

# Pride and Prejudice: Evidence from the "Promised Land"\*

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## Abstract

There are large and persistent ethnic-related disparities among Israeli-born Jews on many indicators of social welfare and economic success. We use non-random sorting into interethnic marriage and Sephardic-Ashkenazi variations in persons' surnames to evaluate the causal impact of Sephardic affiliation on labor market outcomes. Using the Israeli Census of 1995, we estimate the effect of a Sephardic affiliation on wages by comparing the log hourly wages of Israeli Jewish males born to Sephardic fathers and Ashkenazi mothers (SA), who are more likely to carry a Sephardic surname, with the outcomes of Israeli Jewish males born to Ashkenazi fathers and Sephardic mothers (AS). We find that SA workers earn significantly less than their AS counterparts, despite having better educational attainment, higher scores on cognitive tests, and higher levels of parental education and earnings, suggesting that our estimates provide lower bounds for the impact of ethnic affiliation on wages. Finally we utilize the custom of women adopting their husbands' surname upon marriage to disentangle perceived origin from actual ethnicity. Consistent with our interpretation of the results for males, we find that it is fathers-in-law's ethnicity rather than father's

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ethnicity that matters; we find no differences between the hourly wages of AS and SA women who are as likely to carry a Sephardic surname, as both groups marry Sephardic and Ashkenazi men roughly in equal proportions; we also find that Ashkenazi women married to Sephardic men earn less than their Sephardic counterparts despite having better educational attainment and being married to higher paid and better educated spouses.

## 1 Introduction

Half a century after Becker's (1957) seminal work on the economics of discrimination and prejudice and the pioneering work by Phelps (1972) and Arrow (1973) on theories of statistical discrimination and its self-confirming effects (Loury, 1977, 1981)<sup>1</sup>, it is well recognized that ethnic diversity has profound and far-reaching implications on social welfare and economic outcomes, both within societies - by affecting the relative economic outcomes of different groups, and between economies - by influencing national rates of economic growth.<sup>2</sup>

Today, four decades after the passage of *Brown v. Board of Education*, the Civil Rights Act and related anti-discrimination legislation of the 1960s, there are still large disparities between Blacks and Whites in the United States on many indicators of social and economic outcomes, including educational attainment (Jencks and Phillips 1998), earnings (Bound and Freeman, 1992; Smith and Welch 1989), and health (Chandra and Skinner, 2003; Almond, Chay, and Greenstone, 2008).

Most micro-empirical studies on labor discrimination focus on social and economic disparities between black and whites in the United States. A large body of research (summarized in Altonji and Blank, 1999; Neal, 2007) documents, according to available measures, that blacks are less skilled than whites and earn less than their white counterparts. Yet the source of differences in educational attainment, wage rates and earnings is not well established.

Ethnic stereotypes and group differences in educational attainment, earnings, and social outcomes are not limited to the United States. The Jewish society in Israel is characterized by an ethnic cleavage commonly recognized on the basis of geo-cultural

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<sup>1</sup>This early work was followed by Durlauf (1996) and Benabou (1996), who emphasized the feedback impact of pre-labor market discrimination on the accumulation of human capital by future generations, and also Coate and Loury (1993), who studied the implications of statistical discrimination through self-fulfilling prophecies when information is imperfect.

<sup>2</sup>Easterly's and Levine (1997) documented the correlation between country-level ethnic diversity and a range of economic and public policy outcomes from 1965-1990.

origin between two groups: those of European or American descent, largely the "Ashkenazim" ("Ashkenaz" meaning "Germany" in Medieval Hebrew, denoting their European origin), the dominant group in Israeli society; and the Asian-Africans, largely the "Sephardim" ("Sepharad" meaning "Spain" or "Iberia" in Hebrew, denoting their Spanish and Portuguese origin).<sup>3</sup> In modern Israeli Hebrew, the term "Sephardim" typically refers to Jews of Arabic or Persian descent, whereas, the term "Ashkenazim" refers to descendants of Jews from Germany, Poland and Austria and is often applied to all Jews of European background living in Israel.<sup>4</sup>

Despite religious similarities, integration through the educational system, joint military service and "collective consciousness," as well as genetic similarities between Ashkenazi and Non-Ashkenazi Jews<sup>5</sup>, there are large and persistent ethnic-related disparities among Israeli-born Jews on many indicators of social welfare and economic success, including educational attainment (Lewin-Epstein and Semyonov, 1991; Cohen and Haberfeld, 1998), earnings (Haberfeld and Cohen, 2007), juvenile delinquency and adult criminal involvement (Fishman et al., 1987; Ajzenstadt and Borowski, 2005). By the late 1990s, half a century after the establishment of the state of Israel, the "Sephardic-Ashkenazi" wage gaps had become as large as the black-white wage gaps in the United States. According to the latest Israeli census data (1995), Israeli-born Jews whose fathers were born in Asia or Africa ("Sephardim") earned only two-thirds the wages of their American-European ("Ashkenazim") counterparts, and 10 percentage points less after conditioning on education, potential experience, and region of residence (Table 1). These figures are similar to the black-white wage gaps in the United

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<sup>3</sup>Ethnicity is a central dimension in Israel. In fact Israel (within the 1967 borders) can be described most succinctly as dual (see Lewin-Epstein and Semyonov, 1986) on two levels: Israeli Jews versus Israeli Arabs, and, within the Jewish population, "Ashkenazim" and "Sephardim," as well as between secular and Orthodox Jews.

<sup>4</sup>For religious practice, Jews of these communities are considered to be "Sephardim", meaning "Jews of the Spanish rite". In the same way, Ashkenazim, means for religious purposes, "Jews of the German rite", whether or not their families actually originate in Germany.

<sup>5</sup>The emerging genetic picture, from recent research using maternally-inherited mitochondrial DNA, points to DNA similarities between Ashkenazi and Non-Ashkenazi Jews. See Behar, Metspalu, Kivisild, Achilli, Hadid, Tzur, Pereira, Amorim, Quintana-Murci, Majamaa, Herrnstadt, Howell, Balanovsky, Kutuev, Pshenichnov, Gurwitz, Bonne-Tamir, Torroni, Villems, and Skorecki, "The Matrilineal Ancestry of Ashkenazi Jewry: Portrait of a Recent Founder Event." *American Journal of Human Genetics* 78 (2006): 487-497. Genetic data also demonstrate the Middle Eastern origin of the Ashkenazim, who share specific alleles with other Middle Eastern Jewish and non-Jewish groups. Southern and Central European populations subsequently contributed other alleles to the Ashkenazim. For example, disequilibrium analysis of human leukocyte antigens DR and DQ indicates that Ashkenazi Jews are most closely related to other Jews, next most closely to other Mediterranean populations, and less closely to Central Europeans, though carrying some Central European alleles. See Kelly Owens and Mary-Claire King, "Genomic Views of Human History" *Science* 286, 451 (1999).

States during the mid 1990s, as reported by Altonji and Blank (1999).<sup>6</sup>

The large disparities in economic success are well-reflected in the marriage market.<sup>7</sup> Most marriages are within the "Ashkenazi" and the "Sephardic" groups (Goldscheider, 2002; Table 3). Similar to the US, the odds of interethnic union increase with couples' educational attainment (Qian, 1997 for the US) and there is less ethnic disparity in measures of educational attainment and economic success among the population in interethnic couples. Throughout the last centuries the Ashkenazim and Sephardim developed distinct cultural traditions, reflected in religious practice and the use of different international "Jewish" languages ("Yiddish" and "Ladino" spoken by Ashkenazi and Sephardic respectively).<sup>8</sup>

One of the most notable ethnic-cultural characteristics in modern Israel is a person's family name. Family names have great importance in Judaism, as they often indicate a person's genealogy or place of birth. Sephardic and Ashkenazi Jews have different and distinct surnames passed from father to son. Today, most Jewish family names in Israel are either Sephardic or Ashkenazi. Although Israeli Jews of mixed background are increasingly common, partly due to intermarriage between Ashkenazi and non-Ashkenazi partners, a person's last name is still a fair proxy for his or her ethnic affiliation, as the vast majority of unions are between individuals of the same origin. An illuminating example of the popular association of ethnic-related surnames with economic outcomes and social success is the "Buzaglo test." The "Buzaglo test", a term coined by Aharon Barak in 1976, then Attorney General and later Israeli Chief Justice, is used to determine whether public figures, when accused or suspected of a crime, are treated in the same manner as Buzaglo - a lower class Sephardic citizen - would have been treated. Buzaglo - a typical Moroccan-Jewish last name - has long been a placeholder for a simple lower-class citizen.

The ethnic-origin-related genealogy of family names passed from father to son and the non-random sorting into interethnic unions within the Israeli Jewish society provides an informative setting for studying the role of stereotypes and prejudice in Israeli labor markets. Using offspring born to mixed couples, we form treatment and comparison groups that possess *similar* measures of cognitive achievement, educational attainment and family background - but *different* ethnic surnames. Israeli Jews born

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<sup>6</sup>Altonji and Blank (1999) find that in 1995 black male workers earned about 20 percent less than white male workers if no controls were included and 12 percent less once education, potential experience and region were controlled.

<sup>7</sup>"Ethnicity" is one of the top 10 characteristics on the popular Jewish singles network JDate.com.

<sup>8</sup>The best-known of these differences relates to the holiday of Passover, where Sephardic Jews may eat legumes, rice, corn, peanuts and beans, while Ashkenazi Jews prohibit these foods.

to Sephardic fathers and Ashkenazi mothers (SA) are more likely to carry a Sephardic surname and be perceived as Sephardic by the labor markets than Israeli Jews born to Ashkenazi fathers and Sephardic mothers (AS). By comparing the labor market outcomes of Israeli Jews born to Sephardic fathers and Ashkenazi mothers (SA) with the labor market outcomes of their "Ashkenazi" counterparts (AS) we aim to shed light on the impact of prejudice and ethnic stereotypes on labor market outcomes of equally productive members of a society.

Recent studies examined the impact of distinctively ethnic names on labor market opportunities and life cycle outcomes. While field experimental studies that use name labels to manipulate perception found that resumes with traditional names are substantially more likely to lead to job interviews than identical resumes with distinctively minority-sounding names (Jowell and Prescott-Clarke, 1970; Brown and Gay, 1985; Bart et al., 1997; Bertrand and Mullainathan, 2004), Fryer and Levitt (2004) recently found no evidence that proxies for pay are worse for those with ethnic names after controlling for social background. As pointed out by Heckman (1998), it was Becker's (1957) insight that the impact of ethnic-related discrimination is determined by prejudice and stereotypes by firms that employ ethnic workers, rather than by the average taste for discrimination. Hence, despite mounting experimental evidence suggesting that ethnic names serve as a hindrance in the labor market, the presence of discriminatory employers may not be sufficiently large to affect job market outcomes across the board. Since neither study evaluates the impact of ethnic names on labor market outcomes, the extent to which ethnic disparities in pay reflect discrimination is yet to be conclusively determined.

Using the Israeli Census of 1995, the first to contain both fathers' and mothers' country of birth (for those born in Israel), we estimate the impact of ethnic affiliation within the Israeli Jewish society on pay by comparing the log hourly wages of Israeli Jews born to SA parents with the wages of Israeli Jews born to AS parents.

Sorting into interethnic marriages is exogenous neither to peoples' human capital nor to their labor market outcomes (Becker 1973, 1974). Assortative mating on measures of economic success and human capital suggest that ethnic-related differences among those who choose to marry outside their ethnic group should be much smaller than measured ethnic gaps in the population. Consistent with Becker's theory, recent studies find that interracial marriage tends to be educationally homogenous (Qian 1997). This also holds for Israeli Jewish society. We find that among interethnic couples, such gaps are remarkably smaller. Offspring of mixed couples fall in between

AA and SS on a host of family background and achievement characteristics, similar to recent findings in the US (Fryer et al. 2008). Yet family background and academic achievement indicate that the contrast between those born to Sephardic fathers and Ashkenazi mothers, the "treatment group," and their "Ashkenazi-Sephardic" counterparts, the "comparison group," provides a fair setting for estimating the causal effect of ethnic affiliation, signaled by family names, on workers' wages. Sephardic fathers and Ashkenazi mothers in mixed couples achieve higher levels of education and earn more than their mixed-couple AS counterparts. Offspring to Sephardic fathers and Ashkenazi mothers have (slightly) better educational attainment and do better on cognitive achievement tests than their "Ashkenazi-Sephardic" peers. Thus, it would be safe to conclude that the treatment-control contrast within Israeli Jews born to interethnic unions reflects a lower bound for the impact of ethnic affiliation on wages.

Hence it is the *non-random sorting* into marriage - a cornerstone of marriage economic theory - that generates treatment (SA) and control (AS) groups. With this setup in mind we turn to the data. We find that full-time, full-year Israeli male workers born to Sephardic fathers and Ashkenazi mothers (SA) earn about 8 to 10 percent less than their Ashkenazi counterparts (AS), which accounts for most of the "unexplained" ethnic gap in pay between offspring born into intra-ethnic unions.

A large body of research documents how social networks serve as important sources of employment information (Rees, 1966; Montgomery, 1991; Munshi, 2003), particularly in migrant communities (Borjas, 1992). The social network not only finds jobs for its members, it also channels them into higher-paying occupations. Indeed, AA workers are overrepresented in better-paid occupations than all other groups. Yet, SA are placed in higher-paying occupations than their AS counterparts. Accounting for occupations fixed effects we find the hourly wage gaps to be slightly larger.

The gap in pay might reflect other factors than discrimination. Although all available measures indicate that SA perform better on cognitive achievement tests than their AS counterparts, this may not be true for non-cognitive traits. Israeli Jews of European-American origin are more likely to practice a secular western life style than Israeli Jews of Asian-African origin. Sephardic and Ashkenazi Jews who migrated to Israel from Asia or Africa may possess different norms and beliefs than those who migrated from Europe or America. Recently, Fernández and Fogli (2006) and Fernández (2007) showed that a woman's heritage, proxied by her parents' country of origin, has a non-negligible impact on fertility and labor supply among second-generation American women. Hence, Sephardic-Ashkenazi wage gaps might reflect latent cultural differences

rather than ethnic-based discrimination.

Although our setting focuses on the offspring of inter-ethnic unions, the experience of growing up in an AS family might be different than the experience of being raised by a Sephardic father and an Ashkenazi mother (SA). We find that Sephardic Jews are more likely to observe traditional religious practices than their European-American counterparts. Nevertheless we find no difference in our proxies for religious practices between the AS and the SA groups.

Finally, we utilize a common tradition in many cultures, which is the custom of women adopting their husbands' last names upon marriage, to disentangle perceived origin from actual ethnicity. If labor markets discriminate on the base of perceived ethnic affiliation, Ashkenazi women married to Sephardic men should earn less their mixed-union counterparts, as wages should not be associated with fathers' origin if women marry equally outside their fathers' ethnic groups. Using the 1995 census data we find that women born to mixed couples tend to marry men from their fathers' and mothers' ethnic groups in almost equal proportions. While we find substantial crude and residual wage gaps between AA and SS working women, we find no differences between the mean wages of AS and SA working women. Last but not least, we find remarkably similar patterns to those obtained among men when the population of married women is classified by fathers' and fathers'-in-law origin rather than their parents' ethnicity. Ashkenazi women married to Sephardic men earn less than their Sephardic-Ashkenazi counterparts despite having better educational attainment and being married to higher paid and better educated spouses. These findings are consistent with the interpretation that the measured gap in men's wages between SA and AS workers reflects discrimination based on ethnic affiliation signaled by surname.

Experimental studies had used name labels to manipulate perception, including in Israeli context. Fershtman and Gneezy (2001) found systematic mistrust toward Sephardic Jews, in a set of laboratory experiments in which "Sephardic" and "Ashkenazi" sounding-names were employed to signal ethnicity.

Our study, however, is the first to utilize the genealogy of surname and non-random sorting into interethnic unions, that occurs in other cultures as well, to design treatment-comparison groups that puts a wedge between persons' ethnic origins and her perceived ethnicity by labor markets. Our setting uses a fair source of variation to evaluate the impact of ethnic discrimination on pay.

The next section provides a brief overview of ethnic diversity within Israeli Jewish society and some background on Ashkenazi and Sephardic surnames. In sections III

and IV we describe the data sets we use and preview our rigorous analysis with a set of stylized facts about Sephardic-Ashkenazi wage gaps over time and generations. The econometric framework for the empirical analysis is laid out in Section V. Section VI provides evidence on family background, cognitive achievement and educational attainment by parents. In section VII we report the estimated impact of Sephardic affiliation on wages and provide an explanation for the underlying mechanism. Section VIII takes a glance at alternative explanations. Section IX utilizes the gender-specific linkage between father and father-in-law ethnicity to further evaluate the impact of ethnic discrimination on pay. The final section concludes.

## **2 A Brief Background of the Ethnic Diversity within Israeli Jewish society**

Ethnicity is a central dimension of Israeli society. Israel is a multi-ethnic society with three main levels of segregation: (i) Jews and non-Jews (mostly Arabs); (ii) Jews of European or American origin (Ashkenazim) and Jews of Asian or African descent (Sephardim); and (iii) secular and Orthodox Jews. In this paper we focus on the segmentation within Israeli secular society between Jews of European or American descent and Jews of Asian or African origin.

### **Ethnicity and migration to Israel**

Ashkenazi Jews were the first Jews to settle in Israel, and they came mainly from Eastern European countries. Most Sephardic Jews arrived after Israel achieved statehood and came mainly from Muslim countries of the Middle East and North Africa. In May 1948, the newly established state of Israel had about 600,000 Jews, primarily foreign-born and of Ashkenazi origin. In the following 3 years, the Israeli Jewish population more than doubled, as survivors of the Jewish Holocaust in Europe and Jewish residents of Arab countries in Asia and North Africa immigrated to the state of Israel (Table A1). Since the late 1950s the two Jewish groups have been roughly equal in size. During the 1990s Israel experienced mass migration from the former USSR following the collapse of the "Iron Curtain". Since 1989, about one million Russian immigrants arrived in Israel, increasing its population by more than 15 percent during the 1990s. By the mid 1990s, about half of Israeli Jews aged 22 to 65 were born in Israel (see appendix Figure W1), the vast majority of whom were born to parents who immigrated to Israel (appendix Figure W2).



## **Economic and social ethnic gaps**

The social, economic, and cultural assimilation of most Ashkenazi immigrants in Israeli society was quick and comprehensive. By contrast, Sephardic immigrants failed to close the socioeconomic gap between themselves and other groups. For instance, in the mid 1950s, less than a decade after the establishment of the state of Israel, the average Jewish male born in either Asia or Africa earned less than 60 percent of the average Jewish male born in either Europe or America (Hanoach, 1961; Ben-Porath, 1986). While by the late 1970s and early 1980s the educational attainment and earnings of Ashkenazi immigrants were no different from those of native-born Israelis or settlers from the pre-state period (Boyd, Featherman and Matras 1980), Sephardic immigrants from Asia or Africa failed to achieve parity with their Ashkenazi counterparts. Unlike cases in other immigrant societies (Borjas 1990), the gaps have not narrowed over generations.

A large body of research documents persistent ethnic-related gaps among Israeli-born Jews on many indicators of social welfare, including educational attainment, (Lewin-Epstein and Semyonov, 1991; Cohen and Haberfeld, 1998; Dahan et. al. 2003) earnings (Haberfeld and Cohen, 2007), juvenile delinquency, and adult criminal involvement (Fishman et al. , 1987; Ajzenstadt, 2005). While the poor outcomes of first generation of "Sephardim" immigrants have often been attributed to low levels of economic development in source countries (Eisenstadt, 1954; Shuval 1963; Semyonov and Lerhental, 1991) or lack of personal ties with those who controlled resources (Semyonov and Tyree, 1981), the socioeconomic gaps among the second generation (Amir, 1987; Mark 1994; Yitchaki and Schechtman, 2009) are challenging and intriguing.

Ethnic segregation within the Israeli Jewish population is also reflected outside of labor markets. As in the United States, neighborhoods segregated by ethnic origin are not limited to immigrants, and most marriages are within ethnic groups (Goldscheider, 2002). It is thus not surprising that "ethnicity" is one of the top 10 characteristics on the popular Jewish singles network JDate.com.

## **Surnames and ethnicity**

Family names are of great importance in Judaism, as they often indicate a person's genealogy or origin of family (Kaganoff, 1977). Among Sephardic Jews, a surname may be derived from a person's home town, as Toledano (from Toledo), Alfasi (from Fez), Mizrahi (from the east), or Levanti (from the Levant). They may also be derived

from the name of an important ancestor, or even refer to historical figures such as King David (Ibn Daoud is son of David). A common prefix is Ibn, which means "son" in Arabic; thus, Ibn Malka is "the son of Malka" (queen), and a person who carries the name Ibn Shaltiel is a descendent of Shaltiel.

