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ABSTRACT

Birth and Employment Transitions of Women in Turkey: Conflicting or Compatible Roles?*

The relationship between fertility and employment among women is a challenging topic that requires further exploration, especially for developing countries where the micro and macro evidence fails to paint a clear picture. This study analyzes the two-way relationship between women's employment and fertility in Turkey using a hazard approach with piece-wise constant exponential modelling, using data from the 2008 Turkey Demographic and Health Survey. To the best of the authors' knowledge, this is the first study that makes use of an event history analysis to analyze this relationship within a developing country context. Specifically, a separate analysis is made of the association between the employment statuses of women in their first, second, third, and fourth and higher order conceptions, and the association of fertility and its various dimensions with entry and exit from employment. The findings suggest that a two-way negative association exists between fertility and employment among women in Turkey, with increasing intensities identified among some groups of women. Our findings also cast light on how contextual changes related to the incompatibility of the roles of worker and mother have transformed the fertility-employment relationship in Turkey, in line with propositions of the role incompatibility hypothesis.

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1. Introduction

The relationship between fertility and employment among women is a topic that requires further clarification, especially in developing countries where fertility is still in transition. The extensive body of literature on this relationship is based largely on the experiences of developed countries, focusing on the causes of fertility decline from the demographic transition perspective. In the developed world, there is an apparent shift from a negative relationship to a weakening negative or even a positive one at the macro level. The decreasing incompatibility of the roles of worker and mother resulting from changes in the societal response and institutional context goes some way to explaining this shift. Macro evidence from developing countries, on the other hand, paints a more ambiguous picture, and one reason for this is the ongoing demographic transition in these countries. Micro-level studies, due to their less descriptive and more instrumental character, are better able to explain the complex mechanisms that underlie women's childbearing and employment decisions (Matysiak, 2011, p. 8). At a micro level, the relationship is generally negative; however no clear pattern can be observed either in developed or in developing countries, mostly due to the lack of comparability of the context, definitions and methodology of the studies.

This study analyzes the possible existence of a two-way relationship between employment and fertility in women in Turkey. To this end, an event history analysis is made that makes use of micro-level data from the 2008 Turkey Demographic and Health Survey, and this use of retrospective data ensures that the time dimension is taken into account in the models. To the best of the authors' knowledge, this is the first time an event history analysis is used in a study of this relationship within a developing country context. In addition to contributing to the micro literature in a developing context in the field, there are two main reasons for focusing on Turkey, the first of which is policy-oriented. Although the fertility rate has been declining in Turkey since the 1950s, employment among women has always remained at low levels. Recently, government has begun to encourage both fertility and employment among women, although public discourse seems to favor the former over the latter, and effective reconciliation mechanisms have only recently been developed. Investigating the relationship between fertility and employment among women will elucidate what effect prioritizing pronatalist over pro-employment policies would have on the employment status of women in Turkey. The second reason for focusing on Turkey is related to the lack of research in the field in the country, despite the considerable structural changes related to the working and mothering roles of women that have been taking place since the 1960s that both brought, and

were a result of, the demographic transformation. The sectoral shift in prominence from agricultural to the service sector in female employment is one such change, although the structural changes have not been accompanied by cultural or institutional changes. The low institutionalization of childcare, the dominance of the care regime in the patriarchal family model, and the social norm that prioritizes motherhood over employment are all characteristics of the country's history, and this continues today, leading women to opt to work in unpaid or non-wage jobs that offer no social coverage, or not to work at all. Accordingly, there is an apparent need to re-study the work-fertility relationship in Turkey within its new context using a methodology that makes a thorough analysis of the entire work and fertility histories of women. Addressing this need, this study aims to contribute to literature with an analysis of how employment has affected fertility, and vice-versa, over a period of over 35 years within the context of Turkey, taking into account both the timing and order of events.

This study analyzes the association of the employment status of women with first, second, third, and fourth and higher-order conceptions, and makes a separate study of the association of fertility and its various dimensions with entering and exiting employment. The association between job characteristics and progression to conception is analyzed as well, providing information on the effect of the organization of work on fertility outcomes. Finally, we look at interaction effects of these variables and calendar periods to cast light on how contextual changes related to incompatibility of worker and mother roles of women have affected the relationship between fertility and employment in Turkey.

This study is set out as follows: Section 2 presents information on the context of Turkey in terms of the relationship between fertility and employment among women, while the theoretical background and previous empirical studies are presented in Section 3. The data and methodology used in the study are presented in Section 4, while Section 5 makes a detailed presentation of the findings. The paper concludes in Section 6 with a discussion and recommendations for future work.

2. Context of Turkey: Structural, economic, cultural and institutional dimensions

Today, with its declining levels of fertility and mortality, Turkey has entered the final stage of its demographic transition. The decline in fertility started in the 1950s and gained pace after the 1970s. According to the findings of TDHS-2013, the fertility rate was just above the

replacement level at 2.26 for the 2010–2013 period, although the fertility transition was not uniform in Turkey. The regional differences in fertility levels in the country ranged from a total fertility rate of 1.93 in the Western region to 3.41 in the Eastern region for the 2010–2013 period (HUIPS, 2014).

The structural factors that were most associated with the onset of fertility transition in Turkey were female education and urbanization rather than the employment of women. The female labor force participation rate has always been low in Turkey, and has not exceeded 36 percent since 1988 (Tansel, 2001; TURKSTAT, 2014). Among the OECD member states, Turkey has the lowest female labor force participation rate (34 percent in 2013) (OECD, 2014); and half of employed women are non-wage earners (49.8 percent in 2008 according to TDHS). Furthermore, the number of unpaid female family workers in agriculture is still high (32.4 percent); and although declining over time, social security coverage among women has been historically low among women in employment in the country.

The share of women employed in the agriculture sector has been declining, while their engagement in the services sector has been increasing steadily in Turkey (Tansel, 2001), and this sectoral shift in the female labor market has made it difficult to balance the roles of mother and worker among women, a problem that is made worse by the continued patriarchal family care regime in Turkey. Throughout its modernization and development, the patriarchal family, rather than evolving into a more egalitarian form, has rather become stronger in Turkey. The last two decades were marked by financial liberalization and economic downturns in the country, occurring in 1994, 2001 and 2008–2009, and a substantial increase was seen in the number of women entering the labor market due to the added-worker effect in response to the loss of job of the husband (Ayhan, 2015; Değirmenci & İlkkaracan, 2013). The employment outcomes of women, however, were dependent upon their education level, with those with a low level of education tending to enter the labor market on a temporary basis and as a secondary earner to the main "bread-winner" to overcome the financial problems of the family. Educated women (secondary or high school level of education), in contrast, left the labor market for such familial reasons as marriage, the will of the husband and to take a greater role in household care. The lack of mechanisms for the reconciliation of the family and work life led to a continuation of patriarchal family model (Ilkkaracan, 2010).

A number of cultural factors are embedded in these developments, and likewise, in the relationship between fertility and employment among women. Social values and norms related to women in Turkey prioritize motherhood over work, although the societal role of woman includes both family responsibilities and work. According to the World Values Survey Wave 6 carried out in 2010–2014 (WVS, 2014), 63.6 percent of men and 55.1 percent of women agreed that, "When jobs are scarce, men should have more rights to a job than women". Furthermore, 73 percent of men and 66.8 percent of women agreed that, "Being a housewife is just as fulfilling as working for pay". According to a survey on "Family, Employment and Gender in Turkey", carried out in coordination with the International Social Survey Program (ISSP) (Çarkoğlu & Kalaycıoğlu, 2013), 69 percent of respondents thought that "an ideal situation for work-family life of a family with a pre-school aged child is for the father to be full-time employed and the mother to stay at home". That said, it is apparent that the working role of women has not been discarded completely as a norm in Turkey, in that according to this ISSP Survey, 67 percent of the respondents agreed that both men and women should contribute to the household budget.

An effective work and family reconciliation mechanism would help lessen the incompatibility of the roles of worker and mother in Turkey, although until recently, family policies have been passive, favoring civil servant women or poor families (Bozçağa, 2013). When compared to the 2015 figures for OECD countries, Turkey (16.0 months) ranks slightly below the OECD average (17.7 months) in terms of paid maternity leave. Civil servant mothers under Civil Servants Law no. 657 are paid fully by their employers during this period, while working women under Labor Law no. 4857 receive two-thirds of their salary from the Social Security Institution after their Maternity Leave is over. Paternal leave, in contrast, was increased from three to 10 days on February 25 2011 for male civil servants under Civil Servants Law no. 657, with no paternal leave granted to working fathers under Labor Law no. 4857 until April 23 2015 when five days was given. It should be noted that this is still lower than the 2015 OECD average of 6.3 days (OECD, 2016). No regulation on parental leave exists in Turkey, although some flexible work schemes came into effect with Law no. 6663, dated February 10 2016. As to cash transfers attached to caregiving in Turkey, only civil servants are paid a family allowance. A new regulation on birth allowance was passed (By-Law on the Birth Allowance dated 23 May 2015) stating that every mother would get lump some cash for her child born after 15th of May, 2015, based on her total parity, but cash

transfers are too low to affect fertility or employment outcomes. There are also conditional cash transfers, which target only the poorest families.

Last but not least, of the reconciliation mechanisms, the educational institutionalization of pre-school-age children is considerably low in Turkey. For children aged up to three years, no institutionalization takes place. Regarding the participation rates of those aged three to five in pre-primary education or primary school, Turkey has ranked last since 2004 (OECD, 2016), with the current rate being 30.9 percent compared to the OECD average of 82.0 percent in 2012. Early childhood care takes place at home in Turkey, and the main caregiver is the mother, even if she is working. According to the results of TDHS-2008, 31.0 percent of employed women with a child under five take care of their children themselves. Although no retrospective data exists on the availability of parental surrogates who take care of children in the absence of the mother, the results of TDHS-1998, 2003, 2008 and 2013 indicate that the share of care given by relatives to children aged under six while the mother is working has remained stable at around 38 percent. This shows that childcare has changed very little in the last four decades in Turkey.

3. Theoretical and empirical considerations
3.1 Theoretical framework
There are two main theoretical frameworks that explain the relationship between fertility and female employment in socio-demographic literature: the (maternal) role incompatibility hypothesis; and the societal response hypothesis (Narayan & Smyth, 2006, pp. 564-565). The societal response hypothesis applies to industrialized countries, and tries to find an explanation for the negative to positive change in the relationship between fertility and female employment after the 1980s in industrialized countries (Brewster & Rindfuss, 2000; Engelhardt, Kogel, & Prskawetz, 2004). Taking into account the context of Turkey, the role incompatibility hypothesis would appear to be an appropriate approach to studying the relationship between fertility and employment among women. This has already been verified in Stycos and Weller (1967) study of Turkey using data from a survey carried out in 1963.

