DEMOGRAPHIC RESEARCH

Research Article

Men's and women's economic activity and first marriage: Jews in Israel, 1987-1995

Liat Raz-Yurovich

Table of Contents

Men's and women's economic activity and first marriage: Jews in Israel, 1987-1995

Liat Raz-Yurovich[1]

Abstract

Using both an analysis of the effect of lagged economic and current educational characteristics, as well as an analysis of the life-course changes in these characteristics, this study provides insights into the theoretical debate concerning the relationships between men's and women's economic activity levels and the transition to first marriage. Our findings support the men's economic stability hypothesis, the search hypothesis, and the income-pooling hypothesis. The results also support the women's economic independence hypothesis, but only to a certain degree. For men, we find a positive effect of employment stability and a positive effect of earnings, which increase over time. For women, the effect of salary has an inverse U-shape, and employment stability has a positive effect on marriage. Over the life course, we find that men who have a continuum of stable employment have the highest odds of first marriage, while women tend to reduce their economic activity in anticipation of or following marriage. Moreover, we find that marriage is postponed for at least two years after the completion of education.

---

[1] The Department of Sociology and Anthropology, and Demographic Studies, The Hebrew University of Jerusalem, Mount Scopus, Jerusalem, Israel 91905. E-mail: Liat.raz@mail.huji.ac.il

1. Introduction

How do women's and men's economic activity levels and their educational attainment affect their propensity to marry for the first time? Since the second demographic transition, which began in the 1960s, most Western industrialized countries have experienced a steady rise in the age of first marriage among men and women, and a decrease in marriage rates (Lesthaeghe 1995). Many of the economic, demographic, and sociological studies dealing with the transition to first marriage have discussed a possible connection between economic activity and delayed and less frequent marriage, and have raised the question of what roles women's growing labor force participation and the decline in young men's economic activity levels play in these marriage trends (Becker 1991; Cherlin 2000; Oppenheimer 1988).

Although these two different explanations have been discussed in previous analyses of the transition to first marriage, most empirical research has concerned itself either with the first explanation, regarding women's economic activity (e.g., Blossfeld 1995; Blossfeld and Huinink 1991; Blossfeld and Jaenichen 1992; Goldstein and Kenney 2001; Ono 2003; Raymo 2003; Santow and Bracher 1994), or with the second explanation, regarding men's economic activity (e.g., Huinink 1995; Kalmijn and Luijks 2005; Oppenheimer, Kalmin, and Lim 1997; Oppenheimer 2003; Teachman 2007). The two competing or complementary explanations have rarely been tested concomitantly in the same social context. Studies that have tested the hypotheses for both men and women have, along with other research, employed an income variable based on the respondents' self-reports, rather than on an official governmental source (e.g., Clarkberg 1999, Ono 2003, Oppenheimer 2003, Oppenheimer, Kalmin, and Lim 1997, Sweeney 2002). However, self-reported income variables have been found to have a low degree of reliability (Bertrand and Mullainathan 2001, Cutright 1974). Moreover, most previous research used the educational level as a proxy for women's economic independence (e.g., Blossfeld 1995; Blossfeld and Jaenichen 1992; Goldstein and Kenney 2001; Raymo 2003; Xie et al. 2003). This is problematic because education may represent factors other than current earnings.

By employing analyses of the effects of lagged economic and current educational characteristics, and of life-course changes in these characteristics, this study investigates whether and how the propensity among both men and women to marry for the first time (as measured by the annual probability of moving from singlehood to first marriage) is affected by men's economic stability levels (henceforth 'the men's economic stability hypothesis') and by women's economic independence (henceforth 'women's economic independence hypothesis'), respectively. Moreover, the search theory (Oppenheimer 1988) for delay in marriage timing and the income-pooling hypothesis (Cherlin 2000) will be presented and analyzed. A panel study which relates

to both men and women allows for a more reliable examination of the causal relationship between economic activity and the transition to first marriage, as implied by each of the above explanations.

This work examines the probability of marriage among never-married Jewish men and women in Israel by using a unique longitudinal database which links the Israeli 1995 census to income and employment data from the National Insurance Institute of Israel. This database, which follows people between 1983 and 1995, or 13 years, contains data on annual income and monthly employment status, as well as information on changes over time in family status, educational level and enrollment, and age. The non-Jewish population is not included in this research because the economic activity levels and marriage patterns of non-Jews in Israel are influenced by different cultural and social mechanisms (Lewin-Epstein and Semyonov 1992).

2. Background

2.1 Hypotheses for women

Some of the hypotheses put forward in various studies analyzing the relationship between economic activity levels and educational attainment on the one hand, and transition to marriage on the other, have suggested that women's earnings, economic activity, and education have negative effects on marriage. Meanwhile, other hypotheses have suggested that these factors have positive effects. According to *the women's economic independence hypothesis* of Becker (1991), women's earnings negatively affect their propensity to marry for the first time. Becker's claim that "the gain from marriage is reduced, and hence the attractiveness of divorce is raised, by higher earnings and labor force participation of married women" (Becker 1991:55) was interpreted by other scholars as a theory explaining the retreat from marriage (Goldstein and Kenney 2001; Oppenheimer 1994, 2000). The reduced gain from marriage would make marriage less advantageous to both partners, and hence marriage rates would decline. This is expected to happen because women's incentives to marry decline when they are no longer dependent on men's incomes, as is presumed to be the case when there is a high degree of specialization in gender roles. In addition, according to this hypothesis, the reduced gains from marriage for both men and women would make economically independent women less attractive for marriage. As for education, Becker claims that the effect of education is quite ambiguous (Becker, Landes, and Michael 1977). On the one hand, higher education for women will reduce their odds of first marriage due to the effect of education on earned income, or because "it equips them for roles other than the domestic" (Bracher and Santow 1998: 292). But, on the other

hand, women's education (net of its relationship with wages) might reflect their human capital, social capital, knowledge, and other skills, such as communication skills (Castro Martin and Bumpass 1989); which may improve their chances of marrying.

Becker's hypothesis triggered numerous theoretical responses and empirical investigations of the role of economic activity (mostly of women) in changing marriage patterns. His analysis of the reasons for lower rates of marriage was questioned by other scholars, who claimed that the recent decline in marriage rates signals not a retreat from marriage, but rather a delay in marriage timing (Blossfeld and Jaenichen 1992; Goldstein and Kenney 2001; Oppenheimer 1988; Oppenheimer, Kalmin, and Lim 1997). Blossfeld's (1995), Ono's (2003), and Raymo's (2003) findings qualify Becker's claim and suggest that in societies that are characterized by highly asymmetric gender roles, where there are structural and normative limitations to combining family and career, economic resources and education not only postpone marriage but also reduce the risk of marriage for women.

This negative effect is not expected to be found in countries where women fulfill dual roles at home and in the workplace, such as in Sweden (Bracher and Santow 1998). A number of studies that have tested the women's economic independence hypothesis have reached the conclusion that Becker's theory was relevant to his times, or the 1970s and 1980s, when there was a high degree of specialization in sex roles, but that now it is outdated in most industrialized societies, where role differentiation by gender is low (Bracher and Santow 1998; Cherlin 2000; Goldstein and Kenney 2001; Ono 2003; Oppenheimer 1994, 2000; Sweeney 2002).

Another theoretical perspective which predicts that the effect of women's earnings and education on the yearly odds of first marriage would be negative is the *search hypothesis* of Oppenheimer (1988). According to Oppenheimer, the greater economic independence of women allows them to engage in a more prolonged process of mate selection in marriage markets, and to set higher minimum levels of acceptability for a potential spouse. In addition, the growing importance of education for women due to their growing attachment to the labor market increases the opportunity costs of dropping out of school before completion, or of missing other training opportunities. Therefore, these two aspects would presumably lead to a delay in marriage for women. Nonetheless, unlike the negative effects of economic activity and education implied in Becker's hypothesis, Oppenheimer's hypothesis implies that the negative effects of these characteristics are only due to their effects on the delay in marriage, but that, inherently, an *income effect* can be observed, in which women's economic status and education represent positive personal attributes that are taken into account by men in the mate selection process. It is important to note that Becker also refers to the search process in his analysis of mate selection (Becker, Landes, and Michael 1977). However, his analysis puts more emphasis on the cost of the search, while the possibility of delay in

marriage is only implied. Oppenheimer, on the other hand, stresses more explicitly the implications of the search process for marriage timing, and discusses not only the role of the uncertainty regarding the spouse's potential economic standing in prolonging the search process, but also the implications of educational attainment in delaying marriage. Moreover, her analysis introduced the notion of "transition," and defined life-course changes in employment activity or educational pursuits as critical junctures in which the transition to marriage might occur (see further discussion in the section on the hypotheses for men).