Most Ashkenazi last names are derived from three sources. The first is genealogy: Aharonson is the son of Aharon, Abramson is son of Abram, and so on. The second source is historical residence, such as Rotenberg (family from Rotenberg). The third source is personal characteristics, such as Gross (Large), Klein (small), Weiss (white). Personal characteristics also include professions historically common to the family, e.g., Schneider (tailor). Generally speaking, Sephardic and Ashkenazi Jews have different and distinct names. The only exceptions are probably Cohen and Levi, which are carried by persons of both groups. By the early 2000s, the vast majority of common Jewish family names in Israel were either Sephardic (e.g., Mizrachi, Peretz, Biton Dahan, Azulai, Gabai, Amar, Ochion, Chadad/Hadad, Ben-David, Adrei) or Ashkenazi (Friedman, Katz, Levin).<sup>9</sup>

### 3 The Data

To evaluate the impact of ethnic affiliation on pay we draw on the 20 percent public-use Israeli Census of 1995, the most comprehensive source of demographic and socioeconomic data on Israel's population and the first to contain both fathers' and mothers' countries of birth (for those born in Israel). We also use data taken from the public-use micro samples from the 1972, 1983 and the linked 1983-1995 sample of the Israeli censuses to provide supplementary background and further evidence for our wage gap analysis. We complement the Census data with the Life History Study of Israeli Men (LHSIM), a stratified national probability sample of Jewish Israeli men born in 1954, which contains information on cognitive ability and religious practice. We describe these sources briefly and provide details on the construction of our analysis samples in the Data Appendix.

Data sets do not provide self-reported ethnic affiliation. Therefore, the Israeli Jewish population is often classified into ethnic groups by a person's country of birth or, for Israeli-born, by their parents' country of origin. The next sub-section provides the classification into ethnic groups by country of birth employed in this study.

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<sup>9</sup>Source: <http://www.britam.org/jerusalem/jerusalem271to300.html>

## Ethnicity and country of birth in the data

We assign Israeli foreign-born individuals to one of two categories: (i) Asia-Africa (the "Sephardim", ASAF) and (ii) Europe-America, which also includes individuals born in Australia, New Zealand or the former USSR (the "Ashkenazim", ERAM). Our main analysis focuses on Israeli-born Jews. We assign those who were born in Israel to parents born outside of Israel into one of four categories: (i) both parents were born in Europe or America (AA); (ii) both parents were born in Asia or Africa (SS); (iii) father was born in Europe or America and mother was born either in Asia or in Africa (AS); and (iv) father was born either in Asia or in Africa and mother was born either in Europe or in America (SA). For comparability with previous studies, we also classify Israeli-born Jews using only father's country of birth into three categories: (i) father born either in Asia or Africa (hereafter ISASAF), (ii) father born either in Europe or in America (hereafter ISERAM) and (iii) father was born in Israel (hereafter ISIS).

## The Israeli Census Data

Our wage analysis utilizes the Israeli Census 20 percent public-use micro sample of 1995. The main sample includes Israeli-born Jews (slightly more than half of the Israeli population in 1995) whose parents were born outside of Israel (70 percent of those born in Israel). These are classified into four sub-groups (AA, SS, AS, and SA) where offspring of mixed couples (AS and SA) are only 5 percent of the main sample. It provides 2202 and 2049 observations in the male and female prime age sub-samples respectively.

Since army service is mandatory in Israel, our sample includes individuals aged 22 to 65, whereas our main prime age sample includes individuals aged 30 to 55. We exclude observations with missing data on age, gender, country of birth and parents' country of birth (for Israeli-born), educational attainment, and place of residence. We classify the population into eight educational categories and 9 localities of residence. Our wage sample excludes self-employed individuals or observations with imputed wages. We focus on full-time (more than 35 work hours per week), full-year (12 month) workers (hereafter FTFY) who worked the entire month for which salary is reported. We trim wage outliers when calculating mean wages by excluding the bottom/top 1st and 99th of the salaried Jewish male FTFY workers wage distribution.<sup>10</sup>

We utilize the 1972 and 1983 20 percent public-use census samples and the 1983-

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<sup>10</sup>We exclude recent immigrants (defined as those who have immigrated within the last five years).

1995 linked samples to depict gaps in educational attainment and earnings between Sephardic (Asian-African) and Ashkenazi (European-American) Jews and provide an overview of marriage outcomes by ethnicity over generations and time. The 1983-1995 joint individual record matches observations from the 20 percent public-use micro samples taken from the 1983 and the 1995 Israeli censuses. As such, it covers approximately 4% of the Israeli population. This data set links young adults in 1995 to their parents in 1983. It enables us to classify the third generation of Israelis, who were 22 to 32 years of age in 1995, into ethnic groups by their grandfathers' origin.

The census data does not provide information on family background other than parents' country of origin. Therefore, we utilize the 1972 census sample, the earliest to contain information on educational attainment and earnings, to construct a parents-offspring file linking children to their parents. To provide a representative sample of the children population we exclude children older than 18 years of age. Therefore the parents-offspring file covers only the 1954-1972 cohorts of birth (who were aged 23 to 41 in 1995). To complement information on persons' family backgrounds we generate a "synthetic parents" file using the 1983 census sample. Assuming that mothers were 20 to 35 years of age when they gave birth, the "synthetic mother" of a person aged 35 in 1995 has the characteristics of the average married woman born between 1925 and 1940, by her continent of origin and her spouse's continent of origin. The "synthetic fathers" have the characteristics of those actually married to "synthetic mothers."

Data processing for the 1972, 1983 and the linked 1983-1995 samples follows the same basic processing employed for the 1995 main sample, when applicable.

### **Life History Study of Israeli Men**

The Life History Study of Israeli Men is a systematic stratified national probability sample of Jewish Israeli men born in 1954 (Matras, Gila, and Bar Haim, 1984). The sample consists of 2,144 men who were randomly selected from the draft list of the army and lived in Israel in 1970. They were interviewed when they were approximately twenty-six years old. The interview data were merged with official military, school and police records. The eighth grade school records (the SEKER test scores) taken from Ministry of Education files were merged for 1,210 respondents. In addition to standard socioeconomic and demographic indicators, the data set contains both father's and mother's country of birth. For all but 5 of the 1,210 respondents, military test scores were retrieved from the military files (Shavit, 1984; Shavit and Featherman, 1988). We use the revised version by Shavit (1994) that includes scores of tests taken by the

respondents before joining the IDF.<sup>11</sup> These include verbal and analytic test scores. Our main sample contains complete information on 1141 observations after excluding those who are foreign-born or have missing demographics.

## 4 A Glance at the Sephardic-Ashkenazi Social, Educational and Wage Gaps

The census micro samples reveal large and remarkably persistent origin-related gaps over three generations of Israeli Jews in educational attainment, pays and social interaction proxy in the share of interethnic unions.

Figure 1a and Figure 1b show the "Sephardic-Ashkenazi" crude and residual wage gaps and the corresponding confidence intervals for three generations of Israeli Jews respectively. Each figure contains three entries. The first reports the wage gap between Israeli Jews born in Asia or Africa (ASAF) and their European-American counterparts (ERAM) as measured among salaried male workers in 1972. The second entry shows the Sephardic-Ashkenazi wage gaps among Israeli-born Jews as measured by the difference between the mean wages of ISASAF prime-aged salaried male workers and their ISERAM peers in 1983. The third entry depicts the wage gaps in the third generation by comparing the mean wages of those whose grandfathers were born in Asia or Africa (ISISASAF) with the wages of their European-American counterparts as measured in 1995 for a sub-sample of males aged 26 to 32.<sup>12</sup> To account for age effects, we report wage gaps among foreign-born (ASAF) and in the second generation (ISASAF) among those aged 26 to 32, as well.

Sephardic male workers earned about 75% of their Ashkenazi counterparts if no controls were included, and slightly less than 90% of their Ashkenazi counterparts, once we controlled for education. This holds for foreign-born, second and third generation, which is classified by father's and grandfather's continent of birth, respectively. The persistent origin-related gap in pay reflects lack of convergence in educational attainment. This gap in educational attainment is wider among third generation Israelis than among second generation, and much wider than the ethnic gaps in education attainment among those born abroad, as measured by matriculation eligibility (BAGRUT)<sup>13</sup>

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<sup>11</sup>We use the revised version (2nd) that was accepted from Shavit in 1994. This version includes scores of tests the respondents went through before joining the IDF. The scores include verbal text score and analytic test score.

<sup>12</sup>There is no direct data on persons' grandfathers' countries of birth. We are able to recover that for any individual observed in 1995 whose parents were observed in the 1983 sample.

<sup>13</sup>Matriculation eligibility (BAGRUT) is a certification attained by passing a series of national

or by academic degree among high school graduates (Table 2).

Sephardic-Ashkenazi segregation within the Israeli Jewish population is well-reflected outside of the labor markets. While we find that the share of inter-ethnic couples doubled between early 1970s and mid 1990s, almost nine out of ten unions are still intra-ethnic (Table 3).

## 5 The Empirical Approach

Recent attempts to evaluate the impact of labor market discrimination against minorities on wages (Neal and Johnson, 1996; Altonji and Pierret, 2001) aim to control for workers' market productivity by measures of cognitive achievement, which could be affected by market discrimination (Heckman, Stixrud and Urzua, 2006). Indeed, the wage gap between Israeli Jews born to Sephardic fathers and their counterparts born to Ashkenazi fathers might reflect factors other than discrimination based on family name. Following Becker (1973, 1974, 1981) - as well as common knowledge - we view sorting into interethnic marriages as neither exogenous to peoples' human capital nor to their labor market outcomes. The offspring of Ashkenazi couples might have more labor market skills than their counterparts. For this reason we focus on the sub-sample of Israeli Jews born to mixed couples. If Israeli Jews born to Sephardic fathers and Ashkenazi mothers- who are more likely to possess Sephardic names- have similar labor market skills (measured by using educational attainment, cognitive test scores and family background) as their "Ashkenazi-Sephardic" counterparts, then it would be safe to conclude that the treatment-control contrast within Israeli Jews born to interethnic unions truly reflects a lower bound of the impact of ethnicity on wages. In the next sub-section we draw out a simple statistical model and our explicit identifying assumptions.

### The statistical model

Let  $Y_i$  denote the log hourly wage of person  $i$ . For the sake of simplicity, let us assume that people carry either a Sephardic or an Ashkenazi surname. Let  $N_i$  be equal to 1 if person  $i$  posses a Sephardic surname and 0 otherwise. Outcomes are determined by

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exams in core and elective subjects beginning in tenth grade. Most students take the exam during the eleventh and the twelfth grades. A minimum of twenty credit units is required to qualify for a matriculation certificate. Students choose to be tested at various proficiency levels, with each test awarding 1-5 credit units per subject depending on difficulty.

whether person  $i$  possesses a "Sephardic" surname ( $N_i = 1$ ). For simplicity of illustration let us assume that wages are given by a linear-in-the-parameters specification:

$$Y_i = \delta N_i + \beta X_i + \varepsilon_i, \quad (1)$$

where  $X$  is a vector of observed controls,  $\beta$  is the vector of returns associated with  $X$  and  $\varepsilon_i$  represents unobserved (by the econometrician) idiosyncratic person-specific influences on the outcome of interest. The parameter of interest  $\delta$  measures the causal effect of a "Sephardic" surname on outcomes.

Family names have great importance in Judaism, as they often represent a person's genealogy or place of birth. Israeli Jews from Asia or Africa are more likely to possess a Sephardic surname, those from Europe or America are more likely to possess an Ashkenazi name. People choose whether to carry their father's surname in order to maximize their expected utility. If labor markets use surnames as a signal of ethnicity, then it might be costly to have a Sephardic name. Yet it is not a "free lunch" to abandon it either. Social interactions in one's own ethnic community yield lower utility for those who do not carry their family name, as it might signal to their peers that they do not have an affinity to their community (see Fryer and Levitt, 2004). Let  $N^*$  denote the net latent benefit associated with having a Sephardic surname, assuming a linear-in-the-parameters specification:

$$N_i^* = \theta F_i + \nu_i, \quad (2)$$

where  $F_i$  is a binary variable that equals 1 if person  $i$ 's father was born in Asia or Africa and 0 otherwise.  $\theta$  stands for the utility associated with having a Sephardic surname and the error term  $\nu$  is such that  $\nu \perp\!\!\!\perp F$ . Note that  $\varepsilon$  and  $\nu$  might be correlated which would mean that persons' surnames are not randomly assigned *within* ethnic groups. People possess a Sephardic surname if and only if the benefits exceed the costs, which means:

$$N_i = 1(N_i^* > 0), \quad (3)$$

where 1 is an indicator function, i.e.  $1(A) = 1$  if  $A$  is true and  $1(A) = 0$  otherwise. The reduced form relationship between person's name and father's country of birth is:

$$N_i = \gamma(\theta) F_i + \epsilon_i, \quad (4)$$

where  $\gamma(\theta) = \Pr(N_i = 1 \mid \theta, F_i = 1) - \Pr(N_i = 1 \mid \theta, F_i = 0)$ .

Assuming that  $F$  is not correlated with the person-specific wage shocks in the outcome's of interest equation (1) the Wald estimator provides consistent estimates of the "Sephardic" family name effect on wages:

$$\delta = \frac{E(Y_i \mid F = 1) - E(Y_i \mid F = 0)}{E(N_i \mid F = 1) - E(N_i \mid F = 0)}. \quad (5)$$

We do not observe persons' names. (Moreover, in reality, not all surnames can be classified as either "Sephardic" or "Ashkenazi"). Yet, given the well-established association between surnames and ethnic origin it will be fair to *assume* that  $0 < \gamma \leq 1$ . With these identifying assumptions, we obtain a lower bound for the causal impact of "Sephardic" family name on wages by estimating a reduced form statistical model. Substituting (4) into (1), the "reduced form" wage equation exhibits the following linear-in-the-parameters specification:

$$Y_i = \eta F_i + \beta X_i + \mu_i, \quad (6)$$

where  $\mu_i = \delta \epsilon_i + \varepsilon_i$  and  $\eta$  stands for the reduced form impact of father's origin on wages. Assuming that parents' origin has no direct effect on observed characteristics, then the OLS estimator in Equation (6) provides a lower bound for the (negative) causal impact of "Sephardic" surname on wages:

$$p \lim \eta^{OLS} = \gamma \delta \geq \delta, \quad (7)$$

assuming that Sephardic ethnic affiliation does not increase wages, that is  $\delta \leq 0$ .

## 6 Family Background, Cognitive Attainment, Educational Attainment and Occupational Choices by Parents' Origin

With our statistical model in mind, we turn to the data. We precede the wage gap estimation with an overview of a wide range data on demographics, family background and cognitive and academic attainment by parents' origin using the 1995 Israeli census, the parents-offspring and the "synthetic parents" census files, and the LHIM (Life History Study of Israeli Men) data set.



## Educational Attainment

Figure 3 displays measures of educational attainment of prime age Israeli Jews age 30-55 born in Israel whose parents were born outside of Israel. The population sample is classified by parents' origin.<sup>14</sup> We use three measures to proxy for educational attainment: (i) matriculation (BAGRUT) eligibility; (ii) college (or advanced) degree; and (iii) number of school years completed. Figure 3 reports mean group outcomes relative to the average outcomes of the AS group.

Two main findings emerge. There are large and significant differences between the educational outcomes of Israeli Jews born to intra-ethnic unions. AA Israeli-born Jews have higher levels of education than all other ethnic combinations, whereas SS Israeli-born Jews are lagging behind all others. For instance AA males age 30-55 complete about two more years of schooling than their SS counterparts and about one more year of schooling than their interethnic counterparts. These differences are also reflected in matriculation eligibility and post-secondary education. Average matriculation-certificate eligibility of SS is about 25 percent lower than that of AA and 10 percent below that achieved by offspring of interethnic unions. While we find large disparities between AA, mixed union and SS groups' outcomes, we find almost no differences between offspring born to interethnic couples by fathers' origin. The educational attainment of SA Israeli-born Jews is statistically indistinguishable from the outcomes of their AS counterparts.

## Family Background and Parents' Origin

Employed with our parents-offspring census file and the "synthetic parents" sample we take a glance at family background by parents' origin.

We use four measures to proxy for parental backgrounds: (i) years of schooling completed; (ii) matriculation certificate; (iii) college education (or advanced degree); and (iv) log hourly wages. We observe similar patterns using either the parents-offspring file (Figures 4a and 4b) or the "synthetic parents" file.<sup>15</sup> The benchmark group in all figures are fathers born in Europe or America and mothers born in Asia or Africa (parents of AS).

We find notable disparities between the family backgrounds of Jews born in Israel by parents' origin. Similar to individuals' educational attainment, we find large differences between the fathers of AA and SS offspring. European-American men married to

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<sup>14</sup>The figure for 22 to 65 years of age is available in the web version.

<sup>15</sup>Figure available in the web version of this paper.

European-American women have higher educational attainment and earn, on average, more than all other married men. We also find that men born in Asia or Africa who married within their ethnic group earned less and achieved lower levels of schooling, on average, than all other married men. This also holds for mothers' outcomes (see Figure 4b). Yet, while we find almost no differences between the education of AS and SA offspring, we do find systematic differences between their parents (and "synthetic parents"). As Figures 4a and Figure 4b make clear, on average, males who were born either in Asia or in Africa and married European-American women possess higher levels of education and earn more than Asian-African men married to Asian-African women. This also holds for their spouses (in either sample). European-American mothers in SA unions have higher levels of education than Asian-African mothers in AS unions and earn more than their counterparts. Clearly family background of Israeli Jews born to SA unions dominates family environment of their AS counterparts; their parents are better educated and earn more. In fact, by some measures the outcomes of SA couples are statistically indistinguishable from the outcomes of their AA counterparts.

### **Cognitive Test Scores by Parents' Origin**

Schooling and other forms of investment in human capital, particularly in the early stages of children's development, affect performance on cognitive tests (Shavit and Featherman 1988). Early childhood environment is a major predictor of cognitive and non-cognitive abilities (Carneiro and Heckman, 2003), whereas early investment in children yields the largest returns (Cunha and Heckman 2007). There are many reasons why persons with similar educational attainment and family backgrounds may have significantly different skill sets. Neal (2007) finds substantial black-white gaps in cognitive test scores among children, teenagers and young adults, which remained constant or increased in absolute value since the late 1980s. Both cognitive and non-cognitive traits are important for skill formation and labor market outcomes (Heckman and Rubinstein, 2001). Neal and Johnson (1996) find that measures of cognitive achievement account for much of the black-white wage gap. The remarkable similarities between racial gaps in academic achievement in the United States and Israel, as well as the role of cognitive skills in accounting for black-white wage gaps, suggest that differences in cognitive achievement between Sephardic and Ashkenazi-born Jews might be a major source of "unexplained" ethnic wage gaps.

We take advantage of the LHIM data set, a stratified sample of Jewish Israeli men selected from the army draft list born in 1954 to compare test scores on cognitive

achievement tests by parents' origin. In addition to standard socioeconomic data and demographics, the data includes verbal and analytic test scores of respondents administered by the IDF during the recruitment process. We focus on the sample of Israeli-born Jews whose parents were born outside of Israel. We use two classifications of ethnic groups: (i) father's origin and (ii) father's and mother's origins. We report our findings in Table 4.

Table 4 shows the test-scores of Israeli-born Jews by father's and parents' origin. The table contains two panels reporting the standardized tests scores and four columns. The first two columns in the top panel report the average difference in crude and residual analytical test scores between Israeli-born Jews whose fathers were born in Asia or Africa and their European American counterparts, respectively. The next two columns report the ethnic gaps in verbal test scores. Clearly, Israeli-born Jews whose fathers were born in Europe or America do better than their Asian-African counterparts. These results hold even when we account for years of schooling. Next, we take a closer look by father's and mother's origins. Results are found in bottom panel. The omitted group is Israeli-born Jews whose fathers were born in Europe or America and their mothers in Asia or Africa. The first entry reports the difference between the average analytical test scores of the AA group and the mean test score of their AS counterparts. We find that Israeli-born Jews whose parents were both born in Asia or Africa score significantly lower than all others, whereas their European-American counterparts achieve higher scores than others. We also find that the offspring of SA parents do slightly better than their AS counterparts. It is worth noting that, while AS achieve significantly lower test scores than their AA counterparts, we find SA Israeli-born Jews to be statistically indistinguishable from their AA counterparts.

### **Location of Residence and Occupations**

Literature in economics and sociology is replete with evidence pointing to the importance of friends and relatives – networks – as sources of employment information (Montgomery, 1991 provides a summary).<sup>16</sup> This holds both in developing countries, where market imperfections tend to be more severe and pervasive, and in those sectors in modern economies in which markets function imperfectly (Munshi, 2003); this impact is especially strong in migrant communities (Borjas, 1992). The community network not only finds jobs for its members, but also channels them into higher-paying

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<sup>16</sup>For instance, Rees (1966) found that informal sources account for about half all hires in white-collar occupations and for most of all hires in blue-collar occupations.

occupations.

This might be very relevant for the Israeli case. The vast majority of the ASAF Jews that arrived after Israel achieved statehood (see Table A1) were characterized by a more traditional orientation, limited education, large families, and minimal economic resources. The ASAF immigrants were directed by government agencies to peripheral locations and towns located far from well-established urban centers (Semyonov and Tyree, 1981). Furthermore, they lacked personal connections to those in power (Lewin-Epstein and Semyonov, 1986), whereas ERAM Jews held higher positions on all indicators of status and enjoyed more favorable opportunities for achievement (Rosenstein, 1981).