The role incompatibility hypothesis argues that "*an inverse relationship between women's work and fertility occurs only when the roles of worker and mother conflict*" (Mason & Palan, 1981, p. 551). The roles of mother and worker are most incompatible when the job is outside the home, and in locations where people believe that mothers or close relatives should care for

children (Dixon-Mueller, 1994). On the other hand, when roles are compatible, no relationship between fertility and employment of women is expected.

In most specifications of this hypothesis, there are two mechanisms determining the level of conflict between the two roles: (1) the organization of production (nature of the task), and (2) the (social) organization of childcare (Mason & Palan, 1981; Stycos & Weller, 1967). The former mechanism relies heavily on the level of industrialization of the society. In the rural Third World, women are able to work in a place close to their children, and may have a more flexible schedule than women living in industrialized societies. In industrial societies, on the other hand, women tend to work in places that are distant from their child, such as factories, offices or stores, and are more likely to have a relatively inflexible schedule (Mason & Palan, 1981). This separation of the home and gainful employment, and the relatively inflexible hours of employment in industrialized settings were noted also by Weller (1977, p. 44), who also spoke about the incompatibility of the roles of mother and worker. Lehrer and Nerlove (1986, p. 182), addressing this incompatibility in industrialized societies, claim that "the demands of working are in conflict with the demands of childcare". In other words, "there is a strain between the mother and worker roles".

In the developing world, it has been suggested that traditional social norms reduce the scale of the relationship between fertility and the employment of women (Beguy, 2009). Beguy (2009) explains traditional social norms in terms of gender roles and the division of household labor between men and women, in which the role of child rearing is ascribed to women and the role of working and breadwinning to men. This can result in women developing a negative attitude to work outside the home, and/or leading them to choose a job that is compatible with their role as a mother. In developing countries, various social norms may co-exist, depending on the residence and region, and the macro outcomes could be a result of the dichotomy between traditional women choosing a motherhood role versus modern women choosing a career. Traditional/modern settings within a country can be accounted for by controlling for the urban-rural place of a residence or location, which may differ depending on the level of development or industrialization. "Traditional" versus "modern" groupings of women can be considered to control for the characteristics among women that are defined as "material aspirations and orientations towards family and paid work (Matysiak, 2011)" to some extent as well.

The organization of childcare, as the second mechanism determining the level of conflict between the roles of worker and mother, relies on the fact that it is easy to work outside home if parental surrogates are cheaply available in the form of relatives, friends or state agencies (Stycos & Weller, 1967). Since Third World women often have relatives living nearby, they are thought to have greater access to inexpensive and reliable childcare than women in urban and industrial settings. It is expected that the decline of extended family households and the decreasing pool of domestic servants will result in an inverse relationship between fertility and employment.

This study uses the contextual explanations of the role incompatibility hypothesis, as well as other possible mediating factors, when studying the female employment fertility nexus in Turkey at the micro level. The mechanisms affecting the degree of conflict between the roles of worker and mother are controlled by such contextual variables as an urban-rural place of residence, calendar effects and the organization of work in time.

3.2 Previous empirical studies

In the 1960s, cross-sectional data suggested that while an inverse relationship between fertility and female labor force participation was identified in developed countries, it tended to be weak or absent in developing countries (Concepcion, 1974). In his multi-country analysis, Caceres-Delpiano (2012) claims that fertility affected employment among women negatively in developing countries in the 1990s and 2000s. Studies of developing countries look predominantly at Latin America,[1] and a review of this literature has provided different conclusions. According to Schockaert (2005), contextual variables like developmental and fertility levels, as well as the period of the study, affect the findings, but overall, a weakening association can be identified in Latin America. Different to developed countries, this can be explained by the decline in the proportion of wage earners employed in modern jobs and increases in the proportion of non-wage earning females.

None of the studies into the relationship between fertility and employment in developing countries have employed an event history analysis, due mainly to the lack of retrospective data. In developed countries, on the other hand, most of the studies using an event history

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[1] Aguero and Marks (2008) on Peru, Guatemala, Colombia, Bolivia, Nicaragua and the Dominican Republic; Cruces and Galiani (2007) on Mexico and Argentina; Gendell, Maraviglia, and Kreitner (1970) on Guatemala City; Gurak and Kritz (1982) on the Dominican Republic; Jaffe and Azumi (1960) on Puerto Rico; Stycos (1965) on Lima, Peru; and Weller (1968) on Puerto Rico.

analysis identify a negative relationship between fertility and women's employment, although there have been some contrary findings. For instance, Hoem (1993) finds no association between employment history with progression to a third birth in Sweden, while Grimm and Bonneuil (2001) find that departure from the job market is less likely among mothers of larger families in France, and one child is not enough to prevent the mother from returning to work. Meron and Widmer (2002) differentiate between unemployment and inactivity when analyzing transition to the first birth in France, and find that unemployed women are more likely to postpone the first birth than women in the labor market. As regards to the influence of fertility on employment, Drobnic, Blossfeld, and Rohwer (1999) find that the number of children has no effect on the risk of leaving employment in the United States. Furthermore, Drobnic et al. (1999) find that in Germany, an increase in the number of children even increases participation in paid employment, and for married mothers in Germany, child parity decreases the risk of transition from full-time to unemployment (Drobnic, 2000). Contradictory to the expectation that pre-school children will prevent mothers from returning to work, Drobnic (2000) finds that pre-school children have no effect on the re-entry into part-time employment in Germany for neither married or single mothers, nor in the United States for lone mothers. Pre-school children even increase risk of entry to part-time employment for married mothers in the United States. Budig (2003), in her study in the United States finds that grown-up children raise the likelihood of full-time labor-force participation, especially among married women. Aassve, Burgess, Propper, and Dickson (2006) find that in Great Britain, second births have little association with employment entry, while second and third births are found to be associated with employment exit negatively.

In addition to the age of children, parity and unemployment versus non-employment differentiations, the sector of employment is found to affect the relationship in event-history studies. Public sector employment is found to be suitable for combining work and family lives in Israel (Stier & Yaish, 2008), and in South Korea, where wage-earning women employed in the public sector are found to have higher motherhood entry risks than those working in the private sector (Ma, 2013).

Considering these different findings, the meta-analysis by Matysiak and Vignoli (2008), which is restricted to longitudinal studies covering the period between 1990 and 2006 and analyzes the transition of women to birth (30 papers, 90 effects), and to employment (29 papers, 58 effects of young children aged 0-6), is important. Their univariate analysis reveals

"*the effect of young children on mothers' entry into employment is negative and significant, whereas the effect of women's employment on childbearing is zero*". The magnitude of size effect is found to be influenced after controlling for partner characteristics, social background of the respondent, macro characteristics, and women's job characteristics. Finally, birth order is an influential variable that is found to have a negative effect of women's work on childbearing being much lower in the first parity than in higher-order parities.

On the issue of women in Turkey, there are only few studies analyzing the relationship between fertility and employment, all of which are one-way focused studies. Farooq and Tuncer (1974) analyze the association between modernization and fertility transition in Turkey, linking economic and social development with fertility for the 1935–1965 period. They find a weak association between fertility and non-agricultural employment, but a strong link with changing attitudes and tastes. The first study to focus solely on the relationship between the roles of worker and mother in Turkey is the one by Stycos and Weller (1967), who use data from a survey carried out in 1963 in both rural and urban areas. After controlling for place of residence, employment status, education and exposure to contraception within marriage, they find *no* difference in employment status related to fertility, but by residence and education, which can be attributed to the compatibility of the roles of mother and worker in areas where women are mostly employed as unpaid workers in the agricultural sector. The second study is that of Şengül and Kıral (2006), which analyzes the effect of decisions related to fertility, based on the total number of children and the number of children aged below seven, on female labor force participation, using the sex of the first child as the instrumental variable. Basing their analysis on the Household Labor Force Survey from the first quarter of 2003, they find that having children, especially the presence of young children, decreases the probability of working among women in Turkey. Finally, Greulich, Dasre, and Inan (2016) analyze the determinants of fertility decline in Turkey, focusing on the birth of third child using data from the Survey of Income and Living Conditions (SILC) for the 2006–2011 period. Their findings indicate that stable[2] employment among women, especially in the formal sector, is negatively correlated with the birth of a third child, and that employment in the agricultural sector is also negatively associated with a third birth, albeit to a lesser degree.

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[2] Unchanging during the three-month observation period.

4. Data and methods

4.1 Data

This study makes use of data from the 2008 Turkey Demographic and Health Survey (TDHS-2008), which was the fourth in the DHS series in Turkey and the ninth national demographic study in the country since 1968. The fieldwork of TDHS-2008 took place between October and December 2008. In the past, the TDHS collected data on birth histories, along with summary data on the marriages, migration and employment histories of ever-married women. The TDHS-2008, however, was the first to include the full histories of the births, marriages, migration and employment of women, and this study makes use of this rich retrospective information. TDHS-2008 was based on 10,525 completed household interviews, with a response rate of 88.4 percent, and 7,405 completed individual interviews with ever-married women aged 15–49 years, with a response rate of 92.5 percent. The data required cleaning, and some cases had to be dropped due to missing information on dates that could not be imputed. In fertility analyses, women who conceived before marriage (316 observations)[3] and marriages that took place before the age of twelve (31 observations) were dropped. The final data set for the analyses of conceptions included 6,977 ever-married women. The event data used for employment and non-employment transitions was constructed excluding cases with missing information on year of events, cases of marriage before the age of 12, spells with start before age of 12, and spells when the place at the time of the start is abroad. The final data sets used for the analyses of transitions from/to employment and non-employment included 5,088 employment and 7,903 non-employment spells, respectively.

4.2 Methodology

In this study, event history analyses are used to investigate the determinants of pregnancy given non-pregnancy separately for different conception orders, entering employment given non-employment, and exiting employment given employment. To this end, we make use of a

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[3] Pre-marital conception cases accounted for 4.1 percent of all ever-married women. Women who gave birth before the age of 12 and childless women were excluded from the study. This figure can be considered high for Turkey, and so a multinomial model was run that excluded childless women, where the dependent variable was (0, 1, 2) for (no pre-marital conception, pre-marital conception and marital birth, and pre-marital birth). The results indicate that premarital conception is not an ideational phenomenon in Turkey, and it has been declining over time, being higher among women whose age at the time of childbirth was younger. In our bivariate models, we found that the likelihood of pre-marital conception was higher at younger ages, among the uneducated, among Kurdish women, in rural areas, in the Eastern and Northern regions, among females with low educated-parents and among couples who are relatives, separately. These results suggest that the pre-marital conceptions in our data may be due to recall errors, as TDHS take marriage as self-reported and these include co-habitation, religious marriages or any type of other union. In this regard, pre-marital conceptions appear to be directly related to data properties.

hazard approach with piecewise constant exponential modelling. Hazard models assume that the hazard rate (dependent variable) is dependent on duration since the onset of exposure, and on a set of independent variables. In piecewise constant proportional hazard models, the basic time factor is partitioned into several segments, and while hazard rates are assumed to be constant within each of these segments, they may differ from segment to segment.