Theoretical perspectives regarding the possible positive effects of women's salary and educational characteristics on marriage are the *income effect* or the *income-pooling effect*. According to Cherlin (2000), the specialization model is no longer relevant in the United States since the basis of intimate relationships changed during the second half of the 20th century, from specialization and household production to income pooling and household consumption. Moreover, women's earnings have come to represent a necessary and prominent contribution to family income "as a response to stagnant male incomes since the 1970s and to rapidly rising housing prices," as well as due to "rising material expectations" (Cherlin 2000: 138-139). In line with this thesis, women's salary is expected to be positively related to the propensity to marry, since higher shared income will allow the spouses to maintain higher standards of living, and, in addition, to support one another in times of hardship (e.g., illness, unemployment, educational enrollment, etc.) (Rogers 2004). This would make women with higher earnings and educational levels more attractive in the marriage markets of countries that experience economic growth, and in which dual-earner families are common. It was indeed found in most studies that women's economic independence (as measured by both salary or income and the educational level) is positively related to the propensity to marry for the first time, controlling for enrollment in education (Bracher and Santow 1998; Ono 2003; Sweeney 2002; Thornton, Axinn, and Teachman 1995) and the level of differentiation in gender roles (Blossfeld 1995; Ono 2003; Raymo 2003). Even if a significant relationship between women's earnings and marriage was not found, the direction of the effect was usually positive rather than negative (see Xie et al. (2003) for example).

2.2 Hypotheses for men

According to Oppenheimer (1994), there was a one-sided emphasis in the demographic research on the role of women's economic status in changing marriage trends which discouraged exploration of other potential explanations to these changes. One alternative to the women's economic independence hypothesis is the *men's economic*

stability hypothesis, which derives from Oppenheimer's criticism. This hypothesis suggests that, as long as the economic role of men is fundamental and central to the family income, the timing of young men's transitions to stable and economically rewarding employment will remain a major factor affecting age at marriage of both men and women (Oppenheimer 1988). An alternative explanation for marriage trends is, therefore, the decline in men's economic status, which began in the 1960s (Oppenheimer 1994). The decline in the economic status of young men also explains the emerging positive association between women's earning potential and their likelihood of marrying, because as young men's earnings have declined, they have come to favor women who can contribute to the household income and supplement their reduced earnings (Cherlin 2000). In this sense, the men's economic stability hypothesis and the income-pooling hypothesis overlap, because they suggest that both men and women want a spouse who can significantly contribute to the family income. This theoretical explanation, which put the emphasis on the life-course changes in young men's economic status, is part of the wider *search hypothesis* of Oppenheimer (1988), according to which there will be a delay in men's transition to first marriage due to the uncertainty about their future economic and educational attributes. Indeed, empirical findings suggest that the *income effect* is relevant for men, and that men's employment stability and earnings are positively related to the transition to first marriage (Oppenheimer 2003; Oppenheimer, Kalmin, and Lim 1997; Teachman 2007). In addition, it was found that the growing importance of women's economic activity levels has not affected the importance of men's economic characteristics to marriage formation over time (Sweeney 2002).

2.3 The Israeli context

Our analysis of the transition to first marriage among the Jewish population in Israel represents a significant contribution to the study of the relationship between the economic activity levels of men and women and the changes in the traditional nuclear family. This is because of the unique characteristics of Israeli society, which is located between tradition and transition. According to studies of Israeli society (Fogiel-Bijaoui 1999; Peres and Katz 1991; Toren 2003), two opposing forces simultaneously affect this modern, urban, and developed society (Friedlander and Feldman 1993). On the one hand, Jewish-Israeli society is affected by forces of change, such as accelerating economic development, as expressed, for example, in the growth in the Gross Domestic Product per capita (which, according to the CBS (2009), grew by 26% between the mid-

1980s to the mid-1990s)[2]. Other forces of change include Israel's well-established political democracy and welfare policy, its well-developed scientific research sector, its growing degrees of secularization, and the commitment of Israeli leaders to defending and promoting human rights, autonomy, and self-actualization. Moreover, ideals of gender equality and paid work for both men and women were emphasized by the founders of the Israeli state from its establishment, and by the Zionist movement in the pre-state era (Almog 1997; Berkovitch 2001).

On the other hand, Jewish-Israeli society is affected by conservative forces, such as religion, nationalism, traditionalism, and high levels of social control and familism; the family remains at the center of both the lives of individuals and of the nation (Fogiel-Bijaoui 1999). For example, there is no separation of religion and state in Israel, and marriage and divorce laws are under the jurisdiction of the religious rather than the civil authorities. Moreover, considerations of national security include issues such as the demographic balance between Jews and Muslims. These conservative forces contribute to relatively high fertility and marriage rates, low divorce rates, and the delay in the appearance of new familial patterns (Anson and Meir 1996; Fogiel-Bijaoui 1999; Peres and Katz 1991; Toren 2003).

In this dual situation, women's labor force participation is normative in the Jewish-Israeli society, even as marriage and high birth rates are promoted, and the most common family structure remains that of two married biological parents with children. Moreover, the overwhelming proportion of childbearing takes place within marriage, so that marriage patterns are crucial to an understanding of family structure. Cohabitation does exist among the Jewish population in Israel, but this practice is mainly confined to relatively young secular Jews; and even among this group it only occurs to a small extent (just 3.7% of all couples lived in cohabitation in 2003), and usually only for a short period of time (Blush-Klienman and Sherlin 1999; Fogel 2005). Therefore, cohabitation in Israel is a precursor to, and not a substitute for, marriage. Finally, according to Kraus (2002), although the two-earner family represents the most common family structure in Israel, the wage differences between men and women remain constant over time. Thus, women are concentrated in low-paid and less-rewarding jobs, and are regarded as secondary breadwinners. Nonetheless, according to Stier and Lewin (2002), in both dual-earner families and single-parent families headed by women in Israel, women's income constitutes a safety net for their families, preventing them from falling into poverty.

---

[2] According to international comparisons made by the European Commission (2005), Israel was located in the low-middle income group in 1999, together with Cyprus, Czech Republic, Greece, Hungary, Korea, Malta, New Zealand, Portugal, Slovak Republic, Slovenia, and Spain.

As Lesthaeghe and Surkyn (1988, in Blossfeld 1995) have noted, even between industrialized countries with similar levels of economic development there are great variations in the timing and tempo of the changes in family formation, largely due to differences in cultural values, family and religious traditions, and family policies in these countries. The conservative forces affect the timing and intensity of the appearance of familial changes during the second demographic transition in Israel, and, due to the coexistence of these contradictory forces, the Jewish population in Israel experience the same macro-demographical trends in family change as other developed societies, but to a lesser degree.