Thus, although offspring of SA parents have better educational attainment, higher scores on cognitive tests, and higher levels of parental education and earnings than their AS peers, they might lack labor market networks, if fathers' origin matters more than mothers' ethnicity. If so, the wage gap might reflect the impact of origin-related networks, reinforced by segregation into well-established and peripheral locations, rather than ethnic or statistical discrimination.

Indeed, origin-related segregation into occupations and places of residence is well noted among Israeli-born Jews. Table 5 describes occupational choices, employment sectors, and residential patterns by parents' origin. The first panel reports occupational profiles, using 1-digit classification. Employment sectors and class of workers are found in the second panel. In the last two panels we utilize the Israeli CBS geographic version of the 20 percent census micro samples and the CBS socioeconomic index to disaggregate locations into five socioeconomic status categories. These panels report locations patterns of synthetic parents and own locations of residence respectively.<sup>17</sup>

Offspring to Ashkenazi parents (AA) are overrepresented in the highly-paid occupations whereas SS workers dominate the lower-paid occupations.<sup>18</sup> AA are more likely to be salaried workers and employed by government agencies, whereas their SS counterparts sort into self-employment more than others. Similarly, AA parents reside in better socioeconomic locations than all other groups, whereas the parents of SS Israeli-born Jews were concentrated in less-developed locations. Offspring of mixed unions have higher socioeconomic status, as measured by their parents' location, and work in higher-paid occupations than their SS peers. The notable segregation into lo-

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<sup>17</sup>The web appendix provides further details regarding the socioeconomic status of locations of residence (Table W2a and W2b).

<sup>18</sup>For each occupation we calculated the average hourly wage of an AA worker. Hourly wages in Table 5 are presented in US Dollars (\$) using 1995 exchange rate.

cations and occupations among offspring of intra-ethnic unions does not hold for their mixed-couples peers. We find that SA reside in similar-status locations and work in slightly better-paid occupations than their AS counterparts.

Hence, educational attainment, measures of family background and common proxies for cognitive skills indicate that Israeli-born Jews whose fathers were born in Asia or Africa and whose mothers were born in Europe or America are at least as skilled as their AS counterparts. This is well-reflected in sorting into occupations. Thus, it would be safe to conclude that the treatment-control contrast within Israeli Jews born to interethnic unions reflects a lower bound for the impact of ethnicity on wages.

## 7 The Impact of Sephardic Surname on Market Pay

Israeli Jews whose fathers were born in Europe or America have better family background; have higher academic achievement, and are engaged in slightly better paid jobs than their AS peers. It would be safe to conclude that the treatment-control contrast within Israeli Jews born to interethnic unions provides a fair estimate of the impact of ethnic affiliation on wages.

Using data taken from the 20 percent public-use micro-files of the 1995 Israeli census, we estimate the mean wages of Israeli-born Jews whose parents were born outside Israel, by fathers' and mothers' origin. The results are found in Table 6. There are two panels and two sections. The top panel reports the ethnic gap in log hourly wages by fathers' origin. The bottom panel provides the crude and residual log hourly wages by fathers' and mothers' origin. The first section in each panel reports our findings for the population sample of FTFY males aged 22 to 65 and the second section focuses on those aged 30-55. The benchmark group includes Israeli-born Jews whose fathers were born in Europe or America and whose mothers were born in Asia or Africa (AS). The first column in each section reports the crude gap. In the two columns we sequentially introduce education and potential experience and residential location and occupational fixed effects. For instance, the first entry in the top panel (-0.476) is the average crude wage gap between Israeli workers whose fathers were born in Europe or America (ISASAF) and ISERAM workers, whereas the first entry in the bottom panel (-0.099) is the average crude wage gap in log hourly wages between SA workers and their AS counterparts.

Two main findings emerge. As one would have expected, wages of offspring to mixed unions fall in between AA and SS workers. Israeli Jews whose parents were

both born in Asia or in Africa (SS, the lowest-paid group), earn about one half of their AA counterparts, the highest-paid group.

Yet, in contrast with a host of background and achievement characteristics we find that Israeli Jews born to fathers from Asian-African origin and mothers from European-American origin (SA) earn about 10 percent less than their AS counterparts. This gap in pay cannot be attributed either to educational attainment, residence, or sorting into better paid occupations; in fact, our estimates indicate that SA workers hold better-paid occupations than AS workers. For instance, while working-age SA workers earn approximately 8 percentage points less than AS workers, accounting for education and potential experience, the mean gap in residual wages is about -0.11 percentage points once occupation fixed effects are included. This holds both for 22 to 65 and to those FTFY workers aged 30-55.

Although AA workers earn more than their AS counterparts and SS workers earn less than their SA peers, if no controls were included, we find almost no differences in pay by mothers' origin once we disaggregate the population according to fathers' origin and education, potential experience, location of residence and occupation were controlled.

Israeli Jews whose parents were born either in Asia or in Africa were reared in home environments with better financial opportunities than Israeli Jews born to Ashkenazi parents. It is thus not surprising to find that AA workers aged 30-55 earn about 9 percentages point more than their SS counterparts when education, potential experience, location of residence and occupation were conditioned out. This gap might reflect an unobserved (to the econometrician) skills gap between these groups. It is thus surprising to find that SA workers earn as little as their SS peers and that AS workers earn approximately as much as their AA peers.

These findings are consistent with the interpretation that labor markets treat the SA as the vast majority of Israeli-born Jews whose fathers were born in Asia or in Africa, the SS group, and labor markets do not distinguish between AS and AA workers who possess the same educational attainment, reside in similar locations and have equally well-paid occupations. This evidence is consistent with the view that, as of the mid 1990s, much of the Sephardic-Ashkenazi residual wage gap reflects discrimination against Israeli-born Jews with Sephardic affiliation, rather than disparities in human capital.

## 8 Alternative Explanations

The pay gap might reflect factors other than discrimination. Although all available measures indicate that Israeli-born Jews whose fathers were born in Asia or Africa and whose mothers were born in Europe or America (SA) perform better on cognitive achievement tests than their AS counterparts, this finding might not hold for non-cognitive traits. For instance, Heckman and Rubinstein (2001) show that while adults with GEDs perform better on cognitive achievement tests than other high school dropouts and as well as ordinary high school graduates, they possess lower levels of non-cognitive skills, which affects their earnings. Recently, Fryer et al. (2008) found that mixed-race adolescents are outliers compared to both blacks and whites when it comes to engaging in risky and anti-social adolescent behavior.

It is well-documented that Israeli Jewish society is segregated by ethnic origin. Moreover, it is common knowledge outside academic journals that Israeli Jews of European or American origin are (on average) more likely to practice a secular western lifestyle than Israeli Jews of Asian or African origin. Sephardic and Ashkenazi Jews who came to Israel from Asia-Africa or from Europe-America, respectively, may possess different norms and beliefs - that is, different cultures. Recently, Fernández and Fogli (2006) and Fernández (2007) showed that a woman's heritage, proxied by her parents' country of origin, has a non-negligible impact on fertility and labor supply among second-generation American women. Children of parents born either in Asia or in Africa might have been exposed to different norms and beliefs than their European-American counterparts. Ethnic wage gaps might reflect cultural differences that affect skill accumulation, rather than ethnic discrimination. Our setting partially accounts for that by focusing on offspring to inter-ethnic unions. Yet, although one might expect cultural differences between SA and AS to be less notable than between AA and SS, the experience of growing up in an AS family might be different than that of being raised by a Sephardic father and an Ashkenazi mother (SA). The wage gap might reflect the impact of other factors than academic and income background (culture) on the formation of market skills rather than the causal effect of discrimination on wages. In the next sub-sections we take a glance at religious practice and fertility as proxies for latent cultural differences in the homes and/or backgrounds of SA and AS Israeli-born Jews.

## Religious Practice by Parents' Country of Origin

The LHIM data provide some insight into measures of religiosity. Interviewees were asked whether their fathers used to keep "kosher" or wore a "kippah".<sup>19</sup> Employed with this information, we take a systematic glance at the data. Table 7a and Table 7b report fathers' and own religious practice by continent of origin respectively. The first entry in Table 7a reports the crude difference in the fraction of fathers keeping "kosher" between Israeli fathers born in Asia or Africa and their European-American counterparts as reported by their offspring. The second entry reports the crude differences in the fraction of fathers who wore a kippah. Israeli fathers born in Asia or Africa are more likely to keep traditional religious practice than their European-American counterparts. The bottom panel in Table 7a takes a closer look at the same outcome, this time disaggregating the population by fathers' and mothers' origin. We find differences in religious practice among those married outside their ethnic groups to be much smaller than the gaps between men in intra-ethnic unions. In fact SAs are slightly less orthodox than their AS peers. As one would have expected, on a host of religious practices, offspring of SA parents are less likely to observe traditional practice than their SS and their AS counterparts. Hence, while these crude measures indicate cultural differences between Ashkenazi and Sephardic Jews born to intra-ethnic unions, we find no difference between the mixed groups.

## Fertility by Parents' Country of Origin

Traditions and customs passed from generation to generation might impact labor market outcomes. Following the pioneering work by Becker and Lewis (1973), the number of children and parental investment per child are perceived as household choice variables reflecting preferences and economic forces. Becker's and Lewis's (1973) quantity-quality trade-off is a channel via which cultural differences among ethnic groups may cause and reinforce disparities in cognitive abilities and non-cognitive traits.<sup>20</sup>

Thus we depict fertility rates by parents' continent of origin. We utilize the "synthetic parents" sample, taken from the 1983 census data, to estimate "synthetic mothers'" fertility rates by "synthetic mother" and "synthetic father" continent of origin. This population sample includes all married women born outside of Israel between

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<sup>19</sup>"Kippah" is a thin, slightly rounded skullcap traditionally worn by observant Jewish men, also known as a "yarmulke."

<sup>20</sup>Recently Fernández and Fogli (2006) show that women's heritage, proxied by her parents' country of origin, has a non-negligible impact on fertility.



1905 and 1945 who were married to Israeli Jews who were themselves born outside of Israel. Fertility rates and the frequency of inter-ethnic marriage might have varied systematically over time. To account for that, we also estimate fertility rates for the sub-sample of women aged 38 to 45 years in 1983. Fertility is measured by the number of own children. The results are found in Table 8. The table contains two panels. The first panel reports the estimated average number of children for the population sample whereas the second panel provides estimates for the sub-sample of women 38 to 45 years of age. The benchmark group in all specifications includes women born in Asia or Africa married to Israeli Jews that were born in Europe or America. The first and second columns in each panel report crude and birth cohort-adjusted fertility gaps respectively. The first entry reports the gap between the average number of children born to an Ashkenazi women married to a Sephardic man and the average number of children in the benchmark group. Women born in Asia or Africa married to men from the same origin have the highest fertility rates (approximately 5 children), whereas women born in Europe or America whose partners were born in Europe or America have the lowest number of children (slightly less than 2.5 children). This also holds after controlling for cohort effects. While we observe large disparities between intra-ethnic unions we find no differences between interethnic couples. The average number of children of an Ashkenazi woman married to a Sephardic man is almost identical and statistically indistinguishable from the average number of children born to their mixed-couple peers. This also holds also when we account for cohort of birth effects and when we restrict the sample to married women 38 to 45 years of age. Hence, we find no differences between AS and SA family background as measured by number of siblings.

## **9 The Impact of Fathers' and Fathers'-in-Law Ethnicity on Women's Pay**

It is a common custom in many cultures that brides adopt the last name of the groom. In Israel, there has long been a patriarchal tradition for a woman to change her surname upon marriage from her birth name to her husband's last name. Since civil marriage does not exist in Israel, and the only institutionalized form of Jewish marriage is the religious one, under the jurisdiction of the Chief Rabbinate of Israel, most weddings are conducted by orthodox rabbis. The rabbi performing the wedding is considered, according to the law, the official marriage registrar. A notice of the marriage is trans-

mitted directly from the regional rabbinate to the Interior Ministry. Although this notice is not sufficient to change the family name of the wife, in practice the change occurs automatically upon marriage.<sup>21</sup> Hence, while Sephardic and Ashkenazi Jews have distinct surnames passed from father to offspring, effectively the genealogy of family names holds after marriage only for men as most Israeli Jewish women routinely change their last names at the time of a legal marriage.

The gender-specific linkage between father and father-in-law’s ethnicity and own surname offers two testable implications. If labor markets discriminate on the base of perceived ethnic affiliation, women’s wages should be less associated with their fathers’ origin than men’s wages, especially if they marry outside of their fathers’ ethnic group in roughly equal proportions. Differences in pay should be larger by fathers’ in law ethnicity than by their own fathers’ origin. With this idea in mind we turn back to the 1995 census data.

We utilize that to further evaluate the impact of ethnic affiliation on pay. We turn back to the 1995 census data. We focus on Israeli-born women 30 to 50 years of age.<sup>22</sup> In this age group four out of five women are currently married and only one out of twenty reports never being married.

### **Parents’ Ethnicity and Women’s Pay: A Placebo Test**

While the vast majority of women aged 30-55 born to intra-ethnic unions marry within their ethnic group, females born to mixed couples tend to marry almost equally in and outside of their fathers’ ethnic groups. About one half of AS women (47%) and slightly less among SA women (43%) marry outside of their fathers’ ethnic groups, indicating that for women, unlike for men, the shares of AS and SA who actually carry a Sephardic surname are roughly equal (see Table 9). Thus markets should be

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<sup>21</sup>Jewish marriage (and divorce) in Israel is under the jurisdiction of the Chief Rabbinate of Israel, which defines a person’s Jewish status strictly according to “halakha,” a collective body of Jewish religious law. The rabbinate’s standards and interpretations in these matters are generally used by the Israeli Interior Ministry in registering marriages and divorces. According to the Israeli law on names (1956), “upon marriage a woman receives her husband’s surname, yet, she has the right, in any time, to add her maiden surname or to keep it”. In practice, however, the Israeli Interior Ministry made it difficult for women keep their maiden names. Therefore in 1996, the Israeli parliament revised the original law of name (revision 3) in a way that does not present any particular option as the benchmark. Orit Kamir provides a detail survey of the history of the Israeli law of names at [http://sitemaker.umich.edu/Orit\\_Kamir/files/namehebrew.pdf](http://sitemaker.umich.edu/Orit_Kamir/files/namehebrew.pdf)

<sup>22</sup>Retirement age in Israel varies by gender. It was 65 for men and 60 for women in 1995. This is reflected in female labor supply at their late 50s. Labor force participation and FTFY employment are much lower for women aged 51 to 55 than for women aged 30 to 50. For this reason we focus on those aged 30 to 50. Results are robust to inclusion of those aged 51 to 55.

unable to distinguish between AS and SA women based on their surnames. If the wage gap between SA and AS men reflects the causal impact of discrimination, we should find much smaller gaps between SA and AS females than among men. Using the statistical specifications employed for working men we estimate mean wages by fathers' and mothers' origin for FTFY working women. The results are found in Table 10. The top panel reports the ethnic gap in log hourly wages by fathers' origin. The first column reports the crude gaps; the second column provides the residual wage gaps accounting for education and potential experience, and the third column controls also for place of residence and occupational fixed effects. The last column replicates the estimated specification reported in the third column for a sub-sample of married women whose father-in-law's origin is available in the data.<sup>23</sup>

As one might expect we find substantial crude and residual wage gaps, yet these are somewhat smaller than those measured among men, reflecting, perhaps, the gender-specific linkage between father and father-in-law's ethnicity and surname. Female workers whose fathers were born either in Asia or in Africa earn about one third less than European-American counterparts, and slightly less than 10 percent of these counterparts, controlling for education (and potential experience). This is well- reflected in the wage gaps between offspring to intra-ethnic unions reported in the second panel. Yet we find almost no difference between the mean wages of AS and SA FTFY working women (bottom panel). SA women earn, on average, the same as their AS counterparts (column i). This holds when we control for educational attainment and potential experience (column ii), as well as accounting for place of residence and occupational fixed effects (column (iii) in the bottom panel). These results are robust to the exclusion of women who currently are not married, or those whose husbands cannot be classified as either Ashkenazi or Sephardic (column iv). While we find that SA men earn about 11 percent less than their AS counterparts, we find no differences between SA and AS women. These findings are consistent with the interpretation that the measured gap in men's wages between SA and AS workers reflects discrimination based on ethnic affiliation signaled by persons' family name.

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<sup>23</sup>This is a sub-sample in which we observe both husbands and wives. We exclude those women whose husbands' and their fathers'-in-law were born in Israel and thus cannot be classified into as either Ashkenazi or Sephardic Jew.

## Father-in-law Ethnicity and Women's Pay

While parents' origin determines a woman's ethnicity, it is her father-in-law's surname that is observed by labor markets. The common custom of brides to adopt the last name of the groom puts a wedge between women's actual ethnicity and that signaled by her spouse's surname. If the perceived ethnic affiliation matters, married women's wages should reflect their fathers'-in-law origin rather than their own ethnicity. We utilize that to disentangle the impact of family background on pay via traits and job networks from the causal impact of ethnic discrimination.

To take advantage of the differences between women's actual and perceived ethnicity, we classify the population of married women into four groups by the origin of both their fathers and their fathers-in-law: (i) HWAA, women whose fathers and fathers-in-law were born in Europe or America; (ii) HWSS, women whose fathers and fathers-in-law were born in Asia or in Africa; (iii) HWSA, women whose fathers were born in Europe or America but whose fathers-in-law were born in Asia or Africa, and (iv) HWAS, women whose fathers were born in Asia or Africa but whose fathers-in-law were born in Europe or America.

We precede the wage gap estimation with a glance at educational attainment. We find remarkably similar patterns to those obtained when the population is classified by fathers' and mothers' origin (Figure 6). Ashkenazi women married to Ashkenazi men (HWAA) have the best educational attainment, whereas their Sephardic peers (HWSS) lag behind all others. Married women in mixed unions are somewhat in between, whereas, as Figure 6 depicts, Ashkenazi women married to Sephardic men (HWSA) have slightly better educational outcomes than their HWAS counterparts.

We next turn to the wage outcomes. Our findings are found in Table 11. The table contains two panels reporting "Sephardic-Ashkenazi" crude and residual wage gaps. The Sephardic Ashkenazi wage gap as measured among Israeli married women, when their ethnicity is classified by their fathers' in-law origin is found in the top panel. The bottom panel provides crude and residual wage gaps when married women are classified into four groups by their fathers' and their fathers'-in-law origin. The first entry in each panel reports the crude wage gaps, whereas the next two entries provide the residual gaps controlling for education and potential experience and accounting for location of residence and occupational fixed effects respectively. The fourth column reports estimates for a sub-sample married to salaried workers.

Two main facts emerge: we find large disparities between the mean earnings of Sephardic and Ashkenazi women when these are classified by their fathers' in-law

origin, larger than the ethnic wage gaps when women are classified to Ashkenazi and Sephardic by their own fathers' origin, and as notable as residual wage gaps among men; Ashkenazi women married to Sephardic men (HWSA) earn substantially less than their mixed-union counterparts (HWAS) who possess similar educational credentials, places of residence, and occupations.

For instance, HWAA women earn about 11 percentage points above their Sephardic counterparts (HWSS) once we control for education, region of residence and occupation which is almost twice larger than when categorized by own fathers' origin (Table 10, column iv). Moreover, while we find almost no differences between the mean wages of SA and AS women, Table 11 reports a substantial Sephardic-Ashkenazi wage gap when Israeli-born married women are classified by their fathers and fathers' in-law origin. Accounting for potential experience, schooling and occupations HWSA women earn about 6 percentage points less than their HWAS peers. Hence, among married women, it is the father-in-law's name that matters. While SA women earn slightly more than their AS counterparts (Table 10) we find (among the same group of women) that HWSA earn significantly less than their HWAS counterparts.

## Selection

The pay outcomes should be taken with a “grain of salt” since these might reflect other factors than discrimination, especially when measured among women whose participation rates lag far behind those of men (see summary statistics). Following Mulligan and Rubinstein (2008), we utilize husbands' educational attainment and wages to consider the potential magnitude of latent factors and the role of differential selection into the labor force on our findings.

Figure 7 depicts wives' wage residuals (imputed from the specification in Table 11) together with their husbands' educational attainment and wage residuals when the population sample of married women is classified into four groups by father's and father-in-law's origin. The benchmark group includes Sephardic women married to Ashkenazi men (HWAS). While we find that husbands' outcomes are fair proxy for wives' wage residuals within ethnic groups (Table 12) and between the intra-ethnic unions, it is negatively correlated with the wage gap between HWAS and HWSA working women. Both husbands and wives in the HWAA unions have better educational attainment and earn more than their HWSS counterparts. Yet, Ashkenazi women married to Sephardic men (HWSA) earn less than their HWSA counterparts despite having better educational attainment and being married to higher-paid and better educated spouses.

As for the selection of women into the workforce: only one-third of married women in our sample work FTFY, whereas more than two thirds have either part- or full-time jobs. Extending our analysis to include part-time women generates similar in magnitude results (available in the web version).

Selection might generate non-trivial bias if its nature among mixed couples varies systemically by husbands' origin. Although we find almost no differences between the share of workers (or FTFY) among married women in mixed unions (see summary statistics), sorting to the workforce might matter if, for instance, HWAS women are positively selected and Ashkenazi women married to Sephardic men are negatively selected. Observed wages might be particularly misleading (see Neal, 2004; and Mulligan and Rubinstein, 2008). Indeed patterns vary by type of union. While married women in intra-ethnic unions are more likely to sort into the labor force, the better educated is their spouse and less likely to work the better paid he is we find women's labor supply in mixed unions to be uncorrelated with their spouse characteristics (available on the web version).