Specifically, the model is defined by the following equation:

$$h(t|x_j) = h_0(t)exp(x_j\beta_x) \tag{1}$$

where

$$h_0(t) = \begin{array}{ll} h_1, & t \in (0, \tau_1] \\ h_2, & t \in (\tau_1, \tau_2] \\ \vdots & \\ h_j, & t \in (\tau_{j-1}, \tau_j] \end{array}$$

where $h_0(t)$ represents the baseline hazard function, x_j represents a vector of the explanatory and control variables used in the analysis, and β_x represents the corresponding vector in the regression parameters that indicate the effect of the variables.

Our models of pooled conceptions of order four and higher, and employment and non-employment entries and exits, contain multi-episode data, which means more than one event for each individual. As Allison (2010) notes, if repeated events are observed for an individual, the standard strategy is to reset the clock to zero each time an event occurs, and to treat the intervals between events as distinct observations. Our repeated-event models make two assumptions: (1) that the dependence of the hazard on time since the last event has the same form for each successive event, i.e. no stratification is applied, and (2) individuals are independent, while birth intervals for each individual are dependent.[4,5]

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[4] In general, one would expect that people with short birth intervals will continue to give birth frequently. As long as the explanatory variables in the model account for the dependence, the assumption of independence will not be violated. In most cases, however, the independence assumption is false, at least to some degree. This leads to (i) still asymptotically unbiased coefficient estimates, but (ii) standard error estimates biased downward (Allison, 1984). In this regard, repeated events only affect the variance of the estimates, and not the means. There is a need to correct for standard errors in our multivariate analyses. As suggested in Cleves, Gould, Gutierrez, and Marchenko (2008), one solution would be to fit a standard piecewise constant exponential model, adjusting the standard errors of the estimated parameters to account for the possible correlation. This is done by specifying option vce (cluster CASEID) to streg setting the id variable as the pregnancy. This provides a robust estimate of variance, as described in the context of the Cox regression of Lin and Wei (1989), with added adjustment for clustering.

4.3 Variables

4.3.1 Dependent variable and the baseline hazard

There are three main groups of models for analyzing the events of conception, employment exit and employment entry. The observation window opens with the first marriage of the woman for the first conception model and employment models, and previous births for the models of second and higher-order conceptions. The observation window closes at interview date or migration abroad if emigration exists in life history of the woman.

In our conception models, the dependent variables are transitions to first, second, third, fourth and higher-order conceptions. Date of pregnancy is measured as seven months before the date of the live birth,[6] while the baseline is the period since the first marriage, the period since the first birth, the period since the second birth and the period since the preceding birth, depending on the order of conception. Periods are measured in months, and the cut-off points are 12, 24, 36, 48, 60, 84 and 120 months, referring to one year, two years, three years, four years, five years, seven years and 10 years, meaning eight segments.

In the employment exit and entry models, the dependent variables are transition to non-employment and employment, respectively. The baseline is the period since entry into work in the employment exit model and the period since entry into non-employment (exit from previous job or first marriage if never worked before) in the employment entry model. The periods are segmented with the same cut-off points as in the fertility models.

4.3.2 Explanatory variables

The explanatory variables are employment status as a time-varying variable, and employment status before marriage as a time-fixed variable, which are constructed as dummy variables within the categories of "non-employed" and "employed". Table 1 presents descriptive statistics of the explanatory variables as occurrence of conceptions and exposure times to the

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[5] To minimize the effects of violations of the independence assumption, additional explanatory variables that represent the characteristics of the individual's prior event history can be used. The most basic of these variables are the number of prior events and the length of previous interval. Accordingly, we use the order of conception as an explanatory variable in our multi-episode conception model; and order of job/non-employment episode, and years of employment/non-employment after marriage in the models of employment exit and employment entry.

[6] Our selection of seven months is based on the fact that in the TDHS, birth history intervals can be a minimum of seven months, and data is checked during the process of entry in that way.

risks for each conception model, expanded based on the sector of employment (agriculture and non-agriculture), public versus private employment, wage status of employment, or social security coverage of employment. In TDHS, the employed category includes both paid and unpaid workers, and in the employment history module, jobs lasting for at least six months since the age of 12 are included, with the current job at the time of the interview also included, regardless of duration. The category of non-employed was taken as synonymous with inactive rather than unemployed, in that that data contains no information on whether inactive women were seeking work or not.

Employment prior to marriage is a dummy variable that indicates whether or not the woman worked before marriage. Those who were employed before marriage may be more career than family oriented, although in Turkey, employment is interrupted by marriage, which is a highly influential in giving up work among women. According to TDHS-2008 data, marriage was the most stated reason for leaving employment by ever-married women, accounting for 26.6 percent of all jobs ended (3,595 jobs), and so this time-fixed variable may not be effective in conception intensities after marriage within the context of Turkey.

The incompatibility between fertility and employment is highly dependent on the organization of work (Mason & Palan, 1981; Stycos & Weller, 1967). A higher risk of conception for women employed in the agriculture sector can be expected compared to women employed in the industrial or service sectors, since women working in agriculture can work closer to their children and to a more flexible schedule than women employed in a factory or store where the work hours are rigid. Social insurance, stability, regularity and a guaranteed job after childbearing can lead us to expect higher conception risks in the public sector, as well as more rigid working hours. The wage earner category of the variable of wage status includes workers with the status as employer, waged worker (regular), salaried government officer (regular) and daily waged (seasonal); while the non-wage earner category includes workers with the status as for her own (regular), for her own (irregular) and unpaid family worker. Due to the flexible working hours and conditions, a higher risk of birth can be expected among non-wage workers. Finally, the variable of social security controls for coverage due to employment, with uncovered employees being those working without social security cover.[7]

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[7] The social security coverage of covered workers refers to any of the following: SSK (Social Security Authority), Emekli Sandığı (Retirement Fund), Bağ-Kur (Social Security Organization for Artisans and the Self-employed), SGK (Social Security Institution), private insurance or other insurance. Prior to May 2006, there

Although a better economic status may have pro-fertility effects, jobs without social security coverage can be expected to be more compatible with fertility, and so may increase risks of birth.

Table 2 presents descriptive statistics of the explanatory variables in the employment exit and entry models, in which three time-varying fertility variables, namely number of living children, age of youngest child, or a composite variable of the two, are used in the three separate models for each event. These variables are constructed in a similar way to the covariates in Andersson's (1997) model analyzing the impact of children on divorce risk among Swedish women. Parity is the number of living children, and is divided into five levels from parity "0" to parity "4 or above". Although in empirical studies there is no consensus on the sign of the effect of parity on employment entry and exit, a negative relationship can be expected in Turkey due to the social norms associated with mothers in society, where mothers are seen as having primary responsibility for childcare. That said, higher parity might bring higher economic needs in the family, causing women to enter the labor force as a second breadwinner, and resulting in higher risks of employment entry and lower risks of employment exit. The age of the youngest child is another important dimension of fertility affecting employment exit and entry, as shown in the previous section. Women may temporarily abstain from work in their lives during periods of pregnancy and for a couple of years after the birth of a child, and they may return to work once the youngest child comes of school age. The composite parity-age of child variable[8] is a composite variable that is based on the interactions of parity and the age of youngest child variable,[9] and in which childless women fall under a separate category that cannot interact with age of the youngest child by definition. These three fertility variables cannot be used in the same model, given that they have coinciding categories.

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were three separate social security institutions: SSK, for private and public sector workers; Emekli Sandiği (ES), for civil servants; and Bağ-Kur, for self-employed workers and farmers. In 2006 these were all merged under one institution – the Sosyal Güvenlik Kurumu (Social Security Institution, SGK).

[8] Descriptives of this variable is not presented in this paper, but available upon request. Relative risks of employment exit and entry by this variable *ceteris paribus* are plotted in figures.

[9] It has categories of "no child", "no child pregnant", "one child pregnant", "one child 0 years old", "one child 1-2 years old", "one child 3-5 years old", "one child 6-8 years old", "one child 9+ years old", "two children pregnant", "two children 0 years old", "two children 1-2 years old", "two children 3-5 years old", "two children 6-8 years old", "two children 9+ years old", "three children pregnant", "three children 0 years old", "three children 1-2 years old", "three children 3-5 years old", "three children 6-8 years old", "three children 9+ years old", "four or above children pregnant", "four or above children 0 years old", "four or above children 1-2 years old", "four or above children 3-5 years old", "four or above children 6-8 years old", and "four or above children 9+ years old".

Table 1 Women or non-pregnancies exposed to birth risks[*], descriptive statistics of explanatory variables

	First conception model				Second conception model				Third conception model				Fourth and higher order conceptions model			
	Exposure		Events		Exposure		Events		Exposure		Events		Exposure		Events	
	Woman-months	%	First conceptions	%	Woman-months	%	Second conceptions	%	Woman-months	%	Third conceptions	%	Non-pregnancy months	%	Fourth and higher order conceptions	%
Employment status																
Agriculture	20993	16	1005	16	35,435	14	952	19	62,730	17	611	22	92,632	23	870	26
Non-agriculture	20472	16	703	11	46,068	18	467	9	53,928	15	161	6	34,861	9	103	3
Non-employed	87461	68	4598	73	178,214	69	3,692	72	247,397	68	1,997	72	273,269	68	2,332	71
Public	6283	5	233	4	14,815	6	158	3	15,668	4	27	1	3,447	1	12	0
Private	35181	27	1475	23	66,687	26	1,260	25	100,991	28	745	27	124,046	31	960	29
Non-employed	87461	68	4598	73	178,214	69	3,692	72	247,397	68	1,997	72	273,269	68	2,332	71
Wage earner	21619	17	759	12	42,609	16	510	10	48,163	13	199	7	37,378	9	284	9
Non-wage earner	19818	15	948	15	38,852	15	908	18	68,339	19	572	21	89,935	22	687	21
Other	28	0	1	0	41	0	1	0	157	0	1	0	179	0	2	0
Non-employed	87461	68	4598	73	178,214	69	3,692	72	247,397	68	1,997	72	273,269	68	2,332	71
Uncovered	25382	20	1189	19	47,858	18	1,125	22	86,994	24	706	25	114,595	29	948	29
Covered	16047	12	517	8	33,610	13	291	6	29,651	8	64	2	12,810	3	23	1
Missing	36	0	2	0	34	0	2	0	14	0	2	0	88	0	2	0
Non-employed	87461	68	4598	73	178,214	69	3,692	72	247,397	68	1,997	72	273,269	68	2,332	71
Employment before marriage																
Non-employed	72595	56	3684	58	144306	56	3195	63	224953	62	1856	67	269812	67	2342	71
Employed	56331	44	2621	42	115410	44	1916	37	139102	38	912	33	130950	33	963	29
Total	128926	100	6306	100	259717	100	5110	100	364056	100	2768	100	400762	100	3305	100

(*) Conceptions leading to a live birth.