Thus, despite the transformational forces in the demography of the Jewish population in Israel, international comparisons indicate that Israel has relatively "traditional" characteristics. This is apparent, for instance, in its lower crude divorce rates (1.7 per 1,000 population, in 2003, compared to 3.8 in the USA, 2.8 in the UK, 2.6 in Germany, and 2.4 in Sweden; and compared to only a few countries with lower rates, such as Poland (1.3), Italy (0.8), and Ireland (0.7)) (Eurostat 2007). In addition, Israeli women have higher fertility rates (the TFR of Jewish women in Israel was 2.75 in 2006, compared to two in France; 1.9 in Ireland; 1.8 in the UK, Finland, and Denmark; 1.7 in the Netherlands; and 1.3 in Germany and Poland) (Eurostat 2009). Friedlander and Feldman (1993) show that the high fertility rates of Jewish women in Israel are affected by the fertility patterns of the religious Jews (according to the Israeli Central Bureau of Statistics, this group constitutes 16% of the Jewish population in 2002), but that, even among secular Jews (42% of the population in 2002), the estimated total fertility is around 2.1, which is still higher than the fertility rates in most other developed societies. Another important characteristic of Jewish population in Israel is that most births occur within marriage. At the beginning of 2000, 97% of all births were to currently married women, compared to 96% in Greece, 90.4% in Italy, 83% in Spain; and to countries with much lower percentages, such as France (57.4%), Denmark (55.4%), and Sweden (44.5%) (CBS 2004; Eurostat 2003). Moreover, both Jewish men and women have a lower average age at first marriage (27.3 for men and 25 for women, in 2002) relative to other countries (over 31 among men in Sweden, Denmark, and Iceland, and over 29 for men in the Netherlands, Austria, Slovenia, Finland, and Norway; over 25 among women in most Western European countries, and under 25 among women in most Eastern European countries) (Eurostat 2004).

While Jewish society in Israel is characterized by relatively traditional demographic characteristics, a comparison of the labor force participation rates of women and mothers in those in other developed countries reveals relatively high levels of economic activity. According to Mandel and Semyonov (2006), out of 22 developed countries in the late 1990s, only 10 countries had higher labor force participation rates among women than Israel (where 65% of all women aged 25-60 are in the labor force),

and only eight countries had higher labor force participation rates among mothers of preschool children than Israel (where about 55% of all mothers of preschool children are in the labor force). Moreover, in a comparison of the number of hours worked in 19 countries, Mandel and Semyonov demonstrated that only six countries have higher percentages of women who work full-time than Israel (where about half of all employed women aged 25-60 work in full time jobs). It is important to note that Mandel's and Semyonov's data on Israel included not only Jewish women, but also significant populations of non-Jewish (primarily Arab population) women whose labor force participation rates are much lower, and hence we would expect higher rates for Israel if we were to look only at Jewish women.

Nevertheless, according to Dahan (2007), starting in 1980 and until 2001, there was a sharp decrease in participation rates of Israeli men. This was mainly due to the increase in the share of Ultra-Orthodox Jews in the population, who tend to be more detached from the labor market than the general population; and because of poor labor market conditions for less-educated and disabled people. The participation rates of men declined in many Western countries, but the participation rates of Israeli men were the lowest of all the OECD countries.

Thus, these labor force participation characteristics of Israeli men and women, together with the unique demographic and social attributes of the Jewish population, make the Jewish society in Israel an interesting case study in analyzing the relationship between the economic activity levels of men and women and the transition to first marriage. Due to the characteristics of Israeli society, three main research hypotheses are derived:

Hypotheses for women: Since Israeli women tend to combine family life and labor force activities, we expect that the women's economic independence hypothesis will not be relevant to the Israeli context. Earnings and education might have negative effects due to the prolonged search in the marriage market. However, according to the search hypothesis, it may be expected that, because dual-earner families are the most common families in Israel, the income-pooling effect will occur, and that, therefore, women's earnings and education will have positive effects on the transition to first marriage.

Hypotheses for men: Since men are regarded as the main breadwinners and women are regarded as secondary breadwinners, the men's economic stability hypothesis and the income hypothesis are expected to be relevant to Jewish men in Israel.

Hypothesis for change over time: According to the income-pooling hypothesis, due to the accelerating economic development and the increase in standards of living in Israel, and because both men's and women's earnings are important to the familial income pooling, it may be expected that the positive relationship between men's and women's economic activity levels and the transition to marriage would become stronger over time.

3. Data and variables

This research is based on a unique longitudinal database, which links data from a 20% sample of the Israeli 1995 census (Central Bureau of Statistics 1995) and annual data from the National Insurance Institute of Israel (NIII 1983-1995). The census data provide information on marital status in 1995, number of times married, and the exact year of first and last marriages. In addition, it contains data on current (highest) educational level and certificate, and a list of variables which describe how many years the respondent spent at each educational level. The data from the NIII follows people over 13 years, between 1983 and 1995, and contains data on yearly income and monthly employment status. This information is based on Israel's tax authority reports on salaried employees. Therefore, salary and employment data from the NIII for a particular year is not available for people who were not salaried employees or who did not participate in the civilian labor force in that year. Due to quality problems in the NIII data for the years 1983-1986, this research will only relate to the years 1987 to 1995. Results will be presented by sex and period (1987-1990, 1991-1995), due to the expectation of finding a growing positive effect of men's and women's economic activity levels on the propensity to marry for the first time.

The sample contains never-married individuals (at the time of the census in 1995), as well as persons who married for the first time in Israel between 1987 and 1995. Individuals may contribute person-years of exposure from ages 17 to 45; immigrants contribute person-years of exposure in Israel only.

The dependent variable is the log-odds of a first marriage in year *t*. The estimations are based on observations of marriage, coded as 1 if first marriage occurred in year *t*, and 0 otherwise.

Three control variables are included in the analysis: age, ethnic origin, and generation and year. Age, a time-varying covariate was computed backward according to the respondent's age at the time of the census. Both men's and women's age groups were categorized as 17, 18-21, 22-24, 25-27, 28-29, 30-34, 35-39, and 40-45. The age group 18-21 represents men and women during their mandatory military service. In the period 1987-1990, men's average age, as computed over person-years in this period, is 23.22 (SD=5.46) and women's average age is 22.69 (SD=5.85); in the period 1991-1995, men's average age is 24.85 (SD=5.37) and women's average age is 24.47 (SD=5.77).

The ethnic origin variable, which is combined with generation, was divided into six categories:

1) First-generation Western Jews (for respondents who were born in Europe or in North or South America and immigrated to Israel when they were at least six

years old; this group constitutes 12% of the population for both men and women in the two periods);

2) Second or 1.5-generation Western Jews (for respondents who were born in Europe or in North or South America and immigrated to Israel when they were less than six years old; or respondents who were born in Israel and both their parents were born in Europe or in North or South America; about 14% of the population);

3) First-generation Eastern Jews (for respondents who were born in North Africa, Asia, or the Middle East and immigrated to Israel when they were at least six years old; about 3% of the population);

4) Second- or 1.5- generation Eastern Jews (for respondents who were born in North Africa, Asia, or the Middle East and immigrated to Israel when they were less than six years old; or respondents who were born in Israel and both their parents were born in North Africa, Asia, or the Middle East; 40% and 35% of men and 37% and 33% of women in the early and late periods, respectively);

5) Mixed ethnicity (for respondents who were born in Israel and their parents are of mixed origin, or one of them is Western Jew and the other Eastern Jew; 4% of men and women in the two periods);

6) Third-generation Israeli (for respondents who were born in Israel and at least one of their parents was born in Israel; 27% and 33% of men and 29% and 36% of women in the early and late periods, respectively).

Ethnicity and generation were found in previous research to be important and influential to the propensity to marry (Gshur and Okun 2003), and they were also shown to be associated with socioeconomic characteristics, such as education and income (Friedlander et al. 2002; Cohen, Haberfeld, and Kristal 2007). In this research, this variable serves as control variable.

We employed both analysis of the effect of lagged economic and current educational characteristics and analysis of life-course changes in these characteristics. The former includes two educational variables and two economic variables, in addition to the control variables:

Years of education in year *t* refers to the number of years of education the respondent accumulated by the end of year *t*. This continuous time-varying covariate takes into consideration the fact that the accumulation of years of education is postponed at ages 18-19 for women and 18-20 for men due to military service.