Finally we re-estimate the wage gap imputing women's missing wages using husbands' wage residuals. To account for differential sorting within inter- and intra-ethnic unions, we impute missing wage residuals by father's and father-in-law's origin. We report our findings in Table 13. The table contains four columns. The first two report the residual wage gaps, accounting for education, location of residence and occupation fixed effects for all FTFY women and for a sub-sample whose spouses' wages are observed. The third column extends the sample of working women whose husbands' wages are available to include part-time women. The last column combines the imputed wage residuals with those obtained in the third column. Clearly, if husbands' wages is a fair proxy for wives' potential wages than it would be fair to conclude that HWSA women are paid significantly less than their HWAS counterparts.

Hence, if own educational attainment and spouses' outcomes are fair proxy for women's unobserved factors, Ashkenazi women married to Sephardic men are underpaid. These results are consistent with the interpretation that much of the wage gap among offspring born to mixed couples or between women married outside of their ethnic groups reflect their perceived ethnicity signaled by family name, rather than their actual ethnicity.

## 10 Conclusions

The growing mobility of individuals across borders has been transforming homogenous populations into multi-ethnic economies. Hence economists should strive to better understand the causes and consequences of cultural barriers. The Israeli Jewish society provides an excellent quasi-experimental setting for studying the impact of ethnic and culturally-based prejudice on labor market outcomes and feedback effects.

The Israeli Jewish society is characterized by an ethnic cleavage on the basis of two groups: those of European or American descent, the "Ashkenazim," and those of Asian or African descent, the "Sephardim". A large body of research documents vast and persistent disparities between ethnic groups among Israeli-born Jews on many indicators of social welfare and economic success, including educational attainment. By the late 1990s, the wage gap between Israeli-born Sephardic Jews and Israeli-born Ashkenazi Jews had become as large as the black-white wage gap in the United States. Much of the wage gap reflects persistent differences in academic achievement; yet, as in the United States, the source of differences in educational attainment, wage rates and earnings has not been fully determined. In this respect, Israel provides an illuminating setting for studying the role of stereotypes and prejudice in labor markets. In this study we take advantage of (i) ethnic gaps in measures of human capital and educational attainment; (ii) origin-related genealogy of persons' family names; and (iii) interethnic unions – all of which unique attributes of the Israeli Jewish society - to evaluate the impact of prejudice and ethnic stereotypes on the labor market outcomes of equally productive workers.

Family names have great importance in Judaism, as they often testify to a person's genealogy or place of birth. Today, most Jewish family names in Israel are Sephardic or Ashkenazi. Using this common knowledge, we focused on two sub-groups: (i) Israeli Jews born to Sephardic fathers and Ashkenazi mothers, who are more likely to carry a Sephardic surname and, therefore, be treated in labor markets as Sephardic; and (ii) Israeli Jews born to Ashkenazi fathers and Sephardic mothers who carry an Ashkenazi family name and are more likely to be perceived as Ashkenazi by labor markets. We estimate the reduced-form impact of Sephardic affiliation on pay by comparing the log hourly wages of Israeli Jews born to Sephardic fathers and Ashkenazi mothers with the outcomes of Israeli Jews born to Ashkenazi fathers and Sephardic mothers.

By the mid 1990s, Israeli-born Sephardic workers earned about 12 percent less than their Ashkenazi counterparts. We utilize the Israeli Census of 1995, the first to contain both fathers' and mothers' country of birth (for those born in Israel), to assess the

causal impact of ethnic affiliation on pay. Comparing the log hourly wages of Israeli-born SA with the outcomes of their AS counterparts, we find that FTFY Israeli male workers born to Sephardic fathers and Ashkenazi mothers earn about 8 percent less than those born to Ashkenazi fathers and Sephardic mothers, which is approximately one half of the wage gap between intra-ethnic Israeli-born Jews.

SA have better educational attainment, perform better on cognitive achievement tests than their AS peers, have higher levels of parental education, and higher earnings than their mixed-couple counterparts. Thus they are expected to earn more. Nevertheless they are being paid less. This contrast, summarized in Figure 5a and Figure 5b, suggests that our estimates provide lower bounds for the impact of ethnic discrimination on wages.

The pay gap might reflect other factors affecting non-cognitive traits besides discrimination. Although our setting partially accounts for that by focusing on offspring to inter-ethnic unions, the experience of growing up by Ashkenazi father and Sephardic mother might be different than that of being raised by Sephardic father and an Ashkenazi mother (SA).

Finally we utilize a common tradition in many cultures, the custom of brides to adopt the last name of the groom, to disentangle perceived origin from actual ethnicity. If labor markets discriminate on the base of perceived ethnicity we should find that it is fathers-in-law's rather than own father's origin that matters. Consistent with our interpretation of the results for males, we find no differences between the hourly wages of AS and SA women, who are as likely to carry a Sephardic surname, as both groups marry Sephardic and Ashkenazi men roughly in equal proportions. We also find that Ashkenazi women married to Sephardic men earn less than their Sephardic counterparts despite having better educational attainment and being married to higher paid and better educated spouses.

These findings are consistent with the interpretation that the measured gap in men's wages between SA and AS workers reflects discrimination based on ethnic affiliation.

Ethnic discrimination might reflect both the outcome of a "taste for discrimination" or the result of ethnic stereotypes. Do Israeli employers statistically discriminate among young workers on the basis of (supposedly) easily observable characteristics such as ethnic affiliation? If so, do they treat them more equally as they learn about their productivity? Statistical discrimination is difficult to identify, perhaps since wages vary over the life cycle due to reasons other than market learning. Stereotypes, which reduce the returns to investment in human capital (Coate and Loury, 1993), may cause



minorities to invest less on the job.

In the lack of panel data a rigorous examination of the underlying mechanism is beyond the scope of this paper. A brief and incomplete glance reveals that wage gaps between AS and SA workers tend to be larger during early years in the labor market than later, consistent with the interpretation that firms, in the absence of perfect information on workers' productivity, employ ethnic stereotypes and statistically discriminate among equally productive workers.

## References

- [1] Ajzenstadt, M. & Borowski, A. (2005) Setting things straight: Probation officers' perspectives on the impacts of the introduction of public defenders on the juvenile court in Israel. *Qualitative Social Work: Research and Practice*, 4(1), pp. 33-50.
- [2] Almond, D., Chay, K. & Greenstone, M. (Forthcoming in AER) Civil Rights, the War on Poverty, and Black-White Convergence in Infant Mortality in the Rural South and Mississippi. *American Economic Review*.
- [3] Altonji, J.G. & Blank, R.M.(1999) Race and gender in the labor market. In: Orley, A., Card, D. eds., *Handbook of Labor Economics*. St. Louis, MO, Elsevier, vol. 3. , pp. 3143–3259.
- [4] Altonji, J.G. & Pierret, C.R.(2001) Employer Learning and Statistical Discrimination. *Quarterly Journal of Economics*, 116(1), pp. 313-350.
- [5] Amir, S. (1987) Trends in Earnings Gaps among Jewish Men during the 70's by Country of Origin. *Survey of Bank of Israel*, No. 63, pp.43–64.
- [6] Arrow, K.J. (1973) The Theory of Discrimination. In: Ashenfelter, O. & Rees, A. eds., *Discrimination in labor markets*. Princeton, NJ, Princeton University Press, pp. 3–33.
- [7] Bart, B. et al. (1997) What's in a Name. *Women in Management Review*, 12, pp. 209–308.
- [8] Becker, G.S. (1957) *The Economics of Discrimination*. Chicago, IL. The University of Chicago Press.
- [9] —————. (1973) A Theory of Marriage: Part I. *The Journal of Political Economy*, 81(4), pp. 813-846.
- [10] —————. (1974) A Theory of Marriage: Part II. *The Journal of Political Economy*, 82(2), pp. S11-S26.
- [11] Becker, G.S. & Lewis H. G. (1973) On the Interaction between the Quantity and Quality of Children. *Journal of Political Economy* 81(2) part 2, pp. S279-S288.
- [12] Benabou, R. (1996) Equity and Efficiency in Human Capital Investment: The Local Connection. *Review of Economic Studies* 63(2), pp. 237-264.

- [13] Ben-Porath, Y. (1986) *The Israeli Economy: Maturing Through Crises*. Cambridge, MA. Harvard University Press.
- [14] Bertrand, M. & Mullainathan, S. (2004) Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment Evidence on Labor Market Discrimination. *The American Economic Review*, 94(4), pp. 991-1014.
- [15] Borjas, G.J (1990) *Friends or Strangers: The Impact of Immigrants on the American Economy*, New York: Basic Books.
- [16] —————. (1992) Ethnic Capital and Intergenerational Mobility. *Quarterly Journal of Economics*, 107(1), pp. 123-150.
- [17] Bound, J. & Freedman, R. (1992) What When Wrong? The Erosion of Relative Earnings and Employment Among Young Black Men in the 1980s. *Quarterly Journal of Economics* 107 (1), pp. 201-232.
- [18] Boyd, M., Featherman D.L. & Matras J. 1980. Status Attainment of Immigrant and Immigrant-Origin Groups in the United States, Canada, Israel. In: *Comparative Social Research*, Richard F. Tomasson ed. Vol. 3. Greenwich, Conn.: JAI.
- [19] Brown, C. & Gay, P. (1985) *Racial discrimination 17 years after the act*. London, Policy Studies Institute.
- [20] Carneiro, P. & Heckman J.J. (2003). Human Capital Policy, *National Bureau of Economic Research Working Paper*. No. 9495.
- [21] Chandra, A. & Skinner, J. (2003) Geography and Racial Health Disparities. *NBER Working Paper* No. 9513
- [22] Cunha, F. & Heckman, J.J (2007) The Technology of Skill Formation. *American Economic Review*, 97 (2), pp. 31-47.
- [23] Coate, S. & Loury, G. C. (1993) Will Affirmative-Action Policies Eliminate Negative Stereotypes? *American Economic Review*, 83 (5), pp.1220–1240.
- [24] Cohen, Y. & Haberfeld, Y. (1998) Second generation Jewish immigrants in Israel: have the ethnic gaps in schooling and earnings declined?. *Ethnic and Racial Studies*, 21(3), pp.507–528.

- [25] Dahan, M. et al. (2003) Have the Gaps in Education Narrowed? On Factors Determining Eligibility for Israeli Matriculation Certificate. *Israel Economic Review*, 2 pp. 37-69.
- [26] Durlauf, S., N. (1996) A Theory of Persistent Income Inequality. *Journal of Economic Growth*, 1 (1), pp. 75-93.
- [27] Eisenstadt, S. & Shmuel, N.(1954) The Absorption of Immigrants. London: Routledge & Kegan Paul.
- [28] Eisenstadt, S. (1985) *The Transformation of Israeli Society: An Essay in Interpretation*, Boulder CO, Westview Press.
- [29] Easterly, W. & Levine R. (1997) Africa's Growth Tragedy: Policies and Ethnic Divisions. *Quarterly Journal of Economics*, 112(4), pp. 1203-1250.
- [30] Fernández, R. (2007) Women, Work, and Culture. *National Bureau of Economic Research Working Paper*, No. 12888.
- [31] Fernández, R. & Fogli A. (2006) Fertility: The Role of Culture and Family Experience. *Journal of the European Economic Association*, 4(2-3), pp. 552-561
- [32] Fershtman, C. & Gneezy, U. (2001) Discrimination in a segmented society: an experimental approach. *Quarterly Journal of Economics*, 116(1), pp. 351-377.
- [33] Fishman, G., Rattner, A. & Weiman, G. (1987), The Effects of Ethnicity on Crime Attribution. *Criminology* , 25 , pp. 507 – 524 .
- [34] Friedberg, Rachel M. (2001). The Impact of of Mass Migration on Israeli Labor Market. *Quarterly Journal of Economics*, 66, pp. 1373-1408.
- [35] Fryer Roland G. Jr. and Steven D. Levitt (2004). Understanding the Black-White Test Score Gap in the First Two Years of School. *The Review of Economics and Statistics*, 86(2), pp. 447-464.
- [36] Fryer, R.G. Jr. & Levitt, S.D (2004) The Causes and Consequences of Distinctively Black Names. *The Quarterly Journal of Economics*, 119(3), pp. 767-805.
- [37] Fryer, R.G. Jr, Kahn, L., Levitt, S.D & Spenkuch, J.L (2008) The Plight of Mixed Race Adolescents. *National Bureau of Economic Research Working Paper*, No. 14192.

- [38] Goldscheider, C. (2002). *Israel's Changing Society: Population, Ethnicity, and Development*. Boulder, CO. Westview Press Inc; 2 Rev Ed edition.
- [39] Haberfeld, Y. & Cohen, Y. (2007) Gender, ethnic, and national earnings gaps in Israel: The role of rising inequality. *Social Science Research*, 36 (2), pp. 654–672.
- [40] Hanoch, G. (1961) *Income Differentials in Israel*, in Fifth Report 1959 and 1960 (Hebrew and English).
- [41] Heckman, J.J (1998) Detecting Discrimination. *Journal of Economic Perspectives*, 12(2), pp. 101–116.
- [42] Heckman J. J. and Rubinstein Y. (2001) The Importance of Noncognitive Skills: Lessons From the GED Testing Program, *American Economic Review*, 91, pp. 145-149.
- [43] Heckman, J.J., Stixrud, J. & Urzua S. (2006). The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior. *Journal of Labor Economics*, 24(3), pp. 411-482.
- [44] Jencks, C., & Phillips, M. (1998). The black-white test score gap: An Introduction. In: Jencks, C. & Phillips M. eds, *The black-white test score gap*. Washington, DC, Brookings Institution, pp. 1-51.
- [45] Jowell, R. & Prescott-Clarke, P. (1970) Racial discrimination and white-collar workers in Britain, *Race*, 11(4), pp. 397-417.
- [46] Kaganoff, B.C. (1977) *A Dictionary of Jewish Names and their History*. New York, Schocken Books.
- [47] Levine, R., Levkov A. & Rubinstein, Y. (2008) Racial Discrimination and Competition. *National Bureau of Economic Research Working Paper*, No. 14273.
- [48] Lewin-Epstein, N. & Semyonov, M. (1986) Ethnic Group Mobility in the Israeli labor Market. *American Sociological Review*, 51(3), pp. 342–352.
- [49] —————. (1991) Local labor markets, ethnic segregation, and income inequality. *Social Forces*, 70(4), pp. 1101–1119.
- [50] Loury, G.C. (1977) A Dynamic Theory of Racial Income Differences, In: Wallace, P.A. , & Le Mund, A. eds., *Women, Minorities and Employment Discrimination* ,Lexington, MA.: Lexington Books.

- [51] —————.(1981) Intergenerational Transfers and the Distribution of Earnings. *Econometrica*, 49 (4), pp. 843–867.
- [52] Mark, N.(1994) Ethnic Gaps in Earning and Consumption in Israel. *Economic Quarterly*, 41(1), pp. 55–77.
- [53] Matras J., Noam G. & Bar Haim I. (1984) Young Israelis at the Threshold: A Study of the 1954 Cohort of Israeli Men. Final report (D102.84). Brookdale Institute.
- [54] Montgomery, J.D (1991) Social Networks and Labor-Market Outcomes: Toward an Economic Analysis. *The American Economic Review*, 81(5), pp. 1408-1418
- [55] Mulligan, C.B., & Rubinstein, Y.(2008) Selection, Investment, and Women’s Relative Wages over Time. *Quarterly Journal of Economics*, 123, pp. 1061–1110.
- [56] Munshi, K(2003) Networks in the Modern Economy: Mexican Migrants in the U.S. Labor Market. *Quarterly Journal of Economics*, 118(2), pp. 549-599.
- [57] Neal, D. (2004) The Measured Black-White Wage Gap among Women Is Too Small. *Journal of Political Economy*, 112(2), pp.21-28.
- [58] —————.(2007) Why Has Black-White Skill Convergence Stopped? In: Hanushek, E.A & Welch, F. eds. *The Handbook of the Economics of Education*, Elsevier B.V., Vol 1 Ch.9.
- [59] Neal, D., & William. R.J. (1996) The Role of Pre-market Factors in Black-White Wage Differences, *Journal of Political Economy*, 104(5), pp.869–895.
- [60] Phelps, E.S. (1972) The Statistical Theory of Racism and Sexism. *American Economic Review*, 62(4), pp. 659–661.
- [61] Qian, Z. (1997). Breaking the Racial Barriers: Variations in Interracial Marriage Between 1980 and 1990. *Demography*, 34(2), pp. 263-276.
- [62] Rees, A. (1966) Information Networks in Labor Markets. *The American Economic Review*, Vol. 56, No. 1/2 (Mar. 1, 1966), pp. 559-566.
- [63] Shavit Y & Stier, H. (1994) Age at Marriage, Sex-Ratios, and Ethnic Heterogamy. *European Sociological Review*, 10(1), pp.79-87.

- [64] Rosenstein, C. (1981) The Liability of Ethnicity in Israel. *Social Forces*, 59(3), pp. 667-686.
- [65] Semyonov, M. & Lerhental, T. (1991) Country of Origin, Gender, and the Attainment of Economic Status: A Study of Stratification in the Jewish Population in Israel. *Research in Social Stratification and Mobility*, 10, pp.325–343.
- [66] Semyonov, M & Tyree, A. (1981) Community Segregation and the Costs of Ethnic Subordination. *Social Forces*, 59(3), pp. 649-666.
- [67] Shavit, Y. (1984) Tracking and Ethnicity in Israeli Secondary Education. *American Sociological Review*, 49(2), pp. 210-220.
- [68] Shavit, Y. & Featherman, D.L(1988) Schooling, Tracking, and Teenage Intelligence. *Sociology of Education*, 61(1), pp. 42-51.
- [69] Shuval, J. T.(1963) *Immigration on the Threshold*. New York: Atherton.
- [70] Smith, J. & Welch, F. (1989) Black Economic Progress After Myrdal." *Journal of Economic Literature* 27 (2), pp. 519-564.
- [71] Yitzhaki, S. & Schechtman, E. (2009) The "Melting Pot": A Success Story? *Journal of Economic Inequality*, 7, pp. 137-151.

**Table 1**  
**The Gap in Log Hourly Wages Among Israeli-Born Jews By Father's Origin**  
**Israeli 1995 Census Micro Files**

Variables	Age			
	22-65		30-55	
	(i)	(ii)	(iii)	(iv)
Born in Israel, father born in Asia or Africa	<b>-0.462</b> (0.007)	<b>-0.106</b> (0.007)	<b>-0.426</b> (0.008)	<b>-0.122</b> (0.008)
Born in Israel, father born in Israel	-0.231 (0.010)	-0.015 (0.009)	-0.139 (0.012)	-0.019 (0.011)
Controlling for Education, Experience and Location	No	Yes	No	Yes
R-squared	0.119	0.399	0.114	0.329
Observations	32913	32913	23505	23505

Notes: The benchmark group is men born in Israel whose father was born in Europe or America. The table reports the coefficient on a dummy variable representing men who were born in Israel to a father born either in Asia/Africa or in Israel relative their counterparts whose father was born in Europe or America. The first column in each age group reports crude wage gaps. The second column in each age group reports wage gaps conditional on potential experience, highest diploma received and area of residence. Potential experience was calculated as age-school years completed-6 and we control for a quartic in experience. Highest diploma received is represented by 8 dummy variables. We control for a full set of dummy variables for each area of residence in the year of the census.

( ) Robust standard errors are reported in parenthesis



**Table 2**  
**Educational Attainments by Origin and Generation in Israel among Jewish Males Aged 30 to 55**  
**Israeli Censuses of 1983, 1995 and the linked 1983-1995 Micro Files**

<b>Generation in Israel</b>									
	<b>1st (1972 Census)</b>			<b>2nd (1983 Census)</b>			<b>3rd (1995 Inter-Generational Census)</b>		
	School Years	BAGRUT Rate	Academic Degree	School Years	BAGRUT Rate	Academic Degree	School Years	BAGRUT Rate	Academic Degree
<b>Ethnic Group</b>	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
"Sephardic"	-4.1 (0.1)	-0.24 (0.00)	-0.13 (0.00)	-3.1 (0.0)	-0.39 (0.01)	-0.25 (0.00)	-2.3 (0.4)	-0.37 (0.08)	-0.34 (0.09)
"Ashkenazi" (Level)	11.1 (0.0)	0.35 (0.00)	0.15 (0.00)	13.7 (0.0)	0.55 (0.00)	0.32 (0.00)	14.0 (0.5)	0.69 (0.14)	0.48 (0.17)

Notes: The table reports years of schooling completed, matriculation rates ("BAGRUT") and the fraction with college education (or advanced degrees) by origin. For those born outside of Israel (1st generation) origin is determined by own continent of birth, namely Asia-Africa (ASAF) and Europe-America (ERAM). For those born in Israel whose father was born outside Israel (2nd generation), origin is determined by father's continent of birth. For those born in Israel to a father who was born in Israel (3rd generation), origin is determined by father's father (paternal grandfather) continent of birth.