Note: "Woman-months" is the total number of months that women are exposed to the risk of becoming a mother. "Events" indicates the number of conceptions resulting in live birth.

Interpretation: Non-employed women were childless and not pregnant for 87,461 months. 4,598 non-employed women conceived their first live child. Their annual conception rate for a first live child was thus 63 %. Source: TDHS-2008

Table 2 Employment or non-employment spells exposed to exit risks[*], descriptive statistics of explanatory variables

	Employment exit model				Employment entry model			
	Exposure		Events		Exposure		Events	
	Employment-months	%	Exiting employment	%	Non-employment months	%	Becoming employed	%
Parity								
0	46429	13	441	26	120048	14	470	22
1	82004	23	436	26	198782	23	585	28
2	107656	31	424	25	257883	30	579	28
3	56665	16	210	12	145201	17	283	14
4+	57847	16	170	10	146054	17	178	8
Age of youngest child								
No child	36195	10	288	17	87263	10	401	19
Pregnant	28151	8	249	15	88304	10	101	5
0 years old	40863	12	132	8	130457	15	190	9
1-2 years old	35931	10	87	5	109145	13	205	10
3-5 years old	73709	21	260	15	195813	23	421	20
6-8 years old	47585	14	211	13	102496	12	309	15
9+ years old	88167	25	453	27	154491	18	467	22
Total	350600	100	1680	100	867970	100	2095	100

*Exit risk is to exit employment in employment model and exit non-employment in non-employment model.

4.3.3 Control Variables

For conception models, we make use of five time-varying and three time-fixed control variables. In the multi-episode model with fourth and higher-order conceptions, the order of conception is added as a time-fixed covariate, leading to four time-fixed control variables in total. Sample compositions of each of these control variables, including the baseline of the conception models, are provided in Table A-1a. The first group of control variables are the period and age variables, namely the calendar year and age at start of the episode, which is either age at first marriage or age at previous birth, depending on the order of conception. Calendar year is a time-varying explanatory variable that shows the influence of changes in the socio-economic and political environment on birth intensities, as well as the trend in birth risks over time. It is constructed, generally, in seven-year intervals. The categories of age at the start of the episode may change, depending on the conception model. As a control for socio-economic characteristics, we control for education in our models. This variable is formed based on the assumption that education starts at the age of six and continues with no interruptions until the level reported in the interview is attained. In this way, the education variable includes the category of "in education". The categories of this variable refer to completed levels of education (graduation). We also control for residential variables to standardize traditional/modern settings and other contextual factors. These variables are 1) urban/rural type of residence[10] and, 2) region – relating to the five regions in Turkey of "West", "South", "Central", "North" and "East", constructed using data related to the migration histories of women. Finally, we control for the background variables of mother tongue, parental education and marital status. Mother tongue is a proxy for ethnicity and includes the categories "Turkish", "Kurdish" and "Other", while parental education is defined from a combination of the educational levels of the mother and father, in which educated means having completed the primary level of education at minimum, while uneducated implies no education or incomplete primary education. The marital status variable is based on event history data in marriages. The separated category corresponds to not living together (through plan of separation or divorce), divorced or widowed. Finally, we control for the order of conception in the multi-episode model, analyzing fourth and higher-order conceptions as the order of the next conception or event.

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[10] The category of "abroad" is excluded, as cases were censored when they moved abroad. Additionally those who were abroad when the episode started are also excluded.

Descriptive statistics of the control variables and the baseline of multi-episode employment exit and entry models are presented in Table A-2. The employment exit model includes six time-varying and six time-fixed control variables. In the employment entry model, there are six time-varying and four time-fixed control variables. Age at start of the episode is the age at start of employment or non-employment, depending on the model. The other control variables are the same as in the conception models, except for the variable of order of conception. Instead of this variable, work-related control variables are used in employment exit and entry models, being work experience and order of job in the employment exit model, and years of non-employment after marriage and order of non-employment episode in the employment entry model. Work experience/ years of non-employment is a time-varying covariate that reflects cumulative human capital. The experience variables start from the first marriage, as does our observation period. The employment exit model has two additional work-related variables, being sector of employment and social security coverage, which are time-fixed variables that are used as proxies for organization and nature of work.

5. Results and discussions

5.1 Descriptive statistics

According to a simple descriptive of the status of women aged 40-49 at the time of the interview in terms of employment status and mean number of children ever born (CEB), the fertility indicators differentiate between the employment statuses of women, as shown in Table 3,[11]. Mean CEB to never employed women (3.85) is higher than that of employed women (3.09) aged 40-49 in 2008, and there are also differences related to job characteristics. Women working in the agricultural sector (3.64) have higher mean CEB than those employed in other sectors. Mean CEB of non-wage earners (3.26) is higher than that of wage-earners (2.85), as most of the former are unpaid family workers operating in the agricultural sector.

Considering that roles of motherhood and worker are more compatible in the agricultural sector, this result should also come as no surprise. Finally, slight differences are recorded between the completed fertility of women working in uncovered and covered jobs. Completed fertility of

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[11] TFR not shown here available upon request, but reveals similar results with CEB except for the public vs private sector variable.

women working without social security (3.37) is higher than that of women working with social security (2.10). These findings indicate the existence of fertility differentials according to the employment status of women in general, and job characteristics that favor compatibility between the roles of worker and mother encourage fertility.

Table 3: Mean number of children ever born by employment status*, TDHS-2008		
		Mean CEB (women 40-49)
Employment	Never employed	3.85
	Non-employed	3.03
	Employed	3.09
	Agriculture	3.64
Sector	Industry	3.20
	Service	2.44
Public versus private	Public	1.97
	Private	3.20
Status	Wage-earner	2.85
	Non-wage earner	3.26
Social security	Uncovered	3.37
	Covered	2.10
	Turkey	3.34

* Non-employed: non-employed in last three years, employed: ever-employed in last three years

5.2 Results of the multivariate analyses

In this section, we present the results of dynamic analyses of the transitions during all life course spells under observation in five parts: (1) the relationship running from employment to fertility, (2) associations of other covariates with fertility, (3) the relationship running from fertility to employment exit and entry, (4) associations of other covariates with employment exit and entry, and (5) interactions between employment statuses and conceptions.

5.2.1 The relationship running from employment to fertility

Table 4 presents the findings of the estimated piecewise constant proportional hazard models of births of different orders by employment variables when standardized for all covariates. The employment of women is associated with family size negatively, with non-employed women having 1.13 times more risk of having a first birth than employed women. For second births, third births, and fourth and higher-order births, the hazard ratios are 1.12, 1.10 and 1.14 for non-employed versus employed women, respectively. Employment status before marriage, on the other hand, appears to have no effect on the risk of giving birth in any order. This is an expected result, since exiting employment due to marriage and the likely establishment of family roles prior to career after marriage is common. Employment after marriage, on the other hand, becomes an influential determinant of conception risk, and likely provides a better understanding of the differentiations in career and family orientations among women.

Table 4 Relative risks of conceptions by employment variables, Turkey 1972-2008[a]

	First conc.	Second conc.	Third conc.	4th & higher conc.
Employment status				
Non-employed	1.13***	1.12**	1.10*	1.14***
Employed	1	1	1	1
Employment before marriage				
Non-employed	1.00	1.02	0.99	0.96
Employed	1	1	1	1

[a] Model where other covariates presented in Table 6 are controlled for.
* 10 %; ** 5 %; *** 1 %

Table 5 presents the results of the models in which the employment status variable is replaced by one of the variables related to job characteristics. Sector of employment has a crucial role in transition to motherhood or higher-order births, with employment in the agricultural sector increasing the risk of conception when compared to employment in the non-agricultural sector. The risk ratios indicate that the non-employment effect is very similar to the agricultural sector effect, and this finding is also in line with the role incompatibility hypothesis, which suggests that no relationship exists between women's employment and fertility in spheres in which the roles of worker and mother are compatible. The public-private sphere of employment is influential after first birth, with women employed in the public sector subject to higher risks of second birth (20 percent higher than those working in the private sector), and lower risks of higher-order births.

Working as a non-wage earner increases the risk of transition to first, second and third births, but decreases that of higher-order births. For higher-order births, income constraints may come into play, in that non-wage earner women are employed mostly in unpaid or low-paying jobs. Working in an uncovered job is associated with a higher risk of birth when compared to their covered counterparts. In short, being employed is found to affect the transition to conception negatively, although the characteristics of jobs that favor compatibility between the working and mothering roles among women increase the risk of conceptions among women, except in the case of the second conception of women employed in the public sector. This would appear to be a result of the security provided by employment insurance and the stable and regular employment guaranteed in the public sector, where women can have as many children as they desire, which is two in general due to the persistent two-child norm in Turkey.

Table 5 Relative risks of conceptions by type of employment, Turkey 1972-2008[a]

	First conception	Second conception	Third conception	Fourth and higher order conceptions
Sector				
Agriculture	1.34***	1.13	1.31**	1.37***
Non-agriculture	1	1	1	1
Non-employed	1.32***	1.20***	1.32***	1.47***
Log likelihood	-10598.1	-7999.29	-5790.61	-7205.22
LR chi2	1148.13	1335.05	2048.72	3088.31
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Public versus private				
Public	0.98	1.20*	0.57**	0.77
Private	1	1	1	1
Non-employed	1.13***	1.14***	1.07	1.13**
Log likelihood	-10610.7	-7999.38	-5790.86	-7209.18
LR chi2	1135.71	1341.23	2042.37	3113.53
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Status				
Wage earner	1	1	1	1
Non-wage earner	1.25***	1.06	1.29***	0.87*
Other	1.00	1.67	1.69	1.43*
Non-employed	1.27***	1.16**	1.31***	1.04
Log likelihood	-10602.12	-8000.56	-5790.05	-7207.87
LR chi2	1142.88	1334.79	2079.34	3178.82
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Social security				
Uncovered	1.40***	1.13	1.40*	1.68*
Covered	1	1	1	1
Non-employed	1.42***	1.23***	1.49**	1.88**
Log likelihood	-10595.82	-7999.21	-5788.24	-7205.63
LR chi2	.	..	14669.75	3128.31
Prob > chi2	.	..	0.0000	0.0000
Number of cases (weighted)	6937	6561	5105	6056
Number of conceptions	6292	5073	2760	3296
Time at risk (months)	128536	257959	362961	399510

* 10 %; ** 5 %; *** 1 %
[a] Each separate models where other covariates and explanatory variables are controlled for.

