University degree ^c	.65	.21	-1.33
Years in labour force (at age 50)	1.02	.01	2.59 **
# of employment spells (at age 50)	1.06	.06	1.00
Self-reported poor health	1.58	.27	2.65 ***
Household characteristics			
Person needing care	1.00	.27	.02
Partner, not retired ^d	.30	.06	-6.05 ***
Partner, retired ^d	.65	.12	-2.44 **
Household income	1.00	.01	-.09
Squared household income	1.00	.00	-.48
Home owner	1.12	.16	.84
Reproductive history			
# of children	.91	.05	-1.72 *
'Early' first birth	1.30	.18	1.94 *
Child young, mother employed	.84	.13	-1.08
Constant	-4.25	.42	-10.22 ***
<i>Pseudo-R</i> ²		.26	
<i>Source:</i> GSOEP, 1984-2001, author's calculations.			
^a Sample: 4,910 observations; 757 women; 344 events.			
^b Reference category: age 50-53.			
^c Reference category: no degree.			
^d Reference category: no partner.			
Significance: * < .10; ** < .05; *** < .01.			