( ) Robust standard errors are reported in parenthesis

**Table 3**  
**The Stock of Inter and Intra Ethnic Unions**  
**Israeli 1972, 1983 and 1995 Census Micro Files**

<b>Measured at:</b>	<b><u>Origin of Husband and Wife</u></b>				<b><u>Fractions of Inter and Intra-Ethnic Unions</u></b>	
	Hus -A Wf -A	Hus -A Wf -S	Hus -S Wf -A	Hus -S Wf -S	Within Origin	Between Origins
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
1972 Census	0.56	0.04	0.03	0.37	0.93	0.07
1983 Census	0.48	0.07	0.06	0.40	0.88	0.12
1995 Census	0.46	0.08	0.07	0.40	0.86	0.14

Notes: The table reports the fractions of marriages within/between groups of origin measured at each of the censuses, 1972, 1983 and 1995. The figures in the table are the fraction of couples who were (reporting: "currently married") married at the time of the respective census. The table focuses on couples whose (for both partners) exact origin is identified. If, for example, the husband's father was born in Israel we are not able to know if the husband origin is from Asia/Africa or Europe/ America. The fractions of completely identified unions out of all marriages at the time of the census are: 94% in 1972, 92% in the census of 1983 and 87% in the census of 1995.

^ Ethnicity (A - Ashkenazi and S - Sephardic) is determined by continent of birth, for those born outside of Israel and by father continent of birth for Israeli-born. In 1995 origin of individuals can be also identified by the origin of their mother. Using this type of identification for individuals who were born in Israel and whose father was born in Israel does not change the results.

**Table 4**  
**Origin Related Gaps in Analytic and Verbal Standardized Test Scores**  
**IDF Administered Test Scores, Life History Study of Israeli Men**

		Analytic Scores		Verbal Scores	
		(i)	(ii)	(iii)	(iv)
<i>By Father's Origin</i>					
Father born in Asia or Africa		<b>-0.56</b> (0.06)	<b>-0.25</b> (0.05)	<b>-0.70</b> (0.06)	<b>-0.36</b> (0.05)
Controlling for Education		No	Yes	No	Yes
R-squared		0.08	0.34	0.12	0.40
Observations		1141	1141	1141	1141
<i>By Parents' Origin</i>					
Father - Asia/Africa	SA	<b>0.53</b> (0.30)	<b>0.45</b> (0.25)	<b>0.35</b> (0.29)	<b>0.25</b> (0.24)
Mother - Europe/America					
Father - Europe/America	AA	0.47 (0.19)	0.22 (0.16)	0.56 (0.19)	0.28 (0.15)
Mother - Europe/America					
Father - Asia/Africa	SS	-0.14 (0.19)	-0.05 (0.16)	-0.19 (0.18)	-0.11 (0.15)
Mother - Asia/Africa					
Controlling for Education		No	Yes	No	Yes
R-squared		0.09	0.34	0.13	0.40
Observations		1141	1141	1141	1141

Notes: The benchmark group at the top panel is men born in Israel to a father who was born in Europe or America. The benchmark group at the bottom panel is men born in Israel to a father who was born in Europe or America and to a mother who was born in Asia or Africa. Every Israeli man takes a test prior to his mandatory service in the Israeli Defense Forces (IDF). This test is comprised of three sections: (i) Analytic (ii) Verbal and (iii) Non cognitive. The table reports the scores of the first two tests for a sample of Israeli born men for whom both father and mother's country of birth is known. In this sample the range of the analytic score is between 5-33 and the range of the verbal score is between 0-21. We control for education with a set of dummies for 0-4, 5-8, 9-11, 12, Matriculation, 13+ years of schooling. There are two dummies indicating skipping/repeating a class  
 ( ) Robust standard errors are reported in parenthesis

**Table 5**  
**Occupation, Sector, Status and Location of Residence by Parents' Origin**  
**Israeli Born Jews, Males, Age 30-55**  
**Israeli 1995 Census Micro Files**

		<u>Origin by Both Parents' Continent of Birth</u>			
		<u>AA</u>	<u>AS</u>	<u>SA</u>	<u>SS</u>
<b>Occupation and Sector</b>					
Occupation 1-Digit Classification	Hourly wage for an AA worker^				
Managers	\$20	0.21	0.14	<b>0.16</b>	0.08
Academic professionals	\$18	0.21	0.12	<b>0.12</b>	0.05
Associate professionals and technicians	\$14	0.11	0.12	<b>0.11</b>	0.08
Clerical workers	\$13	0.13	0.15	<b>0.13</b>	0.14
Agents, sales and service workers	\$11	0.09	0.13	<b>0.14</b>	0.12
Industry, construction and other skilled workers	\$10	0.16	0.25	<b>0.28</b>	0.42
Skilled agricultural workers	\$10	0.00	0.01	<b>0.01</b>	0.01
Unskilled workers	\$8	0.02	0.03	<b>0.02</b>	0.06
Missing Occupation^^		0.07	0.05	<b>0.03</b>	0.05
<i>Sector &amp; Status^^^</i>					
Government Sector		0.29	0.24	<b>0.25</b>	0.25
Salaried Workers		0.78	0.76	<b>0.76</b>	0.77
Self Employed		0.20	0.21	<b>0.23</b>	0.22
Others		0.02	0.03	<b>0.01</b>	0.01
<b>Location of Residence (by quintiles of Socio-Economic Index)</b>					
<i>Individual's Location of Residence in 1995</i>					
Q5		0.28	0.19	<b>0.19</b>	0.14
Q4		0.23	0.27	<b>0.24</b>	0.18
Q3		0.24	0.21	<b>0.22</b>	0.17
Q2		0.14	0.18	<b>0.17</b>	0.21
Q1		0.11	0.15	<b>0.18</b>	0.29
<i>Location of Residence of "Synthetic Parents" in 1983^^^^</i>					
Q5		0.12	0.13	<b>0.13</b>	0.08
Q4		0.24	0.20	<b>0.20</b>	0.15
Q3		0.28	0.29	<b>0.27</b>	0.24
Q2		0.19	0.19	<b>0.17</b>	0.24
Q1		0.16	0.19	<b>0.22</b>	0.29

**Notes for Occupations panel:** The Central Bureau of Statistics classifies under the unified definition of "Industry, Construction and Other skilled workers" groups 6-8 in the 1-digit occupations classification. We present these three groups under the unified definition. The gaps between the fraction of SA individuals relative to AS individuals in each of the 6-8 1-digit classification groups (within the "Industry, Construction and Other skilled workers" group) are 0.013, -0.009, 0.006 for groups 6,7 and 8 respectively. All are insignificant. Individuals are full-time full-year salaried workers.

^ For each occupation we calculated the average hourly wage of an AA worker. Hourly wage is presented in current US Dollars (\$) and was converted from New Israeli Shekels (NIS) by a rate of 3.04, the average exchange rate in September 1995 (Source: Bank of Israel)

^^ Missing occupations are for those with non reported occupation or an occupation reported with an error.

**Notes for sector and work status panel:** We defined working in the government sector individuals working in: Production and distribution of electricity, Collection, purification and distribution of water, Air transport, Banking and other financial institutions, Public administration of the state, Administration of the local authorities, The National Insurance, Education, Health services Sewage and refuse disposal and sanitation services, Community centers, Religious services, Extra-territorial organizations and bodies Port services Airport services, National telecommunication services, Commercial banks Controls are a full set of dummies for age and highest diploma received.

^^^ The sample excludes non-employed individuals

**Notes for own location of residence panel:** The Socio-Economic Index was constructed by The Israeli Central Bureau of Statistics and is based on measures of income per capita, unemployment rates, fraction of students with matriculation eligibility fraction of BA students, transportation, demography and other measures for each locality. The index has a mean value of -.0003191 with standard deviation of 1.13.

**Notes for location of residence of synthetic parents panel:** The benchmark group at the top panel is individuals born in Israel to a father who was born in Europe or America. The benchmark group at the bottom panel is individuals born in Israel to a father who was born in Europe or America and to a mother who was born in Asia or Africa. The dependent variables are three measures of socio-economic status of localities in Israel. The Socio-Economic Index was constructed by The Israeli Central Bureau of Statistics and is based on measures of income per capita, unemployment rates, fraction of students with matriculation eligibility fraction of BA students, transportation, demography and other measures for each locality. The index has a mean value of -.04 with standard deviation of 0.95. The "Monthly Income" index was also constructed by the Israeli Central Bureau of Statistics and measures the monthly net income of a standard person. The mean of log of income per capita is 128.9 with a standard deviation of 40.8. The third index measures the Employment rate in the locality and has a mean of 51.8 and a standard deviation

^^^^ To proxy family background we generate "synthetic parents" assuming mothers were 20 to 35 when they gave birth. A "synthetic mother" of a person aged 35 in 1995 has the characteristics of the average married woman born in 1925-40 by her continent of origin and her spouse's origin. The "synthetic fathers" have the characteristics of those actually married to the "synthetic" mothers.

**Table 6**  
**The Gap in Log of Hourly Wages Among Israeli Born FTFY Male Workers by Parents' Origin**  
**Israel 1995 Census Micro Files**

Variables	Age						
	22-65 (N=25,170)			30-55 (N=18,659)			
	(i)	(ii)	(iii)	(vi)	(v)	(vi)	
<i>By Father' Origin</i>							
		<b>-0.476</b>	<b>-0.111</b>	<b>-0.074</b>	<b>-0.437</b>	<b>-0.127</b>	<b>-0.088</b>
		(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)
<i>Controlling for</i>							
Education & Experience		No	Yes	Yes	No	Yes	Yes
Occupation & Location		No	No	Yes	No	No	Yes
R-squared		0.15	0.40	0.49	0.13	0.34	0.45
<i>By Parents' Origin</i>							
Father born in Asia/Africa	SA	<b>-0.099</b>	<b>-0.067</b>	<b>-0.090</b>	<b>-0.070</b>	<b>-0.078</b>	<b>-0.113</b>
Mother born in Europe/America		(0.033)	(0.027)	(0.025)	(0.042)	(0.035)	(0.033)
Father born in Europe/America	AA	0.354	0.055	0.026	0.272	0.065	0.030
Mother born in Europe/America		(0.021)	(0.018)	(0.016)	(0.025)	(0.022)	(0.020)
Father born in Asia/Africa	SS	-0.151	-0.062	-0.049	-0.186	-0.067	-0.059
Mother born in Asia/Africa		(0.020)	(0.017)	(0.015)	(0.024)	(0.022)	(0.019)
<i>Controlling for</i>							
Education & Experience		No	Yes	Yes	No	Yes	Yes
Occupation & Location		No	No	Yes	No	No	Yes
R-squared		0.16	0.40	0.49	0.14	0.34	0.45

Notes: The benchmark group at the top panel is men born in Israel to a father who was born in Europe or America. The benchmark group at the bottom panel is men born in Israel to a father who was born in Europe or America and to a mother who was born in Asia or Africa. Individuals are Jewish salaried males working full time and full year in 1995. The first column in each panel in each age group reports crude wage gaps. The second column reports wage gaps conditional on potential experience, and highest diploma received. The third column controls for the same set of controls as the second column and a full set of dummy variables for each occupation classified by three digits and area of residence. We added a set of dummy variables for each occupations classified by one digit to control for cases where 3-digit classification is not available. We also added a dummy variable indicating missing occupation. Potential experience was calculated as age-school years completed-6 and we control for a quartic in potential experience. Highest diploma received is represented by 8 dummy variables. We control for a full set of dummy variables for each area of residence in the year of the census.

( ) Robust standard errors are reported in parenthesis

**Table 7a**  
**Origin Related Differences in Father's Religious Practice**  
**Life History Study of Israeli Men (N=1,143)**

		<b>Father Wears "KIPPA"</b>	<b>Father Observes Kosher Food</b>
		(i)	(ii)
<i>By Father's Origin</i>			
Father born in Asia or Africa		<b>0.32</b> (0.03)	<b>0.47</b> (0.02)
<i>By Parents' Origin</i>			
Father - Asia/Africa	SA	<b>-0.05</b> (0.15)	<b>-0.22</b> (0.11)
Mother - Europe/America			
Father - Europe/America	AA	-0.01 (0.09)	-0.37 (0.07)
Mother - Europe/America			
Father - Asia/Africa	SS	0.32 (0.09)	0.13 (0.07)
Mother - Asia/Africa			

Notes: The benchmark group at the top panel is men born in Israel to a father who was born in Europe or America. The benchmark group at the bottom panel is men born in Israel to a father who was born in Europe or America and to a mother who was born in Asia or Africa (AS). The dependent variables are binary variables indicating whether individual's father used to wear a "KIPPA" or whether the individual's father observed eating KOSHER food while the individual was growing up

**Table 7b**  
**Origin Related Differences in Own Religious Practices**  
**Life History Study of Israeli Men (N=1,129)**

		<b>Wears "KIPPA"</b>	<b>Lays "Tfilin"</b>	<b>Observes Kosher Food</b>	<b>Fasts on "Yom Kippur"</b>	<b>Eats Bread on Passover</b>
		(i)	(ii)	(iii)	(vi)	(v)
<i>By Father's Origin</i>						
Father born in		<b>-0.02</b>	<b>-0.04</b>	<b>0.36</b>	<b>0.31</b>	<b>-0.24</b>
<i>By Parents' Origin</i>						
Father - Asia/Africa	SA	<b>-0.12</b>	<b>-0.10</b>	<b>-0.24</b>	<b>-0.14</b>	<b>0.10</b>
Mother - Europe/America		(0.11)	(0.10)	(0.14)	(0.13)	(0.13)
Father - Europe/America	AA	0.03	0.00	-0.29	-0.21	0.21
Mother - Europe/America		(0.07)	(0.07)	(0.09)	(0.09)	(0.08)
Father - Asia/Africa	SS	0.01	-0.04	0.10	0.12	-0.05
Mother - Asia/Africa		(0.07)	(0.07)	(0.09)	(0.08)	(0.08)

Notes: The benchmark group at the top panel is men born in Israel to a father who was born in Europe or America. The benchmark group at the bottom panel is men born in Israel to a father who was born in Europe or America and to a mother who was born in Asia or Africa. The dependent variables are binary variables indicating the individual's self report to five questions regarding his current religious practices.



**Table 8**  
**Origin Related Gaps in Number of Children Ever Born to a Woman**  
**Married Women Born Outside of Israel by Their Own and Spouse's Continent of Origin**  
**Israeli Census, 1983, Micro Files**

<b>Variables</b>	Parents to	<b>All Ages</b>		<b>Age 38-45</b>	
		(i)	(ii)	(iii)	(iv)
Husband - Sephardic Wife - Ashkenazi	SA	<b>0.00</b> (0.07)	<b>0.02</b> (0.07)	<b>-0.02</b> (0.09)	<b>0.00</b> (0.09)
Wife - Ashkenazi		(0.05)	(0.05)	(0.07)	(0.07)
Husband - Sephardic Wife - Sephardic	SS	1.80 (0.05)	1.81 (0.05)	1.38 (0.07)	1.39 (0.07)
Husband - Ashkenazi Wife - Sephardic	AS (Level)	3.12 (0.04)	3.04 (0.10)	3.18 (0.06)	3.28 (0.10)
Controlling for Birth Cohort		No	Yes	No	Yes
R-squared		0.14	0.14	0.21	0.21
Observations		34287	34287	11606	11606

Notes: This population sample includes all married women, born outside of Israel between 1905 and 1945, married to Israeli Jews who were born outside of Israel as well. We divide the population sample into four groups by mother and spouses' continent of origin: (i) mother born in Asia or in Africa and spouse born in Europe or America (parents to AS); (ii) mother and spouse born in Europe or America (parents to AA); (iii) mother and spouse born in Asia or Africa (parents to SS) and the benchmark group (iv) mother born in Europe or America and spouse born in Asia or in Africa (parents to SA)

( ) Robust standard errors are reported in parenthesis

**Table 9**  
**Origin Related Differences in the Fraction of Married Women and the**  
**Fraction of Women who Marry Outside their Father's Ethnic Group**  
**Women, Age 30-50<sup>^</sup>, Israeli Census 1995 Micro Data Files**

		<b>Fraction of Women Currently Married</b>	<b>Fraction Married outside their Father's Ethnic Group</b>
		(i)	(ii)
<i>By Father's Origin</i>			
Father born in Europe or America		0.82	0.23
<i>By Parents' Origin</i>			
Father - Asia/Africa	SA	0.83	0.43
Mother - Europe/America			
Father - Europe/America	AA	0.83	0.21
Mother - Europe/America			
Father - Asia/Africa	SS	0.84	0.18
Mother - Asia/Africa			
Father - Europe/America	AS	0.81	0.47
Mother - Europe/America			

Notes: We identify married couples by having a common household identification code in 1995. We restrict our sample to women reporting being the head of household or the spouse of the head, and are currently married. We drop households with same gender reported for head and spouse. Controls are a full set of dummies for age and highest diploma received.

( ) Robust standard errors are reported in parenthesis

<sup>^</sup> We restrict the women sample to age 50 (compared with 55 for men) since, in 1995, women in Israel retired five years earlier than men.

Table 10

**The Gap in Log of Hourly Wages Between Women Born in Israel, by Father and by Both Parents' Origin  
FTFY, Age 30-50, Israel 1995 Census Micro Files**

		(i)	(ii)	(iii)	(iv)
<i>By Father' Origin</i>					
Father born in Asia/Africa		<b>-0.320</b> (0.011)	<b>-0.088</b> (0.011)	<b>-0.045</b> (0.010)	<b>-0.056</b> (0.013)
<i>Controlling for</i>					
Education & Experience		No	Yes	Yes	Yes
Occupation & Location		No	No	Yes	Yes
R-squared		0.08	0.26	0.43	0.45
Observations		9998	9998	9998	6644
<i>By Parents' Origin</i>					
Father born in Asia/Africa	SA	<b>-0.013</b> (0.048)	<b>-0.022</b> (0.042)	<b>0.005</b> (0.037)	<b>0.018</b> (0.043)
Mother born in Europe/America					
Father born in Europe/America	AA	0.138 (0.029)	-0.004 (0.026)	-0.015 (0.025)	0.014 (0.031)
Mother born in Europe/America					
Father born in Asia/Africa	SS	-0.198 (0.028)	-0.095 (0.026)	-0.060 (0.024)	-0.047 (0.029)
Mother born in Asia/Africa					
<i>Controlling for</i>					
Education & Experience		No	Yes	Yes	Yes
Occupation & Location		No	No	Yes	Yes
R-squared		0.08	0.26	0.43	0.45
Observations		9998	9998	9998	6644

Notes: The benchmark group at the top panel is women born in Israel to a father who was born in Europe or America. The benchmark group at the bottom panel is women born in Israel to a father who was born in Europe or America and to a mother who was born in Asia or Africa. In the first three columns women are Jewish salaried females working full time and full year in 1995. In the fourth column we kept only women whose husband's father origin is known. The first column in each panel reports crude wage gaps. The second column in each panel reports wage gaps conditional on potential experience and highest diploma received. The third column in each panel controls for the same set of controls as the second and a full set of dummy variables for each occupation classified by three digits and area of residence. We added a set of dummy variables for each occupations classified by one digit to control for cases where 3-digit classification is not available. We also added a dummy variable indicating missing occupation. Potential experience was calculated as age-school years completed-6 and we control for a quartic in potential experience. Highest diploma received is represented by 8 dummy variables. We control for a full set of dummy variables for each area of residence in the year of the census. In the fourth column we estimated the regression of the third column on the sample of women matched with husbands whose husband's father origin is known.