5.2.2 Associations of other covariates with fertility

Table 6 details the effects on fertility of age and period, socio-economic, background and other control variables in Turkey. The results indicate that the risk of first conception is highest in the first year of first marriage, and after the first year within marriage, the risk declines constantly.

The second conception risk peaks in 4-5 years after the first birth. In earlier calendar periods the risk of conceiving a child was higher, and is more pronounced in the transition to the parities of two and over. The macro environment and population policies in Turkey, such as the Population Planning Law of 1965 and Family Planning Law of 1983, may have played a role in the decline in risks of having second or higher births. The risk of first birth with respect to age within the first marriage shows an inverse U-shape, peaking among women who married at the age of 17-21, and after the age of 21, the risk enters a steady decline. The results differ for third and higher-order conceptions, with the risk being higher among the younger age groups compared to the 20-24 age group. This may be because when a woman gives birth at a young age, the transition to the next occurs also at a young age. As a socio-economic factor, education affects transition to motherhood and having higher-order parities. The lower the education, the higher the risk of entering motherhood or having more births. The spatial control factors of urban/rural type of place of residence and region have no effect on transition to motherhood, but come into play after the first birth. In rural areas, women have 20 percent higher second and third birth intensities, and 50 percent higher high-order birth intensities than their counterparts in urban areas. Women living in regions other than the West have higher second and higher-order birth risks when compared to women in the Western region of Turkey. The mother tongue is effective after the first conception, as well as the spatial variables. Kurdish women and women of other ethnicities have higher second and higher-order births risks than Turkish women. This finding is consistent with finding of Yavuz (2006), who finds that the third-birth risk among Kurdish women is 1.5 times more than Turkish women, based on TDHS-2003 data. Parental education is a factor affecting all transitions to parities, with higher risks for uneducated parents than educated parents. Lower birth risks are prevalent among separated women, while women in later marriages have a higher birth risk than women in their first marriages. Finally, higher-order births are more likely among sixth or higher-order births than fourth births, implying that once a high order of birth is reached, transition to much higher orders is more likely.

Table 6: Relative risks of conceptions by control variables standardized for employment status and employment before marriage, Turkey 1972-2008

	First conc.	Second conc.	Third conc.	4th & higher conc.
Duration since start of episode (Baseline)				
year 1	1	1	1	1
year 2	0.77***	1.67***	1.68***	1.44***
year 3	0.54***	1.72***	1.51***	1.09
year 4	0.46***	1.85***	1.42***	0.95
year 5	0.36***	2.09***	1.50***	0.72***
years 6-7	0.22***	1.64***	1.17*	0.67***
years 8-10	0.13***	1.31***	0.84	0.32***
10+ years	0.07***	0.30***	0.23***	0.08***
AGE AND PERIOD VARIABLES				
Calendar years				
1972-1980[a], 1973-1981[b], 1975-1981[c], 1977-1981[d]	1.17**	2.16***	2.45***	1.75*
1981-1987[a], 1982-1988[b,c,d,]	1.14***	1.71***	1.95***	1.88***
1988-1994[a], 1989-1995[b,c,d]	1.16***	1.53***	1.32***	1.49***
1995-2001[a], 1996-2002[b,c,d]	1.17***	1.38***	1.26***	1.47***
2002-2008[a], 2003-2008[b,c,d]	1	1	1	1
Age at start of episode				
12-16[a, b], 13-19[c], 14-19[d]	0.81***	1.02	1.20***	1.21**
17-21[a, b], 20-24[c, d]	1	1	1	1
22-26[a, b,] 25-29[c, d]	0.95	0.93**	0.70***	0.74***
27-31[a, b], 30-34[c, d]	0.74***	0.69***	0.38***	0.43***
32-46[a], 32-44[b], 35-41[c], 35-46[d]	0.55***	0.45***	0.38***	0.25***
SOCIO-ECONOMIC VARIABLES				
Education				
No education or primary incomplete	0.91	2.19***	2.72***	2.20***
Primary level	1.15***	1.71***	1.68***	1.64***
Secondary level	1.10	1.27***	1.14	1.29
High school or higher level	1	1	1	1
In education	0.76	1.10	0.00***	
RESIDENTIAL VARIABLES				
Type of place of residence				
Urban	1	1	1	1
Rural	0.94*	1.16***	1.20***	1.48***
Region				
West	1	1	1	1
South	1.04	1.33***	1.49***	1.15
Central	1.15***	1.34***	1.57***	1.11
North	1.02	1.36***	1.49***	1.15
East	1.10*	1.56***	1.89***	1.63***
BACKGROUND VARIABLES				
Mother tongue				
Turkish	1	1	1	1
Kurdish	0.99	1.22***	1.59***	1.59***
Other	1.09	1.28***	1.44***	1.55***
Parental education				
Mother and father uneducated[e]	1.09*	1.32***	1.34***	1.44***
One educated other uneducated	1.15***	1.18***	1.28***	1.26**
Mother and father educated	1	1	1	1
Marital status				
Separated	0.04***	0.06***	0.08***	0.07***

First marriage	1	1	1	1
Later marriages	1.58*	1.42***	1.12	1.53***
OTHER VARIABLES				
Order of conception				
Fourth				1
Fifth				1.00
Sixth or higher order				1.17***
Constant	0.05	0.00	0.00	0.00
Number of cases (weighted)	6937	6561	5105	6056
Number of conceptions	6292	5073	2760	3296
Time at risk (months)	128536	257959	362961	399510
Log likelihood	-10611	-8001.17	-5795	-7210
LR chi2	1135	1337.1	2047	3112
Prob > chi2	0.0000	0.0000	0.000	0.0000

* 10 %; ** 5 %; *** 1 %
[a] First conception model, [b] Second conception model, [c] Third conception model, [d] Fourth and higher order conceptions model, [e] Uneducated: None or primary incomplete; educated: Primary complete or above

5.2.3 The relationship running from fertility to employment exit and entry

The results of the separate models of transition from employment to non-employment and non-employment to employment based on three fertility variables are presented in Table 7. Having two children decreases this risk when compared to having one child, while having no children (including women pregnant with their first child) increases the risk of exiting employment. The child-age model implies that pregnant women and women with no children are at greater risk of job exit than women with an infant child. If the youngest child is older than one year, the risk of exiting employment is lower than that of a woman with an infant. The age of the child has no effect on the risk of exiting employment once the youngest child completes the age of six .

The results of the multivariate model with the composite fertility variable are presented in Figure 1. First pregnancy is the most influential factor in job exit, i.e. conception of the first child. Women who are pregnant with their second or third child also demonstrate a higher risk of employment exit. The risk of employment exit, which peaks in pregnancy, declines until the youngest child reaches the age of two for women with one or two children. After that age, the risk of exit from employment tends to remain stable. These findings indicate that employed women tend not to exit jobs due to a higher parity, but rather due to pregnancy or the presence of an infant child. The increase in job exit intensity appears to be a temporary phenomenon that is limited to the pregnancy period and the infant-child period among women. Zero parity is also associated with a higher risk of job exit, although not as much as pregnancy.

The results of the models of employment entry are presented in the last two columns of Table 6, in which it can be seen that child parity is effective, in contrast to the employment exit model. Child parity decreases job entry intensity among non-employed women, while pregnancy is strongly associated with fewer employment entries, as would be expected. On the other hand, having no child and/or having a child older than one year are associated with higher risks of entry into employment. Zero parity, which includes childless women as well as women pregnant with their first child, has no association with employment entry among women. This can be expected, as pregnancy decreases and being childless increases the risk of entry into employment, their net effect being "0". As the age of the youngest child increases, the risk of job entry increases. Figure 2 presents the relative risks of job entry with respect to the composite fertility variable, where it can be seen that being childless and non-pregnant is associated with a higher risk of employment entry. Above all, pregnancy is associated with a lower risk of employment entry, and as the youngest child grows older, the risk of entry increases for all parity groups. When the youngest child completes the age of nine, the risk of employment entry declines, albeit slightly. These findings indicate that non-employed women avoid working or returning to the labor market due to pregnancy, young children or higher parities, although this would appear to be a temporary phase in the life course, since the risk of entering employment increases as the youngest child grows older.

**Table 7** Relative risks of job exits and job entries, Turkey 1971-2008

Transition from	Employment to non-employment			Non-employment to employment		
	Parity model	Child-age model	Parity + child-age model	Parity model	Child-age model	Parity + child-age model
EXPLANATORY FERTILITY VARIABLES						
Parity			Combination factor of parity and age of youngest child: see Figure 1. Baseline category: parity 4+, child aged 0 years.			Combination factor of parity and age of youngest child: see Figure 2. Baseline category: parity 4+, child aged 0 years.
0	1.73***			1.00		
1	1	1		1	1	
2	0.84*			0.82**		
3	0.94			0.78**		
4+	0.98			0.60***		
Age of youngest child						
no child		1.40**			1.73***	
pregnant		2.55***			0.68***	
0 years		1			1	
1-2 years		0.68**			1.50***	
3-5 years		0.87			1.81***	
6-8 years		0.98			2.40***	
9+ years		1.06			1.89***	
CONTROL VARIABLES						
Duration since start of episode (Baseline)						
year 1	1	1	1	1	1	1
year 2	0.97	0.94	0.95	0.56***	0.61***	0.60***
year 3	0.83	0.80*	0.81*	0.42***	0.42***	0.41***
year 4	0.62***	0.60***	0.61***	0.42***	0.39***	0.39***
year 5	0.53***	0.50***	0.51***	0.32***	0.28***	0.29***
years 6-7	0.45***	0.43***	0.45***	0.34***	0.27***	0.30***
years 8-10	0.37***	0.34***	0.36***	0.36***	0.25***	0.28***
10+ years	0.32***	0.29***	0.31***	0.45***	0.26***	0.32***
AGE AND PERIOD VARIABLES						
Calendar year						
1971-1988[a,] 1959-1988[b]	0.50***	0.48***	0.48***	0.69***	0.73***	0.73***
1989-1995	0.49***	0.48***	0.48***	0.61***	0.62***	0.62***
1996-2002	0.73***	0.73***	0.73***	0.82***	0.83***	0.82***
2003-2008	1	1	1	1	1	1
Age at start of episode						
12-16	1.42***	1.44***	1.38**	1.11	1.13	1.14
17-21	1.14	1.14	1.10	1.02	1.05	1.04
22-26	1	1	1	1	1	1
27-49	0.99	0.92	0.95	0.70***	0.60***	0.63***
SOCIO-ECONOMIC VARIABLES						
Education						
No education or primary incomplete	1.15	1.10	1.11	0.56***	0.52***	0.57***
Primary level	1.28**	1.22*	1.25**	0.64***	0.63***	0.65***
Secondary level	1.74***	1.66***	1.69***	0.63***	0.62***	0.63***
High school or higher level	1	1	1	1	1	1
In education	1.64	1.86	1.92	1.55	1.44	1.50
RESIDENTIAL VARIABLES						
Type of place of residence						
Urban	1	1	1	1	1	1
Rural	0.51***	0.51***	0.51***	1.27***	1.27***	1.27***
Region						
West	1	1	1	1	1	1