Educational enrollment in year *t* was computed according to Raymo's (2003) variable. The enrollment variable in this study reflects the person's position at the end of year *t*, and is adjusted to the Israeli society, where the assumption is that educational enrollment is interrupted during military service. This variable was constructed in a

detailed manner, based on information from the census on the number of years the respondent spent at each educational level, and the highest degree and level of education achieved. This variable is coded 1 if enrolled in year *t*, and 0 otherwise. The decision to refer to the enrollment in year *t* and not in year *t-1* was made under the assumption that the person's situation at the end of the year reflects his situation for this year (i.e., someone who was enrolled/not enrolled in education at the end of year *t* was enrolled/not enrolled in education in all the months of this year). The possible reverse effect of marriage on enrollment in education can be captured by the variable which measures transitions in enrollment status (see below).

The annual real salary (in Israeli Shekels) in year *t-1* is computed from nominal salaries with the consumer price index of the year 2006. The real salary is divided into five percentile groups (0%-20%, 20%-40%, 40%-60%, 60%-80%, and 80%-100%), which are computed separately by sex and year. The dummy variables are useful for capturing the non-monotonic effect of salary among women. Another dummy variable of "no reported salary" is included in the regression equation. The 60%-80% category is the reference category in the regression models.

The time-varying covariate of number of months employed in year *t-1* is divided into four categories: 12, 8-11, 5-7, and 1-4 months. Another dummy variable of "no reported employment" is included in the regression equation. Year-round employment or employment stability (i.e., 12 months of employment) is the reference category. This variable has the meaning of employment stability or instability.

This analysis includes economic activity in year *t-1* rather than in year *t* in order to avoid the reverse effect of marriage on economic activity, especially among women.

The analysis of life-course changes employs the control variables and the continuous years of education variable, as well as three additional variables which measure transitions over the life course:

Transitions in enrollment status are measured by four dummy variables which describe the enrollment status (enrolled vs. not enrolled in education) in year *t-1* and year *t*. The four possible transitions are: enrolled-enrolled, enrolled-not enrolled, not enrolled-enrolled, and not enrolled-not enrolled. People who were not enrolled in the two consecutive years are the reference category in the regression models.

Increases or decreases in salary over time are captured by two dummy variables which were constructed using the ratio between the moving average of the salary in years *t-1* and *t-2*, and the moving average of the salary in years *t-3*, *t-4*, and *t-5*:

$$\left(\frac{Mean(Salary_{t-1}, Salary_{t-2})}{Mean(Salary_{t-3}, Salary_{t-4}, Salary_{t-5})} \right) \tag{1.1}$$

A ratio larger than 1 indicates an increase ("improved" dummy) in the salary prior to year *t*, and a ratio lower than 1 indicates a reduction ("worsened" dummy) in salary. This computation is less sensitive to erratic year-to-year changes in salary, but provides an indicator of income change over time.

Four dummy variables of transition in number of months employed between year *t-1* and year *t* were computed by comparing the number of months the respondent worked in each of the two consecutive years. The four possible transitions are unstable-unstable, unstable-stable, stable-unstable, stable-stable. Stable employment is defined as working 12 months, and unstable employment is defined as working less than 12 months or having no reported months of employment. The reference category in the regression models is transition between unstable to unstable employments.

4. Method

Discrete-time event-history analysis regressions for the probability of moving from singlehood to first marriage are used to estimate the coefficients of the covariates for men and women separately in the periods 1987-1990 and 1991-1995. Each man and each woman contribute exposure to first marriage starting at age 17 (the legal age for marriage in Israel) or starting in 1987 (beginning of research window) until the first marriage occurs or until the year 1995 (end of research window).

Since our spell data is left-truncated, with delayed entry at time u_i, we have to condition on survival up to time u_i; therefore, the summation runs over the years from the year of the delayed entry to the year when last observed:

$$\log L_i = \sum_{k=u_i+1}^{j} \left[y_{ik} \log h_{ik} + (1 - y_{ik}) \log(1 - h_{ik}) \right] \qquad (1.2)$$

Regression models of the effects of lagged economic and current educational characteristics and of life-course changes in these characteristics were estimated. A detailed description of the regression models will be given in the next section. It is important to note that, according to Allison (1995)[3], we can use these logistic regression models without any correction for dependency between observations for the same person, and without being concerned about bias in the standard errors and in the test statistics, since the event analyzed occurs only once in the individual's life.

---

[3] Allison 1995: 223.

Table 1 shows the means and standard deviations of the covariates for the samples of the person-years. For the dichotomous variables, the mean represents the percentage of the value, which is coded 1. The real salary (in Israeli Shekels) is represented in its continuous form, as is the number of employment months variable. Out of 92,665 never-married men, 13,903 had married within the first time period and 18,048 had married within the second time period. Out of 79,951 never-married women, 14,611 had married within the first time period and 17,624 had married within the second time period.

Table 1:   **Variable means and standard deviations for men and women, computed over person-years in each period**

| | Men | | | | Women | | | |
| | 1987-1990 | | 1991-1995 | | 1987-1990 | | 1991-1995 | |
Variable	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Annual probability of marriage	.07	.25	.07	.26	.09	.29	.10	.29
Real salary (Israeli Shekels)	39,483	47,280	45,141	52,466	30,153	34,249	35,100	36,250
Number of employed months	8.03	4.17	8.40	3.95	7.78	4.19	8.46	3.93
Years of education	12.20	2.54	12.39	2.53	12.72	2.33	13.10	2.40
Educational enrollment	.19	.39	.10	.31	.28	.45	.17	.37
n (person-years)	205,955		246,552		163,821		184,441	

5. Results

5.1 Effects of lagged economic and current educational characteristics

Table 2 displays the exponentiated coefficients from four models for men and women separately for each of the two periods of time, 1987-1990 and 1991-1995. The first models include effects for all the control variables: age, ethnic origin, and year, along with the effects of the educational covariates. Effects of control variables are not presented in the regressions tables. As mentioned before, the analysis is presented in two periods of time due to the expectation of finding a growing positive relationship between the economic activity of men and women and the transition to first marriage.

The second models include all the variables in the first models, as well as the effects of the real salary dummy variables. The third models include all the variables in the first models, as well as the effects of the number of employment months dummy

variables. The second and the third models were designed to separate the effects of the salary and the number of employment months variables.

The fourth models include all the variables in the first models, as well as the effects of the real salary and the number of employment months variables. The fourth models, when compared to the first models, allow us to ascertain the net effects of the educational variables, controlling for the economic variables. In addition, comparing the effects of the economic variables in the second and third models to the effects of these two variables in the fourth models allow for different interpretations of the two economic variables.

In order to control for unobserved explanatory variables (level of religiosity, for example), we use the Case-Time-Control method (Allison 2009; Allison and Christakis 2006). This is a fixed-effects, event-history method for the analysis of non-repeated events, which allows for the inclusion of time-varying covariates and produces largely unbiased estimates of the odds ratio. The results of the fixed-effects analyses in this study are substantially similar to the results of the conventional logistic regression, and therefore will not be presented here.

The fourth models in Table 2 suggest that, among men in the two periods, the effects of the real salary on the odds of marriage are positive. For example, in the early period, the odds of moving from singlehood to first marriage for men whose earnings were in the 40th-60th percentiles of the distribution in the previous year were 20.7% lower than those of men whose earnings were in the 60th-80th percentiles of the distribution. The effect of the salary is positive when we do not control for the amount of work invested in order to achieve this level of salary (i.e., when we do not control for the number of employed months, as in the second models) and when we take it into account (as in the fourth models). The positive effect of the salary among men becomes stronger between the two periods, as can be seen in Table 3, where the differences between periods in the salary variable for men are significant[4].

The number of employed months a person had in the previous year is an indicator of the employment stability of this person. As can be seen in the two periods of time, the fewer months a man worked during the year, the lower are his odds of marrying in the following year. For example, in the fourth model, all other factors held constant, the odds of marrying for a man who worked 8 to 11 months during the previous year in the late period of time are 15% lower than for a man who was employed 12 months in the

---

[4] Tests for differences between the coefficients for men and women and the coefficients for periods were made using the Wald chi-square statistic. According to Allison (1999), the computation of this statistic for differences, for example, between men's and women's coefficients is:

$$\frac{(b_M - b_W)^2}{\left[s.e.(b_M)\right]^2 + \left[s.e.(b_W)\right]^2}$$

previous year. The effect of employment instability remains negative with and without controls for salary. A comparison between the third and the fourth models in each period shows that the effect of employment instability becomes less negative when controlling for the effect of real salary. This points to the mediating effect of earnings on the effect of employment instability on marriage. As can be seen from Table 3, the negative effect of employment instability does not change between the two periods.