( ) Robust standard errors are reported in parenthesis

**Table 11**  
**The Gap in Log of Hourly Wages Between Women Born in Israel, by Father in Law's Origin**  
**and by both Father in Law and Own Father's Origin**  
**FTFY, Age 30-50, Israel 1995 Census Micro Files**

	(i)	(ii)	(iii)	(iv)
<i>By Father in Law's Origin</i>				
Father in Law born in Asia/Africa	<b>-0.350</b> (0.013)	<b>-0.142</b> (0.013)	<b>-0.093</b> (0.012)	<b>-0.095</b> (0.015)
<i>Controlling for</i>				
Education & Experience	No	Yes	Yes	Yes
Occupation & Location	No	No	Yes	Yes
R-squared	0.10	0.28	0.46	0.48
Observations	6644	6644	6644	4047
<i>By Own Father and Father in Law's Origin</i>				
Father born in Europe/America      HWSA	<b>-0.022</b> (0.026)	<b>-0.060</b> (0.024)	<b>-0.059</b> (0.021)	<b>-0.062</b> (0.027)
Father in Law born in Asia/Africa				
Father born in Europe/America      HWAA	0.236 (0.020)	0.055 (0.019)	0.026 (0.018)	0.005 (0.021)
Father in Law born in Europe/America				
Father born in Asia/Africa          HWSS	-0.230 (0.018)	-0.126 (0.016)	-0.084 (0.015)	-0.101 (0.018)
Father in Law born in Asia/Africa				
<i>Controlling for</i>				
Education & Experience	No	Yes	Yes	Yes
Occupation & Location	No	No	Yes	Yes
R-squared	0.13	0.28	0.46	0.48
Observations	6644	6644	6644	4047

Notes: The benchmark group at the top panel is women born in Israel that are married to a man whose father was born in Europe or America. The benchmark group at the bottom panel is women born in Israel whose father was born in Asia or Africa and are married to a man whose father was born in Europe or America. All women are Jewish salaried females working full time and full year in 1995. In the fourth column we kept only women whose husband's father origin is known and their husband worked in 1995. We included only women matched with husbands whose father's origin is known. The first column in each panel reports crude wage gaps. The second column in each panel reports wage gaps conditional on potential experience and highest diploma received. The third column in each panel controls for the same set of controls as the second and a full set of dummy variables for each occupation classified by three digits and area of residence. We added a set of dummy variables for each occupations classified by one digit to control for cases where 3-digit classification is not available. We also added a dummy variable indicating missing occupation. Potential experience was calculated as age-school years completed-6 and we control for a quartic in potential experience. Highest diploma received is represented by 8 dummy variables. We control for a full set of dummy variables for each area of residence in the year of the census. In the fourth column we estimated the regression of the third column on the sample of women matched whose husband's father origin is known and their husband worked in 1995

( ) Robust standard errors are reported in parenthesis

**Table 12**  
**Assortative Mating by Fathers' and Fathers'-in-Law**  
**Married Women Age 30-50 and their Husbands, Israel 1995 Census Micro Files**

	<b>Origin</b>			
	<b>HWAA</b>	<b>HWSA</b>	<b>HWAS</b>	<b>HWSS</b>
<b>Husband's</b>	(i)	(ii)	(iii)	(vi)
	<b>Wife's outcomes</b>			
	<b>Years of Schooling Completed</b>			
	0.438 (0.009)	0.457 (0.016)	0.419 (0.015)	0.353 (0.008)
	<b>Matriculation</b>			
	0.359 (0.011)	0.395 (0.017)	0.372 (0.015)	0.346 (0.008)
	<b>College +</b>			
	0.448 (0.010)	0.425 (0.021)	0.349 (0.018)	0.312 (0.015)
	<b>Wage Residuals<sup>^</sup></b>			
	0.227 (0.026)	0.116 (0.052)	0.109 (0.034)	0.142 (0.021)
<b>Observations</b>	8235	2991	3934	16628

Notes: Jewish married females in 1995.

Columns report regression coefficients controlling for age using a set of indicators.

<sup>^</sup> We used the sample of 4047 women from table 13b

( ) Robust standard errors are reported in parenthesis

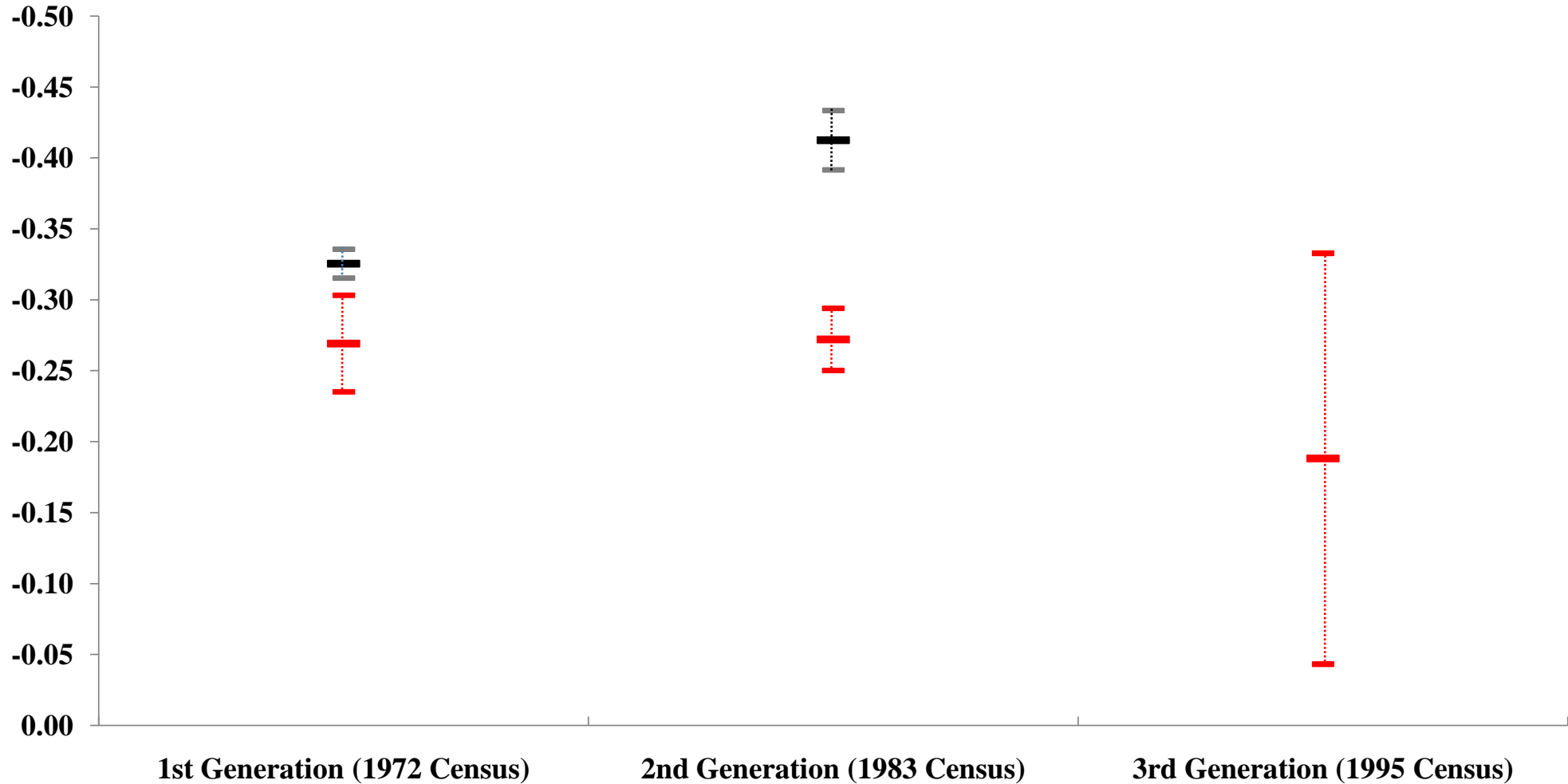
**Table 13**  
**Selection of Women into Labor Markets, Married Women Matched with Husband's Data**  
**Age 30-50, Israel 1995 Census Micro Files**

	Working FTFY		All Women			
	(i)	(ii)	(iii)	(iv)	(v)	
<i>By Father in Law's Origin</i>						
Father in Law born in Asia/Africa	<b>-0.093</b> (0.012)	<b>-0.095</b> (0.015)	<b>-0.065</b> (0.010)	<b>-0.081</b> (0.012)	<b>-0.083</b> (0.001)	
Sample Excludes Observation with Missing Husband's Wage Residuals	No	Yes	No	Yes	Yes	
Imputed Wages for Non-Working	No	No	No	No	Yes	
R-squared	0.46	0.48	0.40	0.46	0.37	
Observations	6644	4047	13128	7598	12914	
<i>By Father in Law's Origin</i>						
Father born in Europe/America Father in Law born in Asia/Africa	HWSA	<b>-0.059</b> (0.021)	<b>-0.062</b> (0.027)	<b>-0.047</b> (0.017)	<b>-0.083</b> (0.021)	<b>-0.084</b> (0.002)
Father born in Europe/America Father in Law born in Europe/America	HWAA	0.026 (0.018)	0.005 (0.021)	-0.004 (0.014)	-0.032 (0.017)	-0.030 (0.002)
Father born in Asia/Africa Father in Law born in Asia/Africa	HWSS	-0.084 (0.015)	-0.101 (0.018)	-0.074 (0.013)	-0.105 (0.016)	-0.106 (0.002)
Sample Excludes Observation with Missing Husband's Wage Residuals	No	Yes	No	Yes	Yes	
Imputed Wages for Non-Working	No	No	No	No	Yes	
R-squared	0.46	0.48	0.40	0.46	0.37	
Observations	6644	4047	13128	7598	12914	

Notes: The benchmark group at the top panel is women born in Israel that are married to a man whose father was born in Europe or America. The benchmark group at the bottom panel is women born in Israel whose father was born in Asia or Africa and are married to a man whose father was born in Europe or America. The first column reports residual wage gaps for a sample of FTFY women whose husbands' origin are known (Table 11). The second column reports residual wage gaps for a sample of FTFY women whose husbands were working and their origin are known (Table 11a). The third column reports residual wage gaps for a sample of all working women (not limited to FTFY) whose husbands' origin are known (Table W3a). The fourth column reports residual wage gaps for a sample of all working women (not limited to FTFY) whose husbands worked in 1995 and their origin are known (Table W4b). The fifth column reports the coefficients from the following procedure: (i) generate a series of residuals computed from the regression in column 4 (ii) regress these residuals on husbands' wage residuals for each origin separately and compute the residuals (iii) impute wage residuals from the second step to all women (N=12,914) (iv) finally, regress the imputed residuals on women's origin.

( ) Robust standard errors are reported in parenthesis

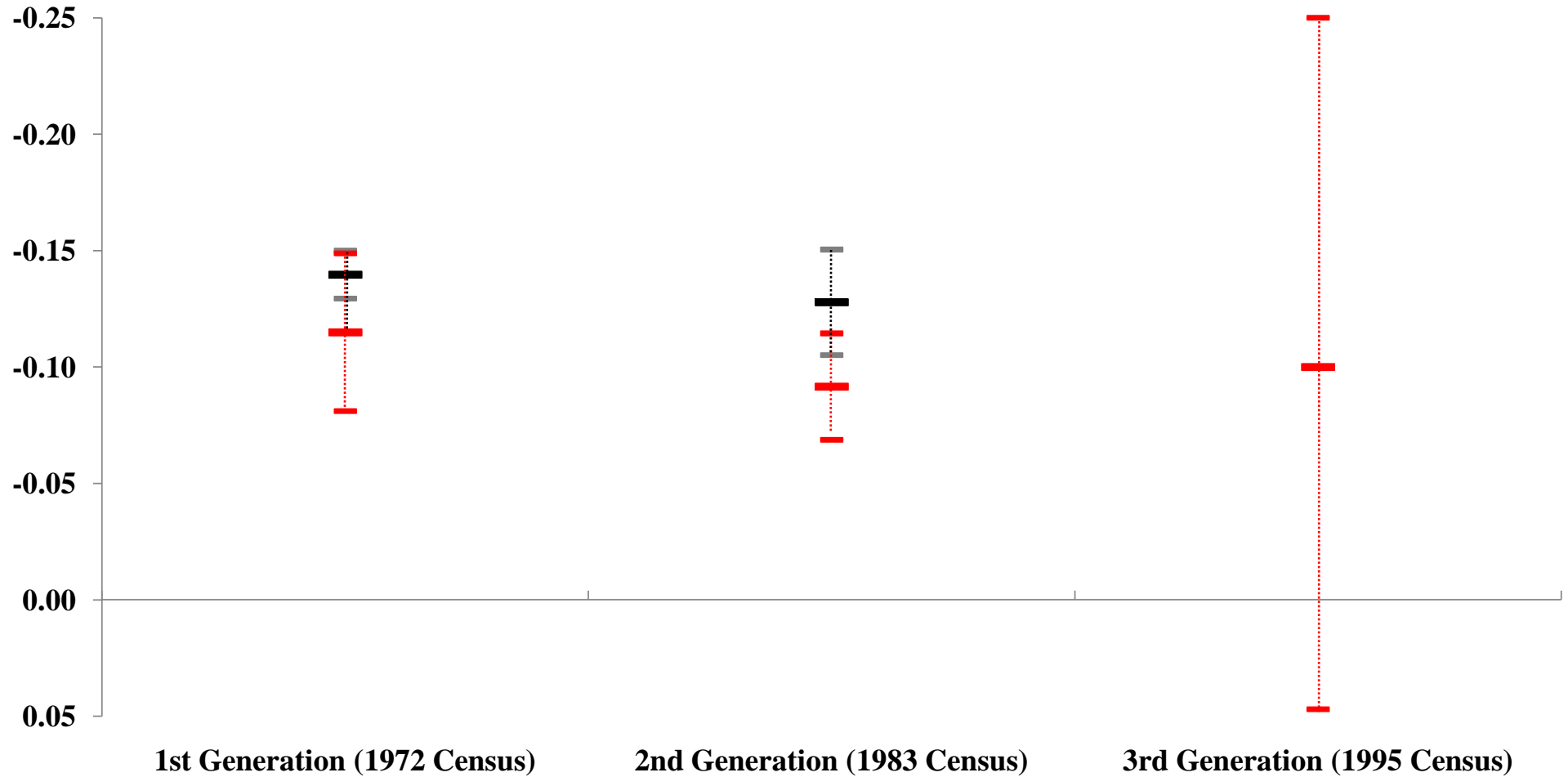
The figure shows the Sephardic-Ashkenazi crude wage gaps (and the corresponding confidence intervals) over three generations as measured among FTFY salaried male workers aged 30 to 55. In particular: (i) the gap between immigrants born in Asia/Africa relative to immigrants born in Europe/America (age 30-55 in black and age 26-32 in red ) in 1972(ii) the gap between individuals born in Israel whose parents were born in Asia/Africa relative to individuals born in Israel whose parents were born in Europe America (age 30-55 in black and age 26-32 in red ) in 1983 and (iii) the gap between individuals born in Israel whose father was born in Israel and their paternal grandfather was born in Asia/Africa relative to their counterparts whose paternal grandfather was born in Europe/America (age26-32 in red) in 1995.



**Figure 1a**

**Crude Gaps in the Log of Hourly Wages for Three Generations of Immigrants to Israel, Males, age 30-55 (age 26-32 in red)**

The figure shows the Sephardic-Ashkenazi the residuals wage gaps (and the corresponding confidence intervals) over three generations as measured among FTFY salaried male workers aged 30 to 55. In particular: (i) the gap between immigrants born in Asia/Africa relative to immigrants born in Europe/America (age 30-55 in black and age 26-32 in red ) in 1972(ii) the gap between individuals born in Israel whose parents were born in Asia/Africa relative to individuals born in Israel whose parents were born in Europe America (age 30-55 in black and age 26-32 in red ) in 1983 and (iii) the gap between individuals born in Israel whose father was born in Israel and their paternal grandfather was born in Asia/Africa relative to their counterparts whose paternal grandfather was born in Europe/America (age26-32 in red) in 1995.

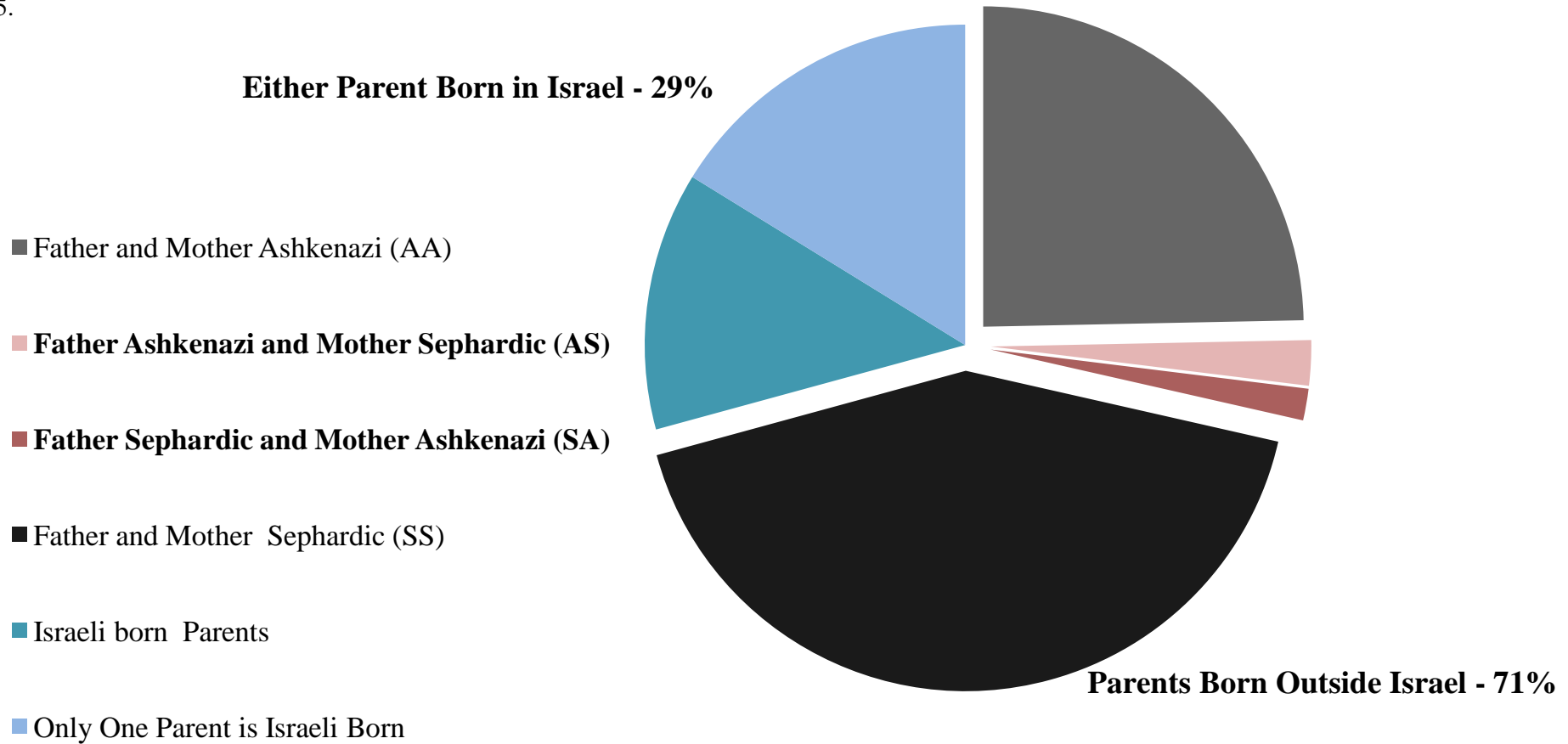


**Figure 1b**

**Gaps in the Residuals of Log of Hourly Wages for Three Generations of Immigrants to Israel, Males, age 30-55 (26-32 in red)**



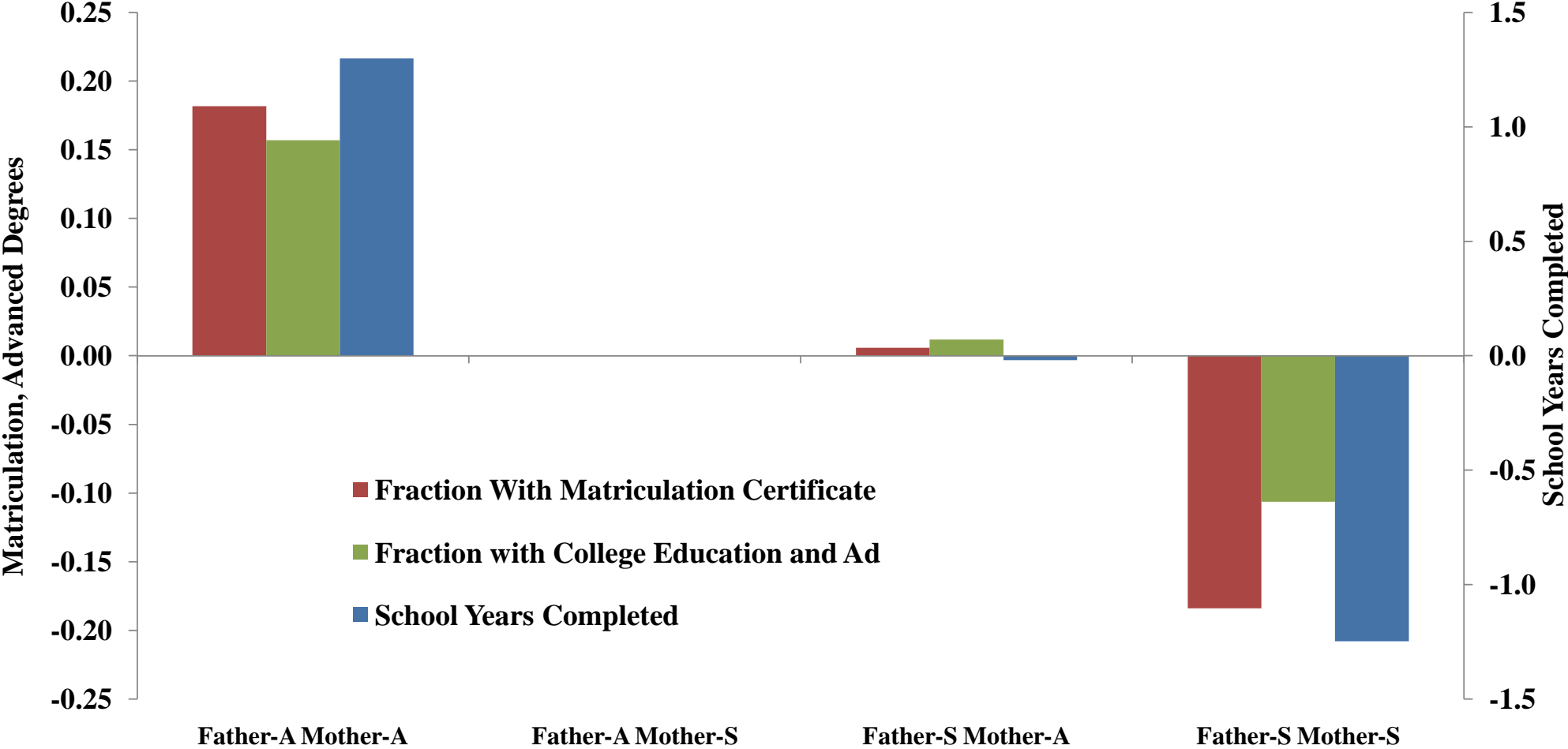
The figure divides the Israeli born Jewish population, age 22-65 in 1995, into three sub populations by parents' country of birth, namely, those born in Israel whose: (i) Both parents were born outside Israel (ii) At least one parent was born abroad (iii) Both parents were born in Israel. Those whose parents were born outside of Israel are classified into four groups by parents' continent of birth. The data is taken from the 1995 Census and included is all the Jewish population including recent immigrants. The distinction within the former USSR was done by the Israeli Central Bureau of Statistics. The two highlighted groups in the legend are AS and SA which are the focus of the paper and were about 4% of the total Israeli born Jews age 22-65 in 1995.