South	0.90	0.88	0.89	0.70***	0.70***	0.72***
Central	0.73***	0.72***	0.72***	0.58***	0.58***	0.59***
North	0.58***	0.57***	0.57***	1.00	1.00	1.01
East	0.78**	0.76**	0.76**	0.41***	0.41***	0.42***
BACKGROUND VARIABLES						
Mother tongue						
Turkish	1	1	1	1	1	1
Kurdish	1.03	1.03	1.05	0.73**	0.74**	0.75**
Other	1.06	1.07	1.06	1.05	1.06	1.08
Parental education						
Mother and father uneducated[c]	1.04	1.02	1.02	0.83**	0.82**	0.84**
Mother or father educated	1.17*	1.14	1.15	0.87*	0.87*	0.88
Mother and father educated	1	1	1	1	1	1
Marital status						
Separated	1.11	1.16	1.17	2.05***	1.96***	1.94***
First marriage	1	1	1	1	1	1
Later marriages	0.87	0.87	0.89	0.93	0.99	0.99
OTHER VARIABLES						
Order of job[a] or order of non-employment episode[b]						
First	1	1	1	1	1	1
Second	0.97	0.96	0.96	1.56***	1.51***	1.54***
Third	1.18	1.20	1.18	1.87***	1.80***	1.83***
Fourth and higher order	1.13	1.16	1.16	2.89***	2.64***	2.77***
Work experience[a] or years of non-employment[b] after marriage						
0 years	1	1	1	1	1	1
1 year	1.09	1.09	1.11	0.75	0.69	0.69
2-4 years	1.00	0.99	1.02	1.15	1.00	1.04
5+ years	0.86	0.83	0.84	2.35***	1.84***	1.98***
Sector of job						
Agriculture	0.41***	0.41***	0.41***			
Non-agriculture	1	1	1			
Social security coverage of job						
Covered	1	1	1			
Uncovered	1.05	1.02	1.03			
Constant	0.01	0.02	0.01	0.01	0.01	0.01
Number of jobs/non-employment spells (weighted)	3920	3920	3920	7213	7213	7213
Number of job exits/entries	1666	1666	1666	2081	2081	2081
Time at risk (months)	349288	349288	349288	865878	865878	865878
Log likelihood	-3677	-3632	-3612	-6219	-6150	-6126
LR chi2	919	933	1016	1110	1183	1202
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* 10 %; ** 5 %; *** 1 %

[a] Employment to non-employment model, [b] non-employment to employment model, [c] uneducated: None or primary incomplete; educated: Primary complete or above

Fig. 1 Relative risks of non-employment, ever-married employed women, Turkey, 1971-2008, by parity and age of youngest child (composite fertility variable)
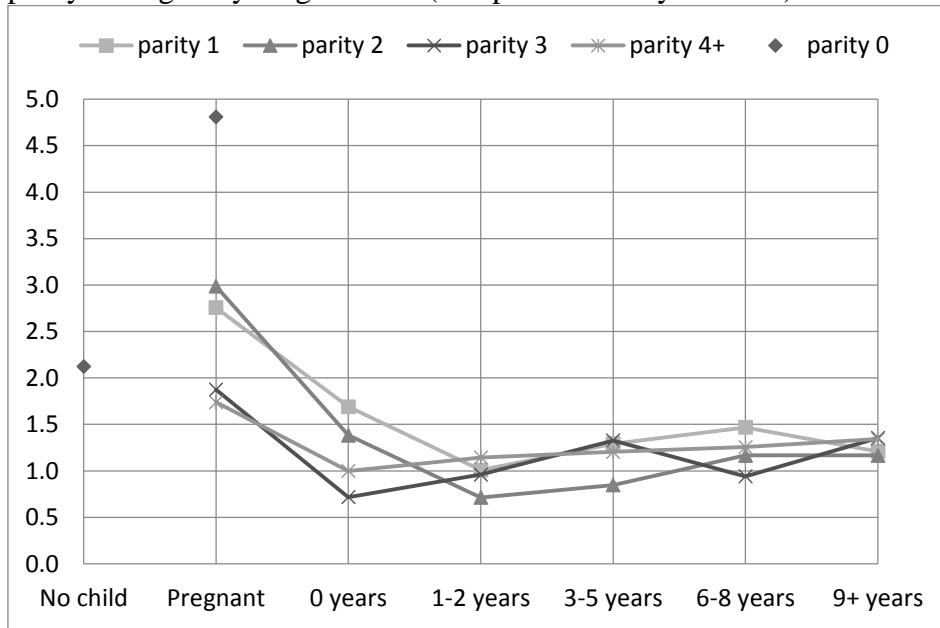
Note: Calendar year, age at start of job, education, type of place of residence, region, mother tongue, parental education, marital status, order of job, work experience after marriage, sector of job and social security coverage of job are controlled for.

Fig. 2 Relative risks of employment, ever-married non-employed women, Turkey, 1959-2008, by parity and age of youngest child (composite fertility variable)
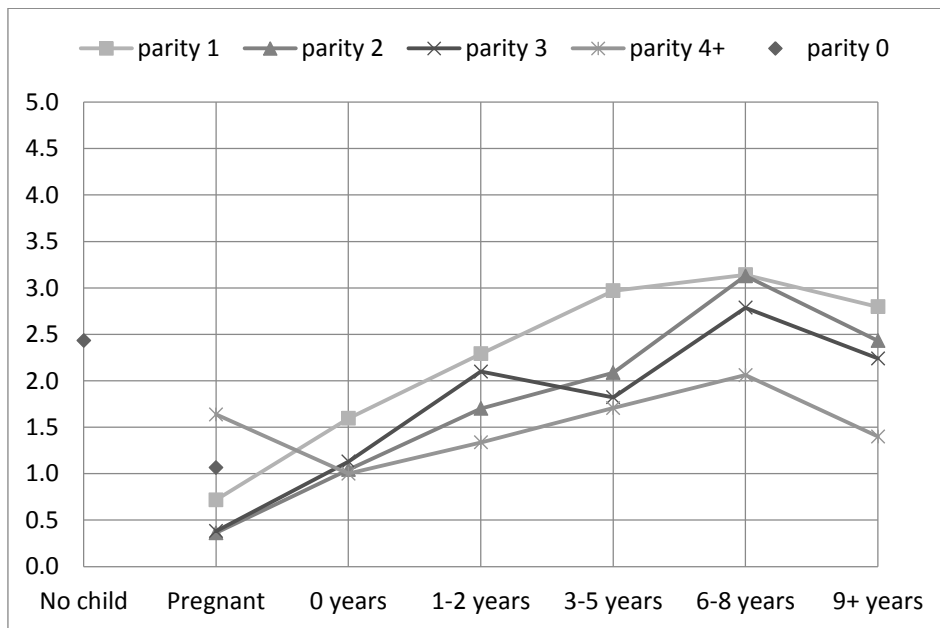
Note: Calendar year, age at start of non-employment, education, type of place of residence, region, mother tongue, parental education, marital status, order of non-employment episode and years of non-employment after marriage are controlled for.

5.2.4 Associations of other covariates with employment exit and entry

The findings of the employment exit models in Table 7 indicate that after the first two years of employment, the risk of job exit declines as the duration of employment increases. An analysis of the age and period variables reveals that in the most recent calendar period there were more job exits than in the past. As expected, jobs started by the younger age groups who work during education and/or before marriage are more likely to end than those started in the 22-26 age group. Lower education levels are associated with a higher risk of job exit, and dismissals or inferior working conditions among the less educated group of women may result in relatively more job exits. The "in education" category is also associated with higher job exits when compared to those in high school or in higher education, as would be expected. Relative risks associated with residential control variables indicate that women living in rural areas record a lower risk of job exit than those living in urban areas, and women living in regions other than the West also have a lower risk of job exit than those living in the West. The background variables of mother tongue and marital status are not associated with job exit. Having one rather than two educated parents is associated with an increased risk of exiting employment, according to the parity and composite models. Among the employment variables, the job sector appears to be the one most correlated with employment exit risk. In the agricultural sector, the risk of exiting employment is lower than in the industrial and services sectors, as would be expected. Social security coverage seems to play no role in the risk of exiting employment. Third and higher-order jobs are associated with higher risks of job exit, and finally, five years or more of work experience after the first marriage is related to a lower risk of exiting employment.

The results of the employment entry model by control variables indicate that as duration increases, the risk of entering employment declines and becomes stable after five years of continuous non-employment. When looking at the age and period variables, it is observed that in the most recent calendar period there were more job exits and job entries, which implies a current increased turnover in than in the past in Turkey. The age at start of non-employment of 27-49 years, implies less risk of job entry, since at later ages a non-employment episode may begin as a result of retirement. As an influential variable, a lower educational level means less risk of job entry, as implied by human capital theory, which states that investment in education leads to higher productivity and higher earnings. Residential variables are also correlated with

employment entry among women, in that living in rural rather than urban areas increases the intensity of job entry and the risk of entering employment is higher among women living in regions other than the West of Turkey. Unlike the employment exit models, the background variables are effective in employment entry models. Kurdish women have a lower risk of job entry than Turkish women, and a lower level of education in the parents implies a lower intensity of employment entry. As regards to marital status, being separated increases the risk of entry into employment when compared to being in the first marriage. When we look at the non-employment variables, as the order of the episode increases, the risk of entering employment increases when compared to women in their first episode of non-employment since marriage. When we look at the persistence of non-employment, interestingly, women in non-employment for five years or more after marriage are more likely to enter employment than women with less than one year of non-employment. This indicates that a saturation point exists where women spend time as non-employed, and after that point is reached, they are more likely to enter employment, preventing them from being persistently non-employed.[12]

5.2.5 Interactions between employment statuses and conceptions

The interaction models with calendar year and employment status by order of conception are shown in Figure 3, showing the relative risks of conception by employment status and calendar period. It can be observed that in past calendar periods, the risks of conceiving a child of any order have been higher, and that this is most pronounced for transitions to parities of two and three. Antinatalist population policies in Turkey, such as the Population Planning Law of 1965 and the Family Planning Law of 1983, may have played a role in the decline of risk of having a second or third birth. A comparison of the relative risks with respect to employment status reveals that a relatively higher risk exists for transitions to next birth for non-employed women when compared to employed women in almost all calendar periods. The exceptions are the 1973-1995 period for the transition from second to third birth, and the period prior to 1981 for the transition to fourth and higher-order births. The relative risks of first and third conceptions are almost the same for non-employed and employed women until the second half of 1990s. However, starting in 1995, which saw the start of a period of financial liberalization, and crises

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[12] It should be noted that although 39.4 percent of women never worked in their lifetime according to TDHS-2008, the share of non-employment months is more than twice that of employment months in our event data.

and recoveries in Turkey,[13] a change occurs, with the relative risks of first and third conceptions for employed women going into decline and the relative risk among non-employed women remaining stable. The 1994 economic crisis may have caused employed women to postpone motherhood entry and having a third child, and this change in intention may have carried over into the post-1994 economic crisis period. Sectoral shift in the employment of women from agriculture to the service sector may have influenced these differentiations in birth intensities between employed and non-employed women. For conceptions of order two, and four and higher, on the other hand, the relative risks of employed and non-employed women have been converging over time, leading to almost no differentiation.