Table 2: **Odds ratios from regressions with lagged economic and current educational covariates, predicting the odds of first marriage among Jewish never-married men and women in Israel, 1987-1995**

	Men							
	1987-1990				1991-1995			
Covariates	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Education (t)								
Years of education	1.028***	1.017***	1.021***	1.017***	1.032***	1.018***	1.023***	1.018***
Enrollment	.539***	.575***	.583***	.591***	.677***	.729***	.725***	.739***
Real wage (t-1)								
0-20		.627***		.776***		.494***		.597***
20-40		.651***		.794***		.608***		.703***
40-60		.793***		.880***		.734***		.791***
60-80		Ref		Ref		Ref		Ref
80-100		1.188***		1.162***		1.271***		1.227***
No reported salary		.638***		.896**		.602**		.839***
Number of employed months (t-1)								
12			Ref	Ref			Ref	Ref
8-11			.826***	.888***			.721***	.855***
5-7			.618***	.730***			.587***	.800***
1-4			.536***	.682***			.476***	.749***
No reported employment			.504***	.577***			.510***	.623***
constant	-2.022***	-1.716***	-1.671***	-1.652***	-2.509***	-2.125***	-2.111***	-2.069***
-2 Log Likelihood	86630	85840	85809	85602	117492	116008	116194	115831
N	205,955	185,354	205,955	185,354	246,552	243,488	246,552	243,488

Table 2: (Continued)

Covariates	Women							
	1987-1990				1991-1995			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Education (t)								
Years of education	1.006	1.003	1.002	1.003	1.015***	1.010***	1.011***	1.011***
Enrollment	.629***	.678***	.657***	.681***	.806***	.848***	.841***	.849***
Real wage (t-1)								
0-20		.683***		.778***		.619***		.746***
20-40		.808***		.922		.766***		.903**
40-60		.928*		.993		.854***		.938*
60-80		Ref		Ref		Ref		Ref
80-100		.915**		.898***		.976		.944*
No reported salary		.604***		.581***		.576***		.602***
Number of employed months (t-1)								
12			Ref	Ref			Ref	Ref
8-11			.939*	.918**			.859***	.864***
5-7			.852***	.841***			.724***	.765***
1-4			.740***	.794***			.661***	.771***
No reported employment			.650***	.997			.595***	.904*
constant	-1.453***	-1.251***	-1.273***	-1.215***	-1.944***	-1.692***	-1.737***	-1.668***
-2 Log Likelihood	89845	88145	89562	88077	111076	110283	110549	110215
N	163,821	143,704	163,821	143,704	184,441	181,588	184,441	181,588

Note: Controls are age, ethnic origin and generation, and year (omitted from the table).

* p < .05, ** p < .01, *** p < .001

Table 3: **Wald Chi-square statistics for testing the differences between coefficients of 4th models**

| | Differences between Periods | | | | Differences between Men and Women | | | |
| | Men | | Women | | 1987-1990 | | 1991-1995 | |
	Wald Chi-square for differences	*p*-value	Wald Chi-square for differences	*p*-value	Wald Chi-square for differences	*p*-value	Wald Chi-square for differences	*p*-value
Salary (t-1)								
0-20	14.398***	0.0001	0.763	0.3824	0.048	0.8266	11.974***	0.0005
20-40	4.429*	0.0353	0.144	0.7043	6.081*	0.0137	23.452***	0.0000
40-60	5.568*	0.0183	1.580	0.2088	6.333*	0.0119	16.245***	0.0000
80-100	1.919	0.1660	1.252	0.2632	32.375***	0.0000	45.595***	0.0000
Number of employed months (t-1)								
8-11	0.902	0.3422	2.132	0.1443	0.641	0.4233	0.068	0.7943
5-7	2.843	0.0918	3.116	0.0775	6.145*	0.0132	0.781	0.3768
1-4	2.388	0.1223	0.267	0.6054	6.185*	0.0129	0.256	0.6129
Years of Education	0.040	0.8415	1.531	0.2160	6.125*	0.0133	2.560	0.1096
Enrollment	19.343***	0.0000	31.109***	0.0000	8.996**	0.0027	9.746**	0.0018

As for the effect of education among men, we see that, controlling for all other factors (model 4), each additional year of education increases the odds of marrying by 1.7% in the early period, and by 1.8% in the late period. Educational enrollment decreases the odds of marrying by 41% in the early period, and by 26% in the late period. Therefore, the negative effect of men's enrollment decreases between the two periods. The ratio between the unexponentiated coefficients of years of education in the second and first models reveals that, in the early period, 39% of the effect of education is due to the men's earnings, while in the late period, 44% of this effect is due to earnings. Therefore, this partial effect of years of education serves as an indicator of the current economic status of these men. The net effect of years of education, after controlling for earnings, can be interpreted as an indicator of the future earning potential of these men, although it can also reflect the human capital, social capital, knowledge, and skills of these men.

In sum, consistent with the men's income hypothesis and the economic stability hypothesis, we see that a man's earnings and economic status have positive effects on his odds of marrying, while a man's employment instability has a negative effect on marriage. The strengthening of the positive effect of men's earnings between the two periods is also in line with the income-pooling hypothesis, and point to the growing

importance of men's economic activity levels to the transition to first marriage in Israel, where men are still regarded as the primary breadwinners.

The fourth regression model for women show that the effect of the salary in the two periods, all other factors held constant, has an inverse U-shape, with a relatively flat distribution in the middle categories (the groups between the 20th to 80th percentiles) in the early period. In the two periods, the highest odds of marriage are for women in the 60th-80th percentile category, but there is a decline in the odds of marriage for women whose salary is in the highest, or 80th-100th percentiles of the distribution. For example, the odds of marriage in the following year for women whose salary is in the 80th-100th percentiles of the distribution in a certain year are about 10% lower than the odds in the early period for women whose salaries are in the 60th-80th percentiles of the distribution, and are 6% lower in the later period. Therefore, the results show that the effect of a woman's salary on her transition to marriage is positive up to a certain threshold, while from this level of salary upwards, the effect of having a higher salary becomes negative. The effect of the real salary level among women in the later period (1991-1995) does not become more positive, as can be seen in Table 3; therefore, the third hypothesis is not confirmed for women. The findings regarding the positive effect of women's salary on transition to first marriage are consistent with the income-pooling hypothesis, since they demonstrate the importance of women's earnings to the family income after marriage. Nonetheless, it seems that, in line with the women's economic independence hypothesis, because women in Israel are regarded as secondary breadwinners and are expected to combine work and family life, and because the family is very central in the lives of individuals, women who achieve too highly might be regarded as less attractive marriage partners, or they might be less interested in marriage because it would curtail their career prospects.

Employment instability was found to have a negative effect on transition to first marriage among women in the two periods. All other factors held constant (model 4), the fewer months a woman was employed during the year, the lower are her odds of marrying in the following year. These findings also point to the importance of women as potential breadwinners for their families.

The effect of years of education on the odds of first marriage among women was not found to be significant in the early period, but was found to be positive and significant in the later period, so that, holding all other factors constant (model 4), each additional year of education increases women's odds of first marriage by 1%. Enrollment in education decreases the odds of first marriage in a given year by 32% in the early period, and by 15% in the late period, relative to women who are not enrolled in the same year. For both men and women, the reduction in the negative effect of school enrollment between the two periods might be related to increases over time in educational expansion. Due to the dual desires to acquire higher levels of education and

to establish a family by marriage and childbearing, men and women may decide to combine enrollment in education and marriage, especially in the Israeli context, where most births take place within marriage. This trend will decrease the negative effect of the enrollment coefficient in the later period. The findings regarding the negative effect of enrollment in education on marriage, together with the findings regarding the positive effect of years of accumulated education, for both men and women, are in line with the search theory.