**Figure 2**

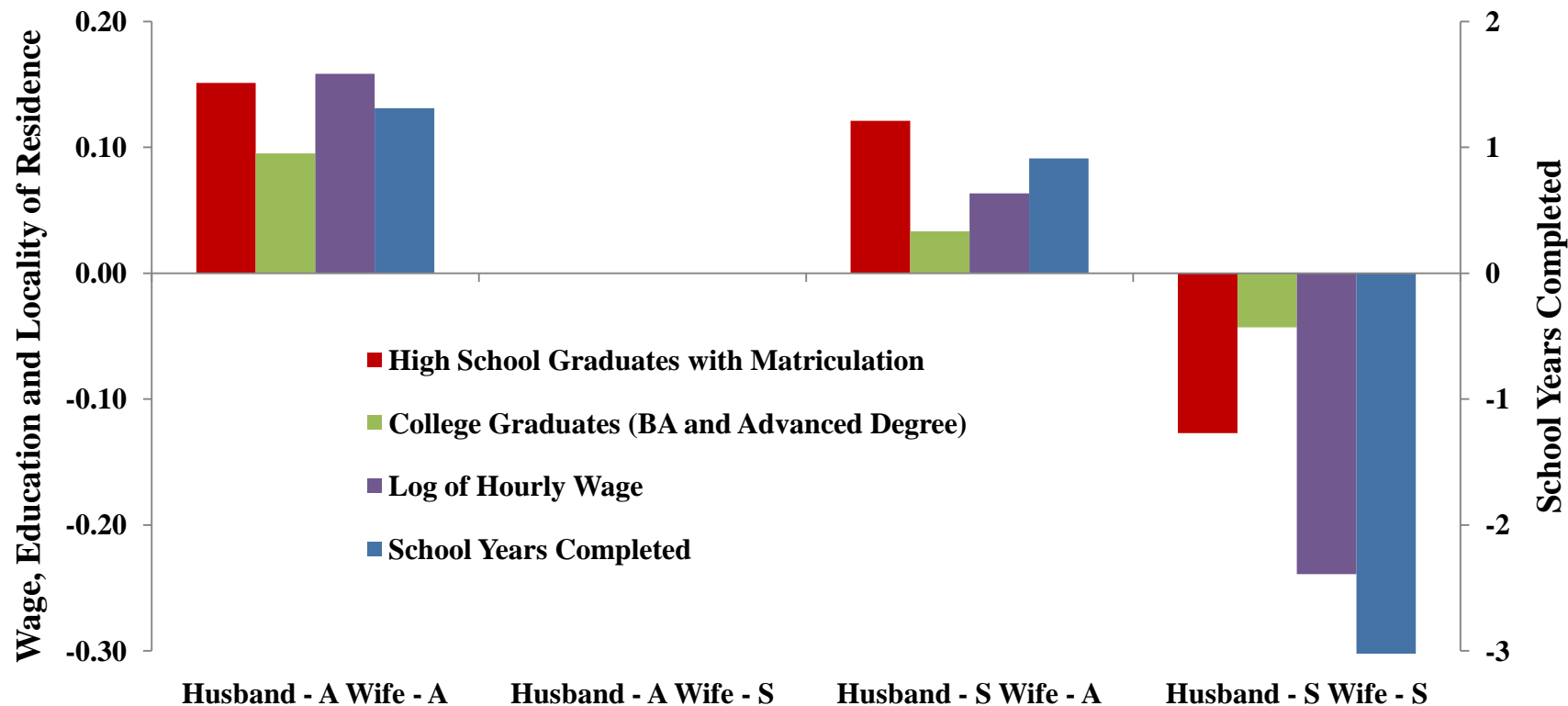
**The Composition of the Israeli Born Jewish Population in Israel Age 22-65, in 1995, by Parents Continent of Birth**

The figure shows three measures of educational gaps, in 1995, between males born in Israel to different combinations of parental origin ages 30 to 55. Educational gaps are presented relative to the comparison group of individuals born in Israel to a father who was born in Europe/America and a mother who was born in Asia/Africa (AS). The three measures of educational attainments are (i) high school graduates with matriculation certificate (BAGRUT) (ii) College and advanced degrees and (iii) number of school years completed).



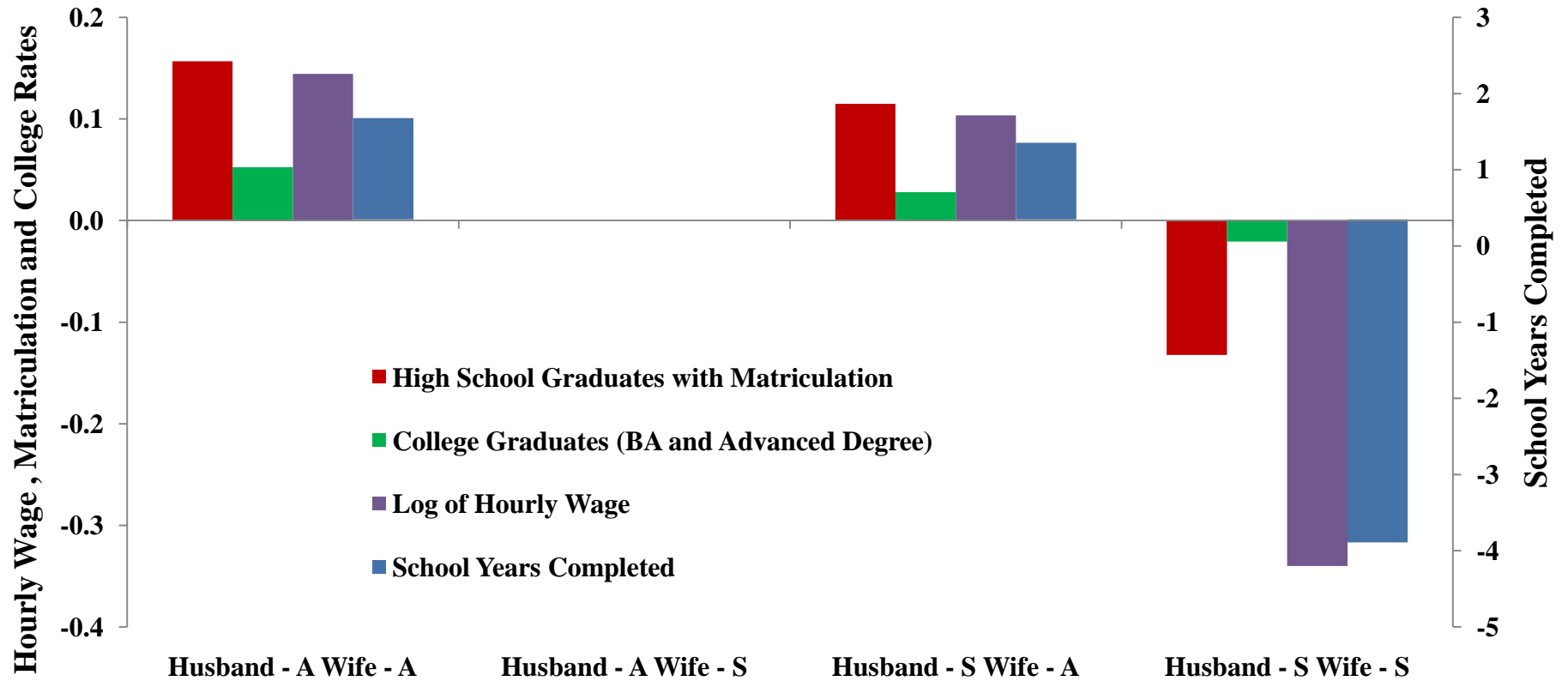
**Figure 3**  
**Age-Adjusted Gaps in Educational Attainments by Parents Origin, Males , Age 30 to 55, Measured in 1995**

To proxy parental background we use the 1972 Israeli census. We show four measures: (i) years of schooling completed, (ii) matriculation certificate, (iii) college education (or advanced degree), (iv) log hourly wages. We keep parents to children who were between the age 1-18 (at age 18 Israeli males and females join the army) in 1972. Children at this age were 24-41 years old in 1995.



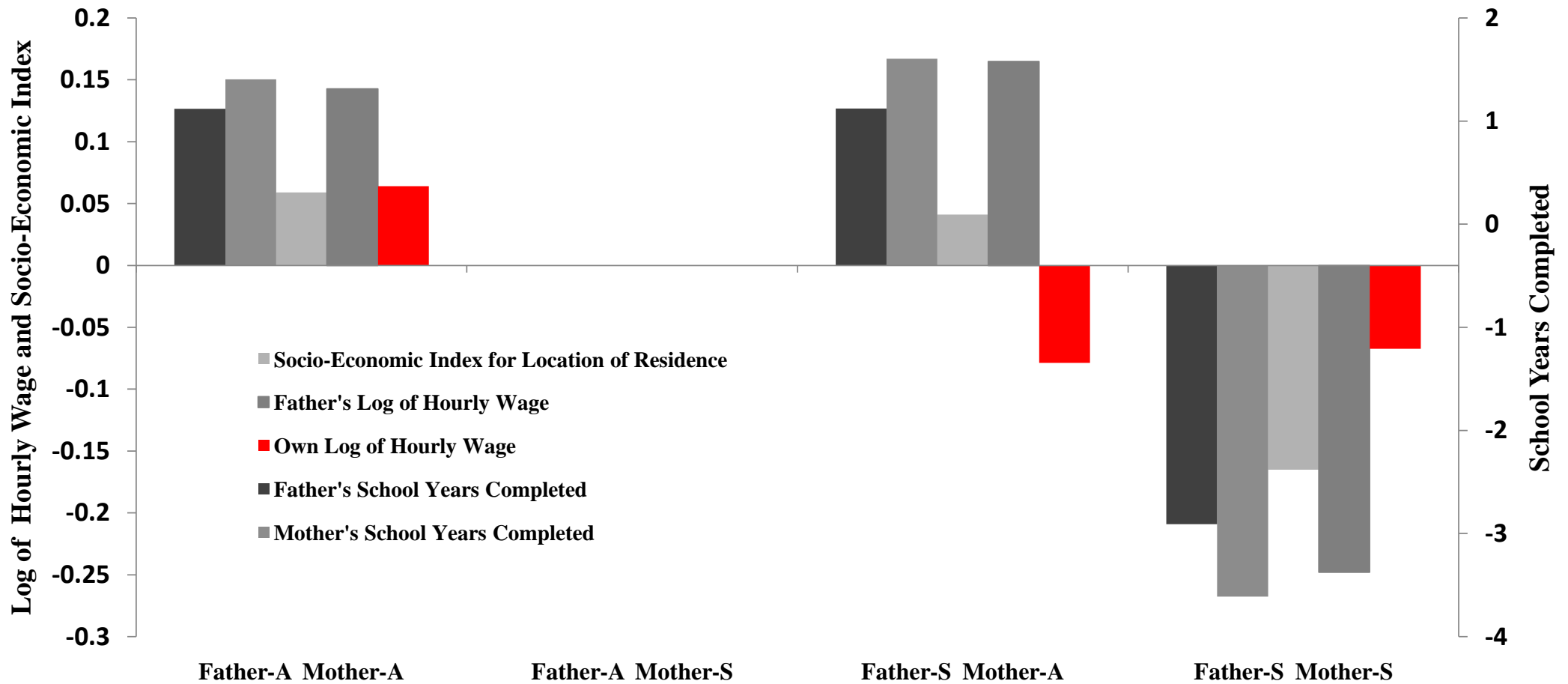
**Figure 4a**  
**Outcomes of Married Men (Fathers to Children Born between 1954-1971)**  
**by Own and Spouse's Origin, Measured in 1972**

To proxy parental background we use the 1972 Israeli census. We show four measures: (i) years of schooling completed, (ii) matriculation certificate, (iii) college education (or advanced degree), (iv) log hourly wages. We keep parents to children who were between the age 1-18 (at age 18 Israeli males and females join the army) in 1972. Children at this age were 24-41 years old in 1995.



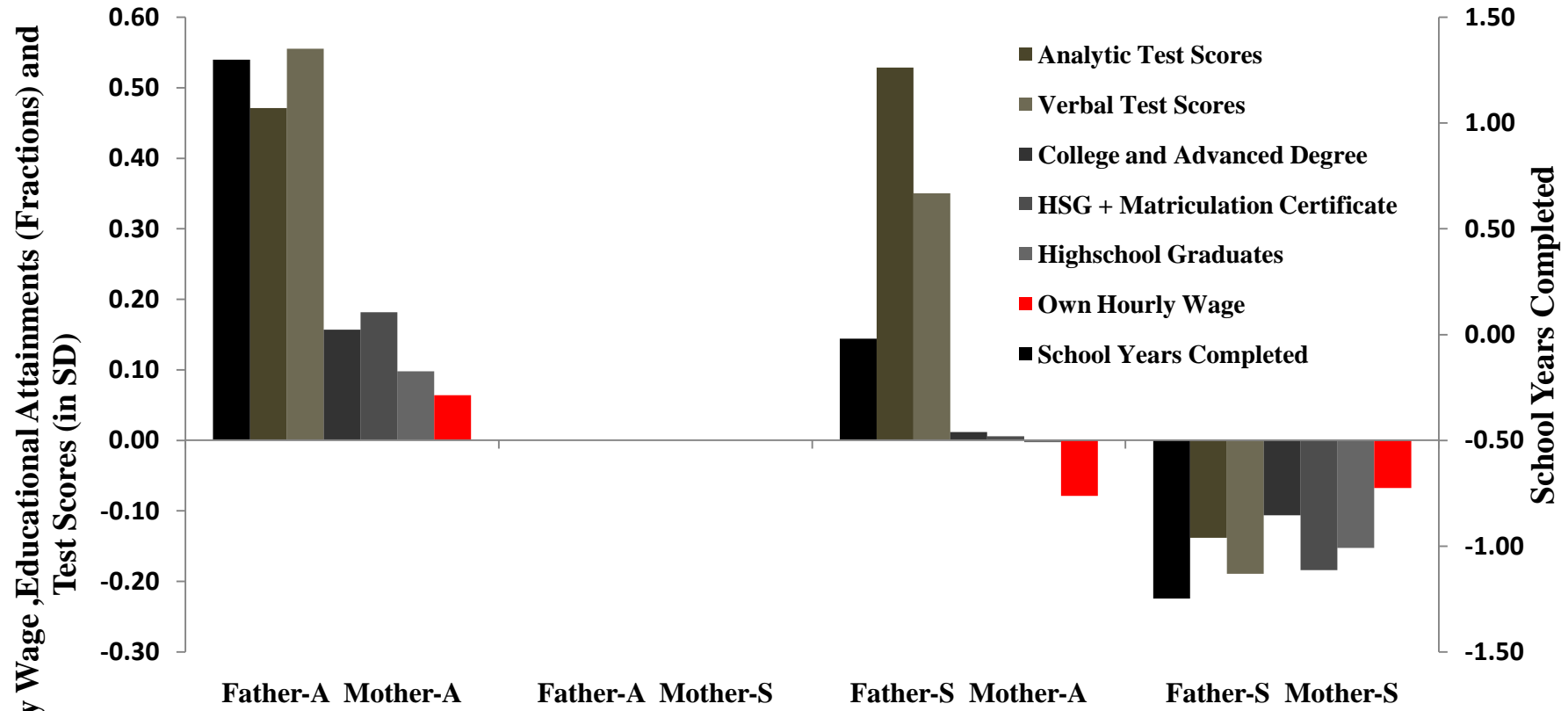
**Figure 4b**  
**Outcomes of Married Women (Mothers to Children Born between 1954-1971)**  
**by Own and Spouse's Origin, Measured in 1972**

The figure shows outcomes of parents from a synthetic cohort (hourly wage, school years completed and a Socio-Economic Index for Location of Residence) and offspring outcomes (hourly wage) for Jewish male working full time full year in 1995. The comparison group that is omitted are individuals born in Israel whose father was born in Asia/Africa and their mother was born in Europe/America. These individuals were between 30-55 years old in 1995. To proxy family background we generate "synthetic parents" assuming mothers were 20 to 35 when they gave birth. A "synthetic mother" of a person aged 35 in 1995 has the characteristics of the average married woman born in 1925-40 by her continent of origin and her spouse's origin. The "synthetic fathers" have the characteristics of those actually married to the "synthetic" mothers.



**Figure 5a**  
**Outcomes of Parents and their Offspring, Israeli Born Jewish Males in 1995, by mix of Parents Origin**

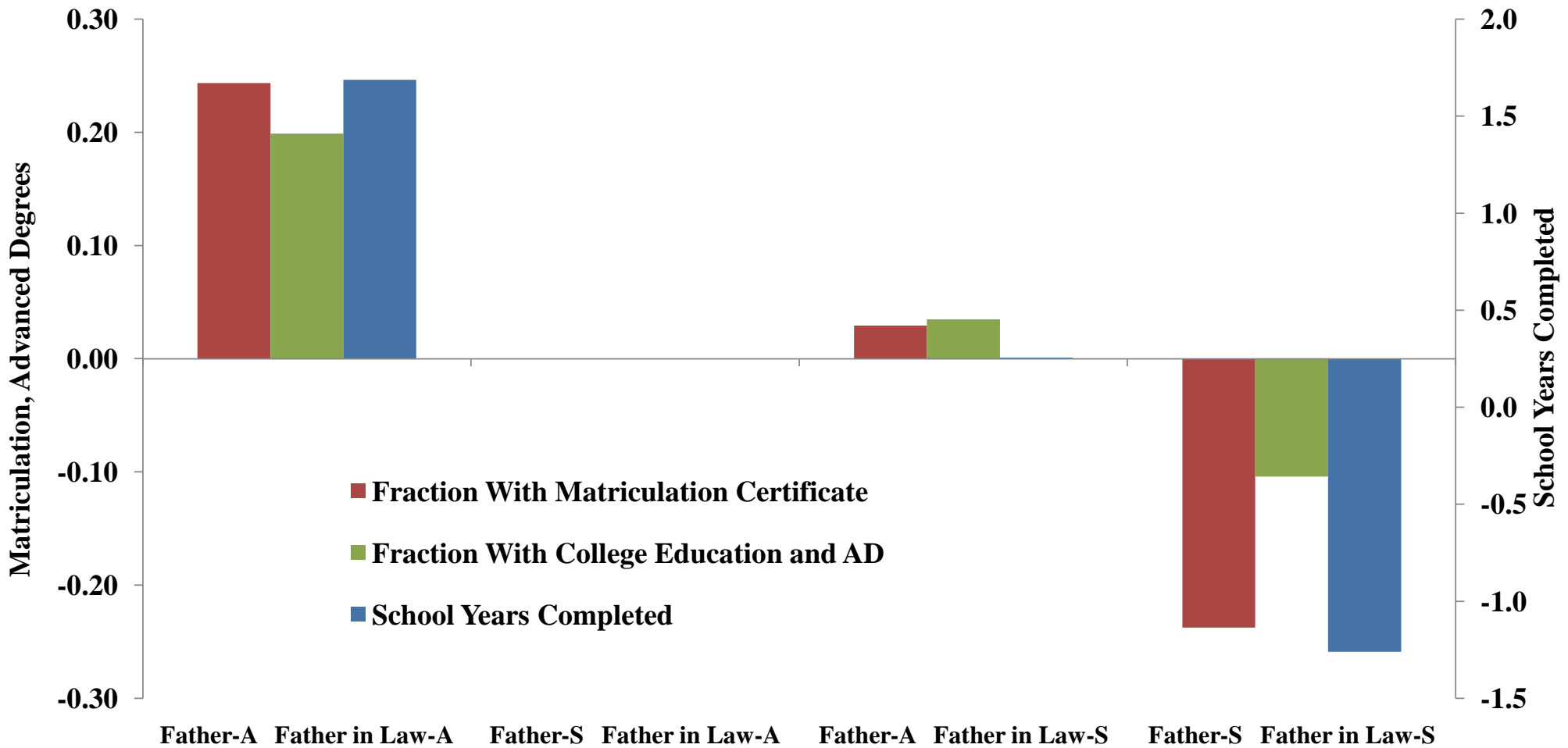
The figure shows educational outcomes gaps and hourly wage gaps for Jewish males working full time full year in 1995, across origin groups defined by father and mother continent of birth. The comparison group that is omitted are individuals born in Israel whose father was born in Asia/Africa and their mother was born in Europe/America. All educational results are coefficients on origin dummy from an OLS regression conditioning on a full set of dummies for age. The hourly wage series presents the coefficients on origin dummies from an OLS regression controlling for a quartic in experience, dummies for educational attainments and location.