The interactive effects of parity and calendar period are presented for the employment exit and entry models in the latter graphs of Figure 3. Looking at how the trends of transition to employment and non-employment evolved over time, it is apparent that both job exit and job entry intensities have been increasing since the 1989-1995 period. Financial liberalization and economic crises appear to increase the relative risks both transition to employment as well as transition to non-employment among women. Parity variable (except for the childless category) appears to be associated with higher differentials in relative risk of entering employment, but not that of leaving. The increase in the risk of job exit after the 1994 economic crisis is particularly valid for women with no children, which includes women pregnant for their first child as well. Women with one and two living children had seen a high and increasing risk of job entry since the 1989-1995 period. Finally, a look at the variable of age of youngest child (not shown in the Figure, but available upon request from authors) reveals that pregnant women have been affected the most over time negatively. The relative risk of transition to non-employment for pregnant women have increased very rapidly after 1992, diverging from the rest of other groups of while the relative risks are affected little by the age of the youngest child in any calendar period women The relative risk of entry into employment increased after 1992, except for pregnant women and those with infants.

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[13] Severe economic crises were witnessed in 1994 and 2001, while 1998 and 1999 saw three less severe downturns (Boratav, 2008).

Fig. 3 Interaction effects of selected variables and calendar period on specific events, standardized for other factors, Turkey
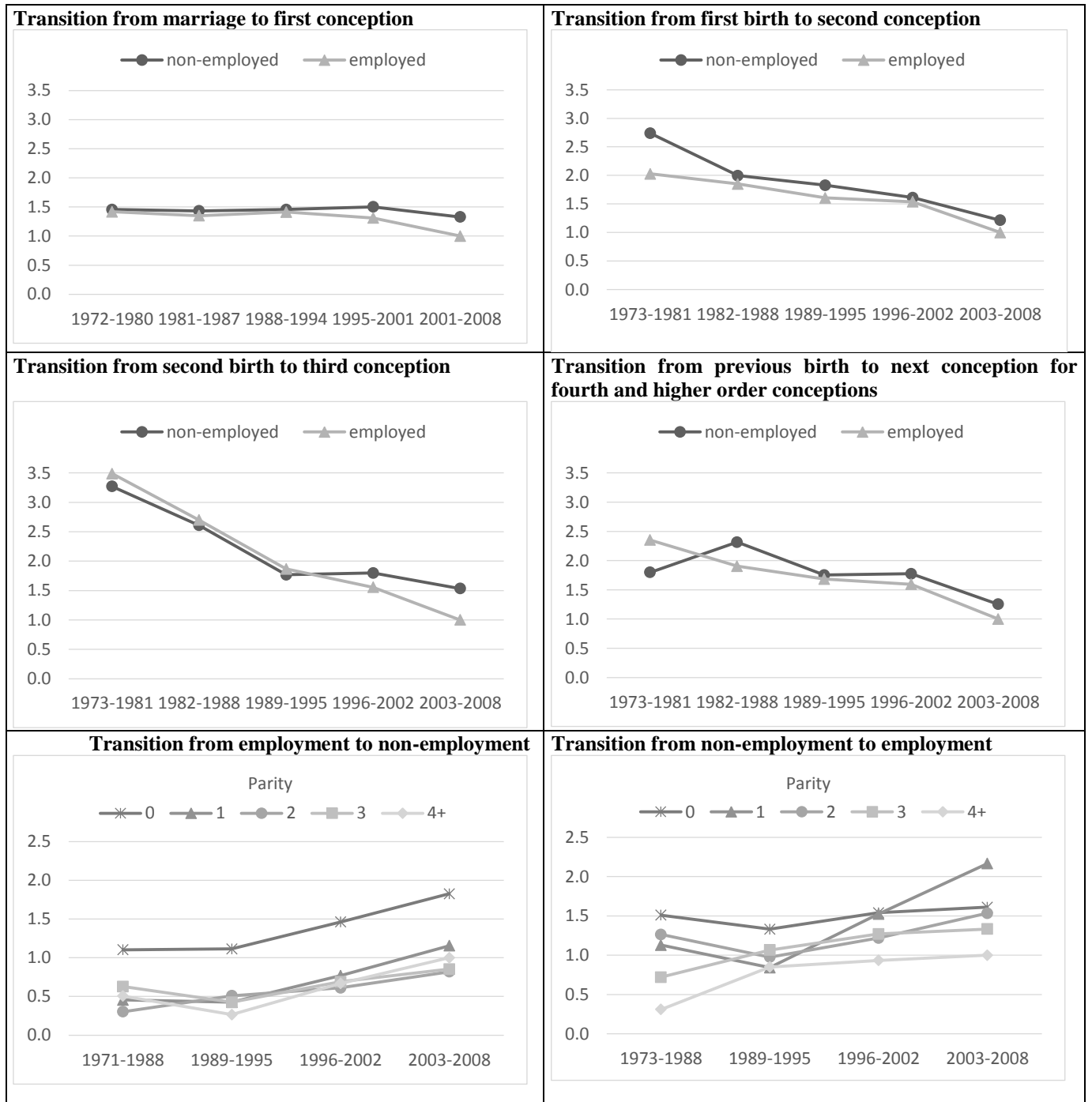
6. Conclusion

This study analyzes the two-way relationship between women's employment and fertility in Turkey using retrospective individual-level data. Specifically, we estimate the effect of the employment status and job characteristics of women on risks of first, second, third, and fourth and higher-order conceptions, and the effect of fertility and its parity-age dimensions on the exit from and entry into employment among women using a hazard approach with piece-wise constant exponential modelling.

Our findings reveal that job characteristics, such as working in the agricultural sector, working as a non-wage earner (unpaid or self-employed), and without any social security, which favor compatibility between the roles of worker and mother among women, increase the risk of conceptions. The only exception to this is that non-wage earning women have lower risks of fourth and higher-order conceptions, due probably to increasing financial needs for higher parities. Being employed in the public sector is associated with lower risks of conception, except for the second order, which conforms the notions of the two-child norm in Turkey, where the availability of employment insurance and stable jobs assist women working in the public sector to have as many births as they desire.

Regarding the relationship running from fertility to employment, it is apparent that being pregnant, especially with a first child, and having an infant is strongly associated with job exit. Parity, on the other hand, does not have the expected effects. Having no child increases the risk of employment exit while two children decreases it when compared to having one child, and higher parities do not affect the employment exit intensity among women. The fact that job exit intensity is highly dependent on the age of the youngest child rather than parity implies that it is temporarily increased by fertility due to pregnancy and infant-child. That said, parity has the expected effect on the risk of entry or return to employment. More children implies less job entries, and pregnancy and having young children prevent women from entering employment. Although the risk of employment entry has more recently been higher, children still pose an obstacle to women's employment. These findings overall suggest a two-way negative association between fertility and employment among women in Turkey.

In line with propositions of the role incompatibility hypothesis, the contextual evolution appears to have changed the association between employment and fertility among women from insignificant to strongly negative in Turkey by favoring the incompatibility of the roles of worker and mother among women since the second half of the 1960s. Contextual changes have taken place in Turkey, mainly in the nature of the jobs undertaken by women, and this can be attributed to the sectoral shift seen from agricultural jobs to jobs in the service sector. We controlled for this change in nature of the task through the use of retrospective information on job characteristics in our analyses. As a limitation of this study, the organization of childcare could not be included in the analyses due to the lack of data on childcare in the family in an event-history setting. However based on related macro-level variables, although somewhat speculative given that no opportunity exists to test for this at the micro level due to data limitations, it can be concluded that the change in nature in of the task has not been accompanied by any apparent change in social organization in terms of the institutionalization of childcare and the availability of parental surrogates around women in Turkey.

The interaction models with calendar year and employment status indicated that since 1995, the relative risks of first and third conceptions for employed women have been declining, while the relative risks for non-employed women have remained almost stable. This indicates that a differentiation by employment status emerged in the transitions to the first and third births. The interaction models with calendar year and fertility variables for employment entry and exit indicated that the employment outcomes of pregnant women were affected the most by the macro context. Economic downturns seem to increase the relative risk of transition to non-employment and to decrease the relative risk of transition to employment for pregnant women considerably.

Our findings have important policy implications for Turkey. As the total fertility rate reaches the level of replacement in Turkey, the ageing population phenomenon has caused alarm among the administration. The AKP Government in Turkey has adopted a traditional and pronatalist approach, and this has been reflected in the President's "at least three children" motto since 2008 in public discourse. The persistent low rates of employment among women, on the other hand, has not been given equal priority in government discourse. Recently, the reconciliation of the working and family lives has entered the agenda of the government, aimed at the creation of

family-oriented policies,[14] although it would be too early to label Turkey as an active family policy adopter. The findings of this study indicate that fertility, in all its dimensions - including pregnancy, age of children and parity - decreases the risk of entry into employment among inactive women. In this regard, any effect of pronatalist policies could further deter the employment of women unless they are accompanied by reconciliation mechanisms in Turkey.

The changing association between employment and fertility among women from insignificant to strongly negative in Turkey is similar to that experienced in developing countries, other than those in Latin America,[15] and the current situation is similar to developed countries in the pre-1985 period. The institutional context and the reconciliation of work and family appear to play an important role in changing the way this relationship is presented in the experience of developed countries. Whether Turkey and other developing countries will experience a similar change in contextual developments and the fertility-female employment relationship to that experienced by their developed counterparts will be interesting to note. Accordingly, cross-country studies involving both developing and developed countries, taking into account the institutional context, will be of great interest in shedding light on the question of the linkages between fertility and employment among women in future studies.

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[14] The Law on the Amendment to the Income Tax Law, numbered 6663 and dated January 29 2016, is an example of this development, facilitating parents to take part in such flexible schemes as part-time employment.