In sum, we see that, in contrast to predictions based on the women's economic independence hypothesis, higher earnings and economic stability of women increase their propensity to move from singlehood to first marriage. It is also important to note that the positive effects of earnings and the negative effects of employment instability (in the early period) are stronger among men than among women, as can be seen in Table 3. This comparison may imply that men's economic characteristics are more influential in the decision to marry than are women's economic characteristics.

5.2 Models of life-course changes in economic and educational characteristics

These models allow us to analyze how changes over the life course, especially in enrollment and educational status, as stressed in Oppenheimer's theory, affect the propensity to marry for the first time. Table 4 displays four models for each period and sex, parallel to those in the analysis of lagged or current characteristics, only here the models contain covariates which relate to the transition in enrollment status and economic stability between year *t-1* and *t*, and to changes in the real salary over time.

For both men and women in the two periods, controlling for all the other factors (model 4), the highest probability of moving from singlehood to first marriage is for those who were not enrolled in education for two consecutive years. In addition, the lowest probability of first marriage is among those who were enrolled in education in the previous year, but who are not enrolled in education in the current (*t*) year (this is also the case when the omitted category is enrolled-enrolled). These two findings indicate that enrollment in education may postpone marriage for at least two years after the completion of education. A separate analysis (not presented) shows that there are also significant differences between the enrolled-enrolled and enrolled-not enrolled categories, so that the effect for the enrolled-not enrolled variable is more negative than the effect of the enrolled-enrolled variable. This is due to the fact that 67% of the enrolled-not enrolled group are young people who have finished high school in *t-1* and are about to enter, or already have entered, their military service in year *t*.

Men and women whose salary increased over time have higher odds of first marriage relative to people whose earnings decreased. All other factors held constant (model 4),

the odds of first marriage are 10% and 14% higher for men whose earnings increased in the early and late periods, respectively. The effect of a salary increase for women is positive in the two periods, but is significant only in the early period, where the odds of first marriage are 5% higher for women whose earnings increased (model 4).

Table 4: **Odds ratios from regressions with life-course changes covariates, predicting the odds of first marriage among Jewish never-married men and women in Israel, 1987-1995**

	Men							
	1987-1990				**1991-1995**			
Covariates	**(1)**	**(2)**	**(3)**	**(4)**	**(1)**	**(2)**	**(3)**	**(4)**
Years of education (t)	1.042***	1.037***	1.033***	1.032***	1.042***	1.036***	1.029***	1.029***
Transitions in enrollment (t-1 to t)								
Enrolled – Not enrolled	.475***	.476***	.511***	.509***	.583***	.592***	.638***	.638***
Enrolled – Enrolled	.479***	.490***	.530***	.533***	.613***	.627***	.677***	.678***
Not enrolled - Enrolled	.714**	.768*	.786	.803	.844	.893	.919	.926
Not enrolled – Not enrolled	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Improvement in real wage								
Improved		1.223***		1.095***		1.382***		1.138***
Worsened		Ref		Ref		Ref		Ref
No reported salary		.903***		.968		.971		1.028
Transitions in employment stability (t-1 to t)								
Unstable-Unstable			Ref	Ref			Ref	Ref
Unstable-Stable			1.633***	1.591***			1.628***	1.595***
Stable-Stable			2.024***	1.942***			2.115***	2.010***
Stable-Unstable			1.348***	1.294***			1.551***	1.492***
constant	-2.148***	-2.184***	-2.408***	-2.414***	-2.613***	-2.753***	-2.848***	-2.903***
-2 Log Likelihood	86393.04	86187.30	85448.95	85417.45	117315.49	116879.81	115796.08	115755.03
n		205,955				246,552		

Table 4:   (Continued)

	Women							
	1987-1990				1991-1995			
Covariates	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Years of education (t)	1.030***	1.027***	1.028***	1.027***	1.030***	1.026***	1.027***	1.025***
Transitions in enrollment (t-1 to t)								
Enrolled – Not enrolled	.384***	.372***	.391***	.379***	.627***	.620***	.648***	.641***
Enrolled – Enrolled	.531***	.544***	.548***	.553***	.738***	.752***	.773***	.776***
Not enrolled - Enrolled	.493***	.502***	.502***	.507***	.674***	.687***	.697***	.702***
Not enrolled – Not enrolled	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Improvement in real wage								
Improved		1.089***		1.052*		1.146***		1.043
Worsened		Ref		Ref		Ref		Ref
No reported salary		.853***		.866***		.849***		.865***
Transitions in employment stability (t-1 to t)								
Unstable-Unstable			Ref	Ref			Ref	Ref
Unstable-Stable			1.125***	1.080**			1.247***	1.202***
Stable-Stable			1.191***	1.116***			1.418***	1.330***
Stable-Unstable			1.562***	1.476***			1.716***	1.630***
constant	-1.743***	-1.731***	-1.843***	-1.793***	-2.139***	-2.162***	-2.330***	-2.282***
-2 Log Likelihood	89090.93	88968.65	88945.55	88872.17	110859.32	110628.35	110422.59	110339.78
n		163,821				184,441		

Note: Controls are age, ethnic origin and generation, and year (omitted from the table).
    * p<.05, ** p<.01, *** p<.001

For both men and women, the lowest odds of first marriage are for those who had unstable employment for two consecutive years. In line with the men's economic stability hypothesis, the highest odds among men are for those who had stable employment for two consecutive years. In both time periods, the odds of first marriage for these men are almost twice as high as for those who had unstable employment for

two consecutive years. Surprisingly, among women the highest odds of first marriage are for those who experienced a year of stable employment followed by a year of unstable employment. This finding might be caused by the reverse effect of marriage on the economic activity of women. In other words, women may reduce their economic activity in anticipation of marriage or immediately following marriage. One possible explanation for this finding is that women may migrate within Israel following marriage, which may affect their employment opportunities. Moreover, it could be that childbearing right after marriage will affect the economic activity of women. This finding points to the possible importance of bidirectional effects between economic and marriage activity, and reinforces the need to use lagged economic activity as an explanatory variable in this research.

6. Discussion

Following the second demographic transition, changes in the nuclear family in general, and in the institution of marriage in particular, led to a theoretical debate about the causes of these changes. This study tests the four major theoretical explanations of the changes in marriage behavior which have been offered in the academic literature. Drawing on longitudinal data for the years 1987-1995, the women's economic independence hypothesis, the men's economic stability hypothesis, the search hypothesis, and the income pooling hypothesis were tested among the Jewish population in Israel. This is the first time these explanations have been tested concomitantly for men and women from the same social context. We also employed a salary variable which is based on an official governmental source. The Jewish society in Israel is an interesting case study in this regard, due to its special characteristics as a society in transition. On the one hand, women's labor force participation rates are similar to or higher than those of most developed countries, while on the other hand, the marriage and fertility patterns of this society are much more conservative. Moreover, men's labor force participation rates in this society are much lower than in other developed countries, but men are still regarded as the primary breadwinners, while women are regarded as the secondary breadwinners.

In line with the income or income-pooling hypotheses, our findings suggest that women's earnings increase their odds of marrying. Nonetheless, this is only up to a certain threshold, since the odds of marriage for women with the highest earnings in the salary distribution of women are lower than the odds for women whose salary is in the 60th-80th percentiles of this distribution. Therefore, two mechanisms may still be relevant in Israel: the "income-pooling" effect, which leads to marriage odds that increase with income, though perhaps to a lesser extent at higher levels due to the

decreasing marginal utility of income; and the "independence" effect, which dominates at the highest levels of income. The resulting inverse U-shaped effect of women's income is actually a byproduct of the dualism which characterizes Israeli society. The fact that Israeli women are expected to be active in the labor market, not only to maintain high standards of living, but also as an economic necessity, yields an income or income-pooling effect of women's salary. However, since women are mostly regarded as secondary breadwinners and are expected to combine work and family life, high-achieving women are either less attractive for marriage, or marriage is less attractive to them because it could interrupt their career.