[15] Where a weakening relationship has been observed recently due to a decline in wage-earner and increase in non-wage earner women.

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Table A-1: Women or non-pregnancies exposed to birth risks[a], descriptive statistics of control variables

	First conception model				Second conception model				Third conception model				Fourth and higher order conceptions model			
	Person-time		Events		Person-time		Events		Person-time		Events		Person-time		Events	
	Woman-months	%	First conceptions	%	Woman-months	%	Second conceptions	%	Woman-months	%	Third conceptions	%	Non-pregnancy months	%	Fourth and higher order conceptions	%
Duration since start of episode (Baseline)																
year 1	54785	42	4048	64	71868	28	1303	26	57403	16	592	21	66656	17	964	29
year 2	23017	18	1242	20	50779	20	1355	27	46479	13	685	25	51530	13	927	28
year 3	12554	10	454	7	35153	14	851	17	37682	10	419	15	40476	10	479	15
year 4	7831	6	236	4	24531	9	567	11	31466	9	292	11	33863	8	312	9
year 5	5412	4	123	2	17386	7	410	8	26584	7	240	9	28899	7	188	6
years 6-7	7158	6	100	2	21957	8	369	7	42729	12	271	10	46733	12	261	8
years 8-10	6789	5	56	1	16975	7	207	4	45390	12	189	7	49913	12	123	4
10+ years	11378	9	46	1	21067	8	49	1	76323	21	79	3	82691	21	50	2
CONTROL VARIABLES																
AGE AND PERIOD VARIABLES																
Calendar years																
1972-1980[a], 1973-1981[b], 1975-1981[c], 1977-1981[d]	8167	6	478	8	8,514	3	359	7	4,104	1	131	5	1,373	0	35	1
1981-1987[a], 1982-1988[b,c,d,]	19351	15	1116	18	29,831	11	898	18	25,600	7	532	19	24,072	6	525	16
1988-1994[a], 1989-1995[b,c,d]	27412	21	1518	24	58,911	23	1,416	28	70,492	19	716	26	73,427	18	928	28
1995-2001[a], 1996-2002[b,c,d]	34571	27	1700	27	76,758	30	1,414	28	122,692	34	823	30	136,796	34	1,147	35
2002-2008[a], 2003-2008[b,c,d]	39425	31	1493	24	85,703	33	1,023	20	141,168	39	567	20	165,093	41	670	20
Age at first marriage[a]/first birth[b]/second birth[c]/previous birth[d] (time-fixed)																
12-16[a,b], 13-19[c], 14-19[d]	30520	24	1292	20	15467	6	529	10	39436	11	664	24	12445	3	218	7
17-21[a,b], 20-24[c,d]	60157	47	3326	53	120816	47	2778	54	162507	45	1458	53	105297	26	1248	38

22-26[a, b], 25-29[c, d]	28561	22	1379	22	88779	34	1450	28	116773	32	542	20	155351	39	1236	37
27-31[a, b], 30-34[c, d]	7202	6	257	4	27409	11	299	6	39488	11	91	3	92901	23	475	14
32-46[a], 32-44[b], 35-41[c], 35-46[d]	2485	2	53	1	7246	3	55	1	5853	2	13	0	34768	9	129	4

SOCIO-ECONOMIC VARIABLES

Education

No education or primary incomplete	29268	23	1129	18	29266	11	1136	22	44934	12	951	34	152938	38	2032	61
Primary level	62443	48	3446	55	133002	51	2965	58	232418	64	1561	56	219533	55	1199	36
Secondary level	8856	7	476	8	21263	8	304	6	24778	7	104	4	12546	3	41	1
High school or higher level	27504	21	1214	19	75973	29	703	14	61925	17	152	5	15744	4	32	1
In education	855	1	41	1	212	0	2	0	1	0	0	0				

RESIDENTIAL VARIABLES

Type of place of residence

Urban	87557	68	4315	69	198570	77	3392	67	273207	75	1694	61	263387	66	1633	50
Rural	40979	32	1977	31	60336	23	1704	33	90145	25	1067	39	136187	34	1663	50

Region

West	21441	17	978	16	53283	21	692	14	61902	17	256	9	36975	9	167	5
South	7403	6	364	6	13786	5	324	6	20395	6	180	6	24988	6	170	5
Central	26649	21	1547	25	57878	22	1208	24	83881	23	662	24	95801	24	529	16
North	9629	7	473	8	17075	7	383	8	24287	7	221	8	31860	8	208	6
East	63555	49	2941	47	117399	45	2502	49	173558	48	1450	52	211039	53	2226	67

BACKGROUND VARIABLES

Mother tongue (time fixed)

Turkish	105274	82	5237	83	233448	90	4127	81	330428	91	2000	72	299117	75	1531	46
Kurdish	19680	15	890	14	20618	8	836	16	26248	7	672	24	87640	22	1608	49
Other	3971	3	178	3	5650	2	147	3	7379	2	96	3	14005	3	167	5

Parental education (time fixed)

Mother and father uneducated*	40945	32	1934	31	62806	24	1861	36	118253	32	1288	47	198173	49	2074	63
One educated other uneducated	40842	32	2223	35	91334	35	1799	35	132902	37	936	34	127223	32	812	25

	First conception model[b]				Second conception model[c]				Third conception model[d]				Fourth and higher order conceptions model[e]			
Mother and father educated	38886	30	1773	28	92106	35	1114	22	89818	25	340	12	42384	11	146	4
Missing	8253	6	376	6	13470	5	337	7	23083	6	205	7	32982	8	273	8
Marital status																
Separated	6853	5	6	0	10571	4	7	0	10607	3	3	0	11729	3	3	0
First marriage	120472	93	6257	99	244717	95	5003	98	345556	95	2719	98	382128	95	3249	98
Later marriages	1601	1	43	1	3470	1	78	2	7502	2	45	2	6842	2	52	2
OTHER VARIABLES																
Order of conception (time fixed)																
Fourth													198898	50	1432	43
Fifth													97129	24	779	24
Sixth or higher order													104734	26	1094	33
Total	128926	100	6306	100	259717	100	5110	100	364056	100	2768	100	400762	100	3305	100

[a] Conceptions leading to a live birth, [b] First conception model, [c] Second conception model, [d] Third conception model, [e] Fourth and higher order conceptions model

Note: "Woman-months" is the total number of months that women are exposed to the risk of becoming a mother. "Events" indicates the number of conceptions resulting in live birth.

Interpretation: Non-employed women were childless and not pregnant for 87,461 months. 4,598 non-employed women conceived their first live child. Their annual conception rate for a first live child was thus 63 %. Non-employed women had had three live births but not fourth or higher order and were not pregnant for 273,269 months. 2,332 non-employed women conceived their fourth or higher order live child. Their annual conception rate for a fourth or higher order live child was thus 10 %. *Source:* TDHS-2008

Table A-2: Employment or non-employment spells exposed to exit risks[*], descriptive statistics of control variables

	Employment exit model				Employment entry model			
	Person-time		Events		Person-time			Events
	Employment-months	%	Exiting employment	%	Non-employment months	%	Becoming employed	%
Duration since start of episode (Baseline)								
year 1	28776	8	367	22	73440	8	483	23
year 2	23526	7	270	16	68654	8	239	11
year 3	21152	6	190	11	64014	7	156	7
year 4	19562	6	122	7	59568	7	138	7
year 5	18658	5	95	6	55788	6	93	4
years 6-7	35790	10	147	9	100808	12	170	8
years 8-10	49126	14	147	9	126523	15	206	10
10+ years	154010	44	342	20	319174	37	611	29
CONTROL VARIABLES								
AGE AND PERIOD VARIABLES								
Calendar years								
1971-1988[a] 1973-1988[b]	40126	11	121	7	100599	12	210	10
1989-1995	69700	20	193	11	179816	21	297	14
1996-2002	112312	32	514	31	278210	32	637	30
2003-2008	128462	37	851	51	309345	36	951	45
Age at start of employment[a]/start of non-employment[b] (time fixed)								
12-16	134964	38	295	18	215820	25	359	17
17-21	97999	28	456	27	428879	49	936	45
22-26	57073	16	371	22	148277	17	461	22
27-49	60564	17	559	33	74993	9	339	16
SOCIO-ECONOMIC VARIABLES								
Education								
No education or primary incomplete	63636	18	184	11	205549	24	255	12
Primary level	197419	56	820	49	481293	55	1117	53
Secondary level	12491	4	136	8	62439	7	164	8
High school or higher level	76851	22	534	32	117617	14	546	26
In education	204	0	5	0	1072	0	12	1
RESIDENTIAL VARIABLES								
Type of place of residence								
Urban	189750	54	1403	84	691560	80	1707	82
Rural	159538	46	263	16	174318	20	374	18
Region								
West	52789	15	386	23	126878	15	405	19
South	19575	6	63	4	49676	6	79	4
Central	83534	24	283	17	196200	23	363	17
North	41796	12	89	5	43120	5	135	6
East	152739	44	857	51	451528	52	1111	53

BACKGROUND VARIABLES

Mother tongue (time fixed)

Turkish	309981	88	1540	92	705527	81	1918	92
Kurdish	31289	9	103	6	140048	16	130	6
Other	9330	3	37	2	22395	3	47	2

Parental education (time fixed)

Mother and father uneducated*	114549	33	402	24	328795	38	557	27
One educated other uneducated	117684	34	593	35	296853	34	697	33
Mother and father educated	91996	26	589	35	188112	22	713	34
Missing	26371	8	96	6	54209	6	129	6

Marital status

Separated	16070	5	126	7	23363	3	149	7
First marriage	326826	93	1523	91	831841	96	1910	91
Later marriages	7703	2	32	2	12766	1	37	2

OTHER VARIABLES

Order of job[a]/Order of non-employment[b] (time fixed)

First	262265	75	1066	63	788443	91	1583	76
Second	67747	19	385	23	63331	7	347	17
Third	14166	4	149	9	12046	1	105	5
Fourth and higher order	6422	2	80	5	4149	0	60	3

Work experience after marriage[a]/Non-employment experience after marriage[b]

0 years	325434	93	1440	86	826661	95	1784	85
1 year	5814	2	69	4	5958	1	26	1
2-4 years	9443	3	94	6	14092	2	72	3
5+ years	9908	3	78	5	21259	2	213	10

Employment status

Agriculture	187445	53	313	19				
Non-agriculture	163155	47	1367	81				
Public	42786	12	130	8				
Private	307814	88	1550	92				
Wage earner	149813	43	1244	74				
Non-wage earner	200540	57	432	26				
Other	247	0	4	0				
Uncovered	252181	72	930	55				
Covered	98188	28	748	45				
Missing	231	0	2	0				
Total	350600	100	1680	100	867970	100	2095	100