The findings regarding the negative effect of employment instability are also in line with the income hypothesis or the income-pooling hypothesis, and point to the importance of women as potential breadwinners. Interestingly, life-course change analyses suggest that, although an increase in women's earnings increases their odds of marrying, in the year of marriage, there is a counter effect of marriage on women's economic activity, and women tend to reduce their economic activity in anticipation to marriage or due to marriage itself. That is why the highest odds of marriage are for women who move from stable employment to unstable employment. Possible explanations for this reduction in economic activity prior or right after marriage include migration within Israel or childbearing immediately following marriage, both of which affect the economic opportunities of these women. These findings suggest the importance of utilizing information on lagged economic activity when analyzing the transition to first marriage in future research.

The results for the men's sample show that, in line with the men's economic stability hypothesis, higher earnings for men increase their odds of first marriage, while economic instability reduces their odds. These effects are stronger among men than among women. These findings suggest the greater relevance of men's rather than women's economic status in the decision to marry for the first time, as implied by Oppenheimer's (1988) theory. Moreover, a comparison between the two periods points to the growing positive relationship between men's earnings and economic stability, and the transition to first marriage in a society where, despite the reduced labor force participation rates of men (Dahan 2007), they are still regarded as primary breadwinners. The analyses of life-course changes also support the men's economic stability hypothesis, and show that improvement in the earnings in the years prior to marriage increases men's odds of first marriage. In addition, men who have had stable employment in two consecutive years have the highest probability of first marriage relative to men who have had unstable employment in two consecutive years. The fact that women reduce their economic activity in the year of marriage while men maintain stable employment also points to the possible higher importance which is attributed to men's economic activity in the decision to first marry.

As for the effects of education, our results show that, for both men and women (in the later period), higher accumulated years of education increase the odds of first marriage, controlling for enrollment in education. Nonetheless, it was found that enrollment in education in a particular year reduces the odds of first marriage in that year; therefore, enrollment in education causes a delay in marriage. The positive effect of years of education and the negative effect of enrollment in education on transition to marriage, for both men and women, support the search hypothesis. On the one hand, a period of enrollment in education is a period in which the process of mate selection is in process, since it is a situation in which many single people with relatively similar attributes (age, social background, subjects of interests, etc.) meet. On the other hand, as long as the educational accumulation process is not over, there is still uncertainty as for the future achievements and attributes of the potential spouse. Therefore, enrollment in education delays marriage. Nonetheless, as soon as educational accumulation is over, this attribute serves as one of the criteria for selection in the search process, and make more educated men and women more attractive in the marriage market. The results of the longitudinal analyses show that the highest odds of marriage are for men and women who were not enrolled in education in two consecutive years. Moreover, the lowest odds of marriage are for men and women who were enrolled in education in year *t-1,* but who are not enrolled in education in year *t*. These two findings indicate that enrollment in education may postpone marriage for at least two years after educational accumulation is completed, maybe due to the time it takes men and women to achieve stable employment following educational completion. As has been noted in other studies (Blossfeld 1995; Blossfeld and Jaenichen 1992; Raymo 2003), the opposite effects of years of education and of school enrollment on the transition to first marriage make the inclusion of these two different variables crucial in the analysis of the effect of education on the transition to marriage.

The decline in the negative effect of school enrollment between the two periods for both men and women may be due to the expansion of education, and to the increase in educational attainment among Jewish men and women in Israel over the years. Men and women who want to establish a family may decide to marry during their prolonged studies, and this trend will decrease the negative effect of the enrollment coefficient in the later period.

The findings concerning the limited positive effect of women's earnings on the transition to first marriage among the Jewish population in Israel are in line with research which identified the mediating effect of the level of gender role differentiation in the society on the relationship between women's economic activity and the transition to first marriage on the micro level (Blossfeld 1995; Ono 2003; Raymo 2003). Despite the fact that women are active in both the public and the private spheres, the traditional characteristics of this society, including the centrality of the family and high fertility,

make the positive effect of women's economic independence on transition to marriage limited. In this society, women are expected to participate in the labor force and contribute to the family's income, not only in order to increase the family's standard of living, but also in order to prevent their families from falling into poverty (Stier and Lewin 2002). Nonetheless, this expectation only holds up to the point at which the balance between work and family is violated. At the macro level—and in line with Blossfeld's (1995) diagnosis that, in the interplay between economic development, changes in values, and demographic behavior; the lagging of societal norms behind economic development postpones changes in demographic behavior—the Israeli case also demonstrates that, despite its economic development, and due to its relatively traditional culture and values, changes in marriage trends in this society are postponed.

7. Acknowledgements

Corrections:
On January 28, 2013 a typing mistake was corrected on page 947.

References

Allison, P.D. (1995). *Survival analysis using the SAS system: A practical guide*. Cary, NC: SAS Institute.

Allison, P.D. (1999). Comparing logit and probit coefficients across groups. *Sociological Methods & Research* 28(2): 186-208. doi:10.1177/0049124199028002003.

Allison, P.D. (2009). *Fixed effects regression models*. LA, London, New Delhi, Singapore, Washington DC: Sage.

Allison, P.D. and Christakis, N.A. (2006). Fixed effects methods for the analysis of nonrepeated events. In: Stolzenberg, R. (ed.). *Sociological Methodology 2006*. Oxford, UK: Wiley-Blackwell: 155-172.

Almog, O. (1997). *The Sabre – A profile*. Tel-Aviv: Am Oved [Hebrew].

Anson, J. and Meir, A. (1996). Religiosity, nationalism and fertility in Israel. E*uropean Journal of Population* 12: 1-25. doi:10.1007/BF01797163.

Becker, G.S. (1991). *A treatise on the family*. Cambridge, Mass.: Harvard University Press.

Becker, G.S., Landes, E.M., and Michael, R.T. (1977). An economic analysis of marital instability. *Journal of Political Economy* 85(6): 1141-1187. doi:10.1086/260631.

Berkovitch, N. (2001). Citizenship and motherhood: Women's status in Israel. In: Peled, Y. and Ofir, A. (eds.). *Israel: From mobilized to civil society*. Jerusalem: The Van Leer Institute and Hakibbutz Hameuchad: 206-243 [Hebrew].

Bertrand, M., and Mullainathan, S. (2001). Do people mean what they say? Implications for subjective survey data. *The American Economic Review* 91(2): 67-72. http://www.jstor.org/stable/2677735.

Blossfeld, H.-P. (1995). Changes in the process of family formation and women's growing economic independence: A comparison of nine countries. In: Blossfeld, H.-P. (ed.). *The new role of women: Family formation in modern societies*. Boulder: Westview Press: 3-32.

Blossfeld, H.-P. and Huinink, J. (1991). Human capital investments or norms of role transition? How women's schooling and career affect the process of family formation. *American Journal of Sociology* 97(1): 143-168. doi:10.1086/229743.

Blossfeld, H.-P. and Jaenichen, U. (1992). Educational expansion and changes in women's entry into marriage and motherhood in the Federal Republic of Germany. *Journal of Marriage and Family* 54(2): 302-315. doi:10.2307/353062.

Blush-Kleinman, V. and Sherlin, S. (1999). Cohabitation among young adults in Israel. *Society and Welfare (Hevra ve revaha)* 4: 461-484 [Hebrew]

Bracher, M. and Santow, G. (1998). Economic independence and union formation in Sweden. *Population Studies* 52(3): 275-294. doi:10.1080/0032472031000150466.

Castro Martin, T. and Bumpass, L.L. (1989). Recent trends in marital disruption. *Demography* 26(1): 37-51. doi:10.2307/2061492.

Central Bureau of Statistics (1995). 1995 Census of Israel. Jerusalem: State of Israel.

Central Bureau of Statistics (2004). Statistical abstract of Israel 2004. Jerusalem: State of Israel.

Central Bureau of Statistics (2009). Statistical abstract of Israel 2009. Jerusalem: State of Israel.

Cherlin, A.J. (2000). Toward a new home Socioeconomics of union formation. In: Waite, L.J., Bachrach, C., Hindin, M., Thomson, E. and Thornton, A. (eds.). *The ties that bind – Perspectives on marriage and cohabitation*. Hawthorne, NY: Aldine De Gruyter: 126-144.

Clarkberg, M. (1999). The price of partnering: The role of economic well-being in young adults' first union experiences. *Social Forces* 77(3): 945-968. doi:10.2307/3005967.

Cohen, Y., Haberfeld, Y., and Kristal, T. (2007). Ethnicity and mixed ethnicity: Educational gaps among Israeli-born Jews. *Ethnic and Racial Studies* 30(5): 896-917. doi:10.1080/01419870701491887.

Cutright, P. (1974). The civilian earnings of white and black draftees and nonveterans. *American Sociological Review* 39(3): 317-327. doi:10.2307/2094292.

Dahan, M. (2007). Why has the labor-force participation rate of Israeli men fallen? *Israel Economic Review* 5(2): 95-128. http://www.bankisrael.org.il/deptdata/mehkar/iser/10/iser_4.pdf.

Eurostat, European Commission (2003). *Eurostat yearbook 2003 – The statistical guide to Europe*. Luxembourg: Office for Official Publications of the European

Communities. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-CD-02-001/EN/KS-CD-02-001-EN.PDF.

Eurostat, European Commission (2004). *Eurostat Yearbook 2004 – The statistical guide to Europe*. Luxembourg: Office for Official Publications of the European Communities. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-CD-04-001/EN/KS-CD-04-001-EN.PDF.

Eurostat, European Commission (2005). PPP – Methodological Manual. Luxembourg: Office for Official Publications of the European Communities. http://www.oecd.org/dataoecd/59/53/37984314.pdf.

Eurostat, European Commission (2007). *Europe in figures – Eurostat yearbook 2006-07*. Luxembourg: Office for Official Publications of the European Communities http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-CD-06-001/EN/KS-CD-06-001-EN.PDF.

Eurostat, European Commission (2009). *Eurostat pocketbooks – Key figures on Europe – 2009 edition*. Luxembourg: Office for Official Publications of the European Communities. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-EI-08-001/EN/KS-EI-08-001-EN.PDF.

Fogel, N. (2005). *Cohabitation in Israel*. Israel: The Central Bureau of Statistics [Hebrew].

Fogiel-Bijaoui, S. (1999). Families in Israel: Between familism and post-modernism. In: Izraeli, D., Friedman, A., Dahan-Kalev, H., Herzog, H., Hasan, M., Naveh, H., and Fogiel-Bijaoui, S. (eds.). *Sex, gender, politics: Women in Israel*. Tel-Aviv: Hakibbutz Hameuchad: 107-166 [Hebrew].

Friedlander, D. and Feldmann, C. (1993). The modern shift to below replacement fertility: Has Israel's population joined the process? *Population Studies* 47(2): 295-306. doi:10.1080/0032472031000147026.

Friedlander, D., Okun, B.S., Eisenbach, Z., and Lion-Elmakias, L. (2002). Immigration, social change and assimilation: Educational attainment among birth cohorts of Jewish ethnic groups in Israel, 1925-29 to 1965-69. *Population Studies* 56(2): 135-150. doi:10.1080/00324720215923.

Goldstein, J.R. and Kenney, C.T. (2001). Marriage delayed or marriage forgone? New cohort forecasts of first marriage for U.S. women. *American Sociological Review* 66(4): 506-519. doi:10.2307/3088920.

Gshur, B. and Okun, B.S. (2003). Generational effects on marriage patterns: Jewish immigrants and their descendents in Israel. *Journal of Marriage and Family* 65(2): 287-301. doi:10.1111/j.1741-3737.2003.00287.x.

Huinink, J. (1995). Education, work, and family patterns of men: The case of West Germany. In: Blossfeld, H.-P. (ed.). *The new role of women: Family formation in modern societies*. Boulder: Westview Press: 247-263.

Kalmijn, M. and Luijkx, R. (2005). Has the reciprocal relationship between employment and marriage changed for men? An analysis of the life histories of men born in the Netherlands between 1930 and 1970. *Population Studies* 59(2): 211-231. doi:10.1080/00324720500099587.

Kraus, V. (2002). *Secondary breadwinners: Israeli women in the labor force*. Westport, CT: Praeger Publishers.

Lesthaeghe, R. (1995) The second demographic transition in Western countries: An interpretation. In: Oppenheim-Mason, K. and Jensen, A.-M. (eds.). *Gender and Family Change in Industrialized Countries*. Oxford: Clarendon Press: 17-62.

Lewin-Epstein, N. and Semyonov, M. (1992). Modernization and subordination: Arab women in the Israeli labour-force. *European Sociological Review* 8(1): 39-51. http://esr.oxfordjournals.org/cgi/content/abstract/8/1/39.

Mandel, H. and Semyonov, M. (2006). A welfare state paradox: State interventions and women's employment opportunities in 22 countries. *American Journal of Sociology* 111(6): 1910-1949. doi:10.1086/499912.

National Insurance Institute of Israel (NIII). Annual data (1983-1995). Jerusalem: State of Israel.

Ono, H. (2003). Women's economic standing, marriage timing, and cross-national contexts of gender. *Journal of Marriage and Family* 65(2): 275-286. doi:10.1111/j.1741-3737.2003.00275.x.

Oppenheimer, V.K. (1988). A theory of marriage timing. *The American Journal of Sociology* 94(3): 563-591. doi:10.1086/229030.

Oppenheimer, V.K. (1994). Women's rising employment and the future of the family in industrial societies. *Population and Development Review* 20(2): 293-342. doi:10.2307/2137521.

Oppenheimer, V.K. (2000). The continuing importance of men's economic position in marriage formation. In: Waite, L.J., Bachrach, C., Hindin, M., Thomson, E., and

Thornton, A. (eds.). *The ties that bind – Perspectives on marriage and cohabitation*. Hawthorne, NY: Aldine De Gruyter: 283-301.

Oppenheimer, V.K. (2003). Cohabiting and marriage during young men's career-development process. *Demography* 40(1): 127-149. http://www.jstor.org/stable/3180815.

Oppenheimer, V.K., Kalmijn, M., and Lim, N. (1997). Men's career development and marriage timing during a period of rising inequality. *Demography* 34(3): 311-330. doi:10.2307/3038286.

Peres, Y. and Katz, R. (1991). The family in Israel: Transition and continuity. In: Shamgar-Handlman, L. and Bar-Yosef, R. (eds.). *Families in Israel*. Jerusalem: Academon: 9-32 [Hebrew].

Raymo, M.J. (2003). Educational attainment and the transition to first marriage among Japanese women. *Demography* 40(1): 83-103. doi:10.1353/dem.2003.0008.

Rogers, S.J. (2004). Dollars, dependency, and divorce: Four perspectives on the role of wives' income. *Journal of Marriage and Family* 66(1): 59-74. doi:10.1111/j.1741-3737.2004.00005.x.

Santow, G. and Bracher, M. (1994). Change and continuity in the formation of first marital unions in Australia. *Population Studies* 48(3): 475-496. doi:10.1080/0032472031000147986.

Stier, H. and Lewin, A. (2002). The influence of women's employment on poverty in Israel. *Social Security* 62: 28-48 [Hebrew].

Sweeney, M.M. (2002). Two decades of family change: The shifting economic foundations of marriage. *American Sociological Review* 67(1): 132-147. doi:10.2307/3088937.

Teachman, J. (2007). Race, military service, and marital timing: Evidence from the NLSY-97. *Demography* 44(2): 389-404. doi:10.1353/dem.2007.0018.

Thornton, A., Axinn, W.G., and Teachman, J.D. (1995). The influence of school enrollment and accumulation on cohabitation and marriage in early adulthood. *American Sociological Review* 60(5): 762-774. doi:10.2307/2096321.

Toren, N. (2003). Tradition and transition: Family change in Israel. *Gender Issues* 21(2): 60-76. doi:10.1007/s12147-003-0017-9.

Xie, Y., Raymo, J.M., Goyette, K., and Thornton, A. (2003). Economic potential and entry into marriage and cohabitation. *Demography* 40(2): 351-367. doi:10.1353/dem.2003.0019.