**Figure 5b**  
**Outcomes of Israeli Born Jewish Males in 1995, by mix of Parents Origin**

The figure shows three measures of educational gaps, in 1995, between women born in Israel, age 30-50, and classified to four groups by their father's and father in law's origin. Educational gaps are presented relative to the comparison group of women born in Israel to a father who was born in Asia/Africa and married to a husband whose father was born in Europe/America (HWAS). The three measures of educational attainments are (i) high school graduates with matriculation certificate (BAGRUT) (ii) College and advanced degrees and (iii) number of school years completed).

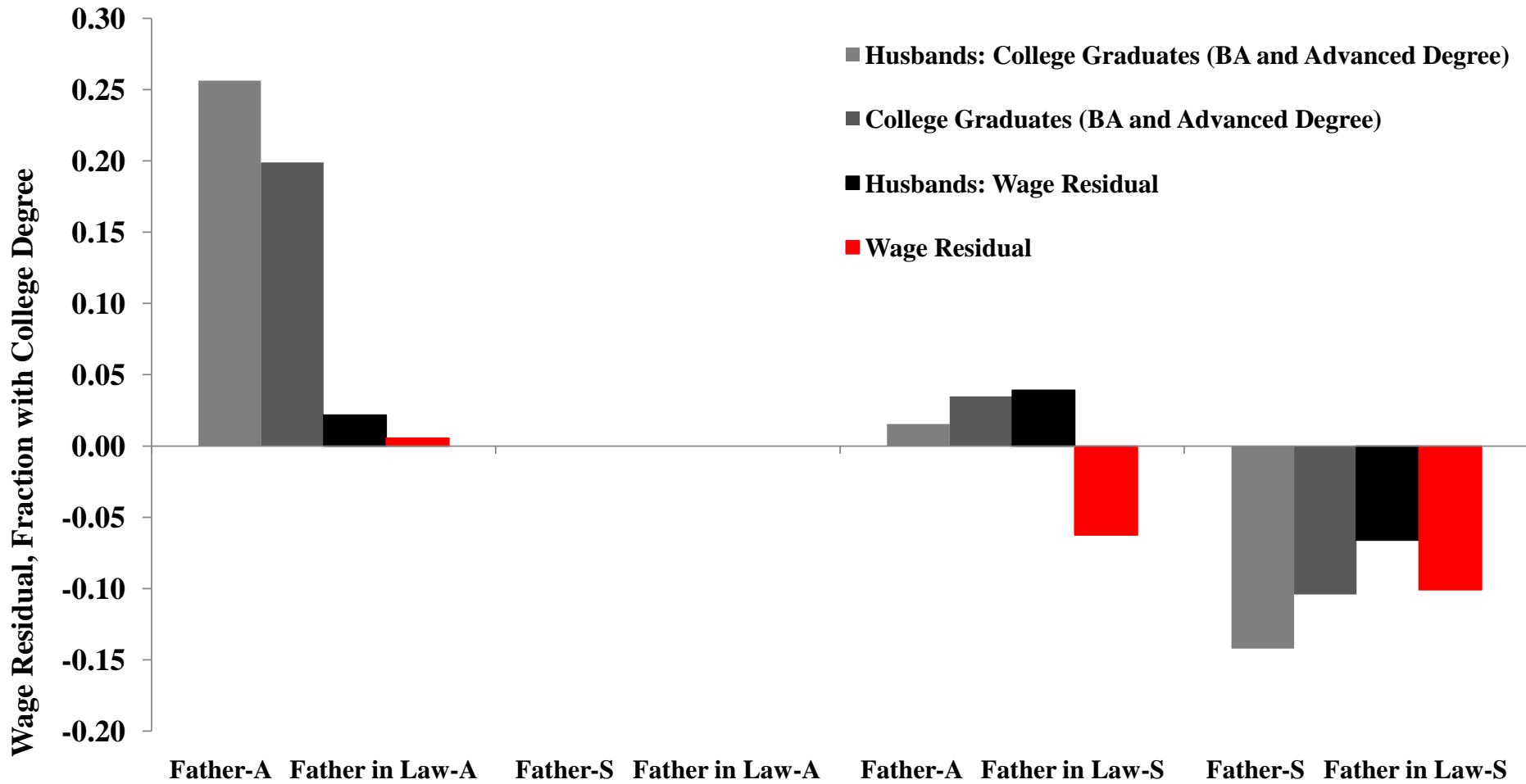
Note: The gap in school years completed between HWSA women and the benchmark group of HWAS women is 0.26 years.



**Figure 6**

**Age-Adjusted Gaps in Educational Attainments by Father and Father in Law's Origin, Women , Aged 30 to 50, Measured in 1995**

The figure shows residuals wage gaps, in 1995, between women (in red) born in Israel, age 30-50 and between their husbands (in black). The grey columns show the gaps in fraction with a BA degree among women and among their husbands. Women are classified to four groups by their father's and father in law's origin. Wage gaps are presented relative to the comparison group of women born in Israel to a father who was born in Asia/Africa and married to a husband whose father was born in Europe/America (HWAS).



**Figure 7**

**Wage Residuals and Fraction with College Degree, Own and Husband's , Women, Aged 30 to 50, Measured in 1995**



**Table A1**  
**Main Waves of Immigration to Israel Before and After the Independence of Israel,**  
**By Country of Origin of the Immigrant (Absolute Numbers)**

Time Period	America (i)	Europe (ii)	Africa (iii)	Asia (iv)	Unknown (v)	Total (vi)	Beginning of Period (vii)
<b>Before 5.15.1948</b>	7,754	377,381	4,041	40,895	52,786	482,857	
<b>After 5.15.1948</b>							
1952-1960	10,228	102,959	145,664	35,286	3,001	297,138	1,404,000
1961-1964	14,841	77,537	115,876	19,525	1,014	228,793	1,911,300
1965-1971	43,165	82,196	37,459	34,718	1,497	199,035	2,239,200
1972-1979	56,068	179,930	12,850	18,138	594	267,580	2,662,000
1980-1989	44,531	71,969	23,411	13,475	447	153,833	3,218,400
1990-1999	37,281	829,289	44,405	44,743	601	956,319	3,717,100
<b>Total by the End of 1999</b>							<b>4,701,600</b>

Notes: The table reports the total number of immigrants to Israel by country of origin and period of immigration. The last two columns (columns v and vi) report the (i) total number of immigrants (the sum of the first five columns) and (ii) The size of the population in Israel at the beginning of the period. The data is broadly divided into the periods before/after 5.15.1948 (The foundation of the state of Israel). The source of the data is the Israeli Central Bureau of Statistics (CBS)

1. Included in the table are potential immigrants and tourists who changed their status to immigrants.  
As of 1970 excluded from the table are: immigrating citizens
2. Until 1995 the Asian republics of the USSR (former) were included in Europe. As of 1996 they are included in Asia.
3. Included in the table are about 11,000 illegal immigrants and about 19,500 tourists who remained in Israel, and whose continent of residence and period of immigration are not known (Column 5 before 5.15.1948)
4. From 15.5.1948 till the end of 1969 also included in the Unknown Column are non-Jews. As of 1970 they are included according to last continent of residence.

Table A2a  
Sample Averages for Males Born in Israel to Parents of Mixed Origin, Age 30-55, Census of 1995

	All Individuals (N=49,346)				FTFY Sample (N=18,659)			
	AA	AS	SA	SS	AA	AS	SA	SS
<b><u>Distribution</u></b>								
Fractions	0.38	0.03	0.02	0.58	0.42	0.03	0.02	0.53
Numbers	18530	1424	778	28614	7842	548	293	9976
<b><u>Marital status</u></b>								
Married	0.88	0.84	0.84	0.85	0.91	0.88	0.91	0.91
Divorced	0.05	0.05	0.05	0.04	0.04	0.04	0.02	0.02
Widowed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single	0.07	0.10	0.10	0.11	0.05	0.08	0.06	0.07
<b><u>Education<sup>^</sup></u></b>								
School Years Completed	13.9	12.8	12.7	11.5	14.4	13.1	12.9	11.8
HSD_0	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
HSD_1_4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HSD_5_8	0.03	0.05	0.07	0.12	0.02	0.03	0.06	0.09
HSD_9_11	0.08	0.13	0.12	0.20	0.05	0.10	0.12	0.20
HSG	0.21	0.32	0.30	0.35	0.20	0.31	0.33	0.37
HSGBAG	0.12	0.15	0.15	0.10	0.11	0.15	0.10	0.10
POSTSEC	0.19	0.16	0.15	0.13	0.21	0.18	0.16	0.14
BA	0.22	0.13	0.14	0.06	0.24	0.16	0.13	0.07
AD	0.14	0.06	0.07	0.02	0.16	0.07	0.09	0.02

<sup>^</sup> HSD=High school dropout (number suffix represents school years completed) , HSG=High school graduate certificate,  
HSGBAG=High school graduate with a matriculation certificate POSTSEC=Postsecondary education BA=College graduate, AD=Advanced degree

Sample Averages for Males Born in Israel to Parents of Mixed Origin, Age 30-55, Census of 1995 (Continued)

	All Individuals (N=49,346)				FTFY Sample (N=18,659)			
	AA	AS	SA	SS	AA	AS	SA	SS
<b><u>Labor Market</u></b>								
Worked	0.79	0.77	0.77	0.71	1.00	1.00	1.00	1.00
FTFY	0.68	0.63	0.63	0.57	1.00	1.00	1.00	1.00
Self Employed	0.18	0.18	0.20	0.17	0.00	0.00	0.00	0.00
Salaried	0.62	0.60	0.58	0.56	1.00	1.00	1.00	1.00
Other^	0.20	0.21	0.21	0.26	0.00	0.00	0.00	0.00
Government	0.30	0.28	0.27	0.27	0.29	0.24	0.25	0.25
Potential Experience	22.7	18.6	20.3	20.1	22.2	18.1	20.5	19.8
Log of Hourly Earnings	-----	-----	-----	-----	3.65	3.38	3.31	3.19
<b><u>Occupations</u></b>								
Academic Professionals	0.17	0.09	0.09	0.03	0.21	0.12	0.12	0.05
Associate Professionals and Technicians	0.09	0.08	0.09	0.05	0.11	0.12	0.11	0.08
Managers	0.15	0.09	0.12	0.05	0.21	0.14	0.16	0.08
Clerical Workers	0.09	0.09	0.08	0.07	0.13	0.15	0.13	0.14
Agents, Sales Workers and Service Workers	0.09	0.13	0.13	0.11	0.09	0.13	0.14	0.12
Skilled Agricultural	0.02	0.02	0.02	0.02	0.00	0.01	0.01	0.01
Industry, Construction and Other Skilled Workers	0.14	0.23	0.21	0.32	0.16	0.25	0.28	0.42
Unskilled	0.02	0.02	0.02	0.04	0.02	0.03	0.02	0.06
Missing Occupation^^	0.24	0.26	0.24	0.30	0.07	0.05	0.03	0.05

^ Individuals who were not self employed or salaried workers worked in a cooperative, kibbutz or as unpaid family members

^^ Individual did not work or occupation is either not reported or reported with an error

Sample Averages for Males Born in Israel to Parents of Mixed Origin, Age 30-55, Census of 1995 (Continued)

	All Individuals (N=49,346)				FTFY Sample (N=18,659)			
	AA	AS	SA	SS	AA	AS	SA	SS
<b><u>Locality in 1995</u></b>								
<i><u>Three Major Cities</u></i>	<b>0.24</b>	<b>0.23</b>	<b>0.23</b>	<b>0.17</b>	<b>0.24</b>	<b>0.22</b>	<b>0.24</b>	<b>0.17</b>
Jerusalem	0.06	0.07	0.07	0.07	0.05	0.05	0.09	0.07
Tel Aviv	0.10	0.10	0.10	0.07	0.09	0.10	0.08	0.07
Haifa	0.08	0.06	0.06	0.03	0.10	0.07	0.06	0.03
<i><u>Localities 2-199K</u></i>	<b>0.65</b>	<b>0.68</b>	<b>0.68</b>	<b>0.75</b>	<b>0.76</b>	<b>0.78</b>	<b>0.76</b>	<b>0.83</b>
100-199K	0.26	0.31	0.30	0.29	0.28	0.35	0.33	0.31
20-100K	0.29	0.25	0.29	0.32	0.35	0.28	0.32	0.37
2 -20k	0.11	0.11	0.09	0.14	0.12	0.14	0.11	0.16
<i><u>Rural areas</u></i>	<b>0.06</b>	<b>0.05</b>	<b>0.05</b>	<b>0.06</b>	-----	-----	-----	-----
Moshav	0.06	0.05	0.05	0.06	-----	-----	-----	-----
Kibbutz	0.0	0.0	0.0	0.0	-----	-----	-----	-----
<i>Other</i>	<b>0.04</b>	<b>0.04</b>	<b>0.03</b>	<b>0.03</b>	-----	-----	-----	-----

Table A2b

Sample Averages for Females Born in Israel to Parents of Mixed Origin, Age 30-50, Census of 1995

	All Individuals (N=46,746)				FTFY Sample (N=9,998)			
	AA	AS	SA	SS	AA	AS	SA	SS
<b><u>Distribution</u></b>								
Fractions	0.34	0.03	0.02	0.62	0.36	0.03	0.02	0.59
Numbers	15881	1314	735	28816	3583	327	166	5922
<b><u>Marital status</u></b>								
Married	0.83	0.81	0.82	0.84	0.76	0.81	0.81	0.80
Divorced	0.08	0.09	0.08	0.07	0.11	0.09	0.08	0.09
Widowed	0.02	0.01	0.01	0.01	0.02	0.00	0.01	0.01
Single	0.08	0.09	0.08	0.08	0.12	0.10	0.10	0.10
<b><u>Education<sup>^</sup></u></b>								
School Years Completed	13.9	12.8	13.1	11.8	14.1	13.1	13.1	12.0
HSD_0	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
HSD_1_4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HSD_5_8	0.03	0.05	0.05	0.10	0.01	0.02	0.02	0.05
HSD_9_11	0.05	0.09	0.09	0.17	0.04	0.07	0.05	0.14
HSG	0.20	0.29	0.25	0.34	0.20	0.28	0.28	0.38
HSGBAG	0.18	0.22	0.22	0.16	0.21	0.26	0.32	0.23
POSTSEC	0.23	0.18	0.17	0.14	0.17	0.15	0.11	0.12
BA	0.23	0.12	0.16	0.06	0.24	0.15	0.17	0.07
AD	0.09	0.04	0.06	0.02	0.12	0.06	0.04	0.01

<sup>^</sup> HSD=High school dropout (number suffix represents school years completed) , HSG=High school graduate certificate,

HSGBAG=High school graduate with a matriculation certificate POSTSEC=Postsecondary education BA=College graduate, AD=Advanced degree

Sample Averages for Females Born in Israel to Parents of Mixed Origin, Age 30-50, Census of 1995 (Continued)

	All Individuals (N=46,746)				FTFY Sample (N=9,998)			
	AA	AS	SA	SS	AA	AS	SA	SS
<b><u>Labor Market</u></b>								
Worked	0.70	0.66	0.69	0.59	1.00	1.00	1.00	1.00
FTFY	0.31	0.32	0.32	0.28	1.00	1.00	1.00	1.00
Self Employed	0.07	0.06	0.06	0.03	0.00	0.00	0.00	0.00
Salaried	0.64	0.61	0.63	0.56	1.00	1.00	1.00	1.00
Other^	0.29	0.33	0.31	0.40	0.00	0.00	0.00	0.00
Government	0.47	0.38	0.38	0.36	0.47	0.39	0.37	0.44
Potential Experience	21.2	18.3	18.6	19.4	21.2	18.1	18.6	19.4
Log of Hourly Earnings	-----	-----	-----	-----	3.33	3.19	3.18	2.99
<b><u>Occupations</u></b>								
Academic Professionals	0.16	0.07	0.09	0.03	0.18	0.09	0.07	0.03
Associate Professionals and Technicians	0.17	0.12	0.15	0.09	0.13	0.10	0.14	0.08
Managers	0.03	0.03	0.03	0.01	0.07	0.07	0.04	0.03
Clerical Workers	0.22	0.26	0.22	0.23	0.44	0.51	0.49	0.56
Agents, Sales Workers and Service Workers	0.09	0.12	0.15	0.13	0.10	0.13	0.16	0.16
Skilled Agricultural	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Industry, Construction and Other Skilled Workers	0.01	0.01	0.02	0.03	0.02	0.02	0.05	0.05
Unskilled	0.01	0.02	0.02	0.05	0.01	0.02	0.02	0.04
Missing Occupation^^	0.31	0.36	0.32	0.42	0.05	0.06	0.04	0.03

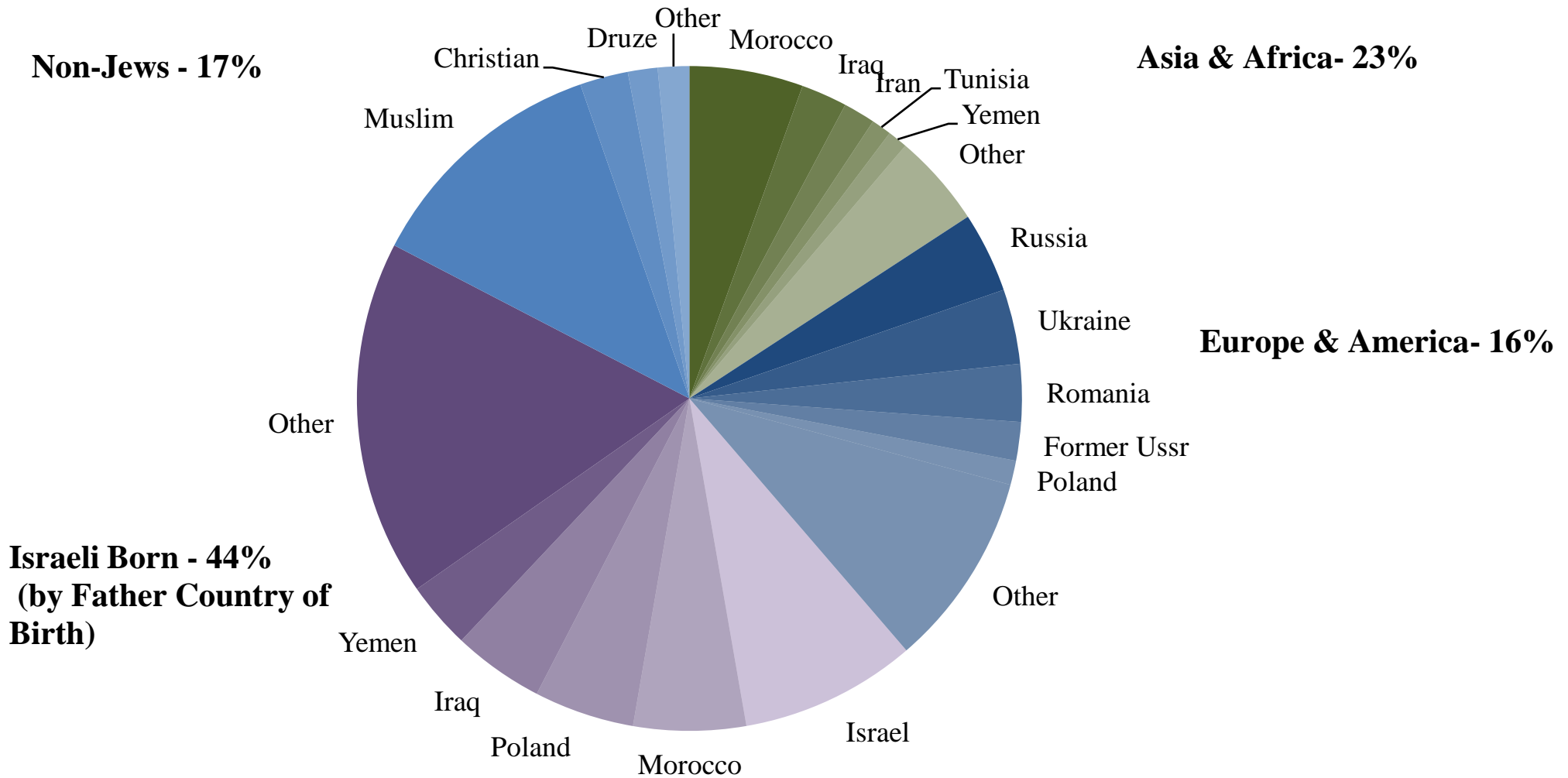
^ Individuals who were not self employed or salaried workers worked in a cooperative, kibbutz or as unpaid family members

^^ Individual did not work or occupation is either not reported or reported with an error

Sample Averages for Females Born in Israel to Parents of Mixed Origin, Age 30-50, Census of 1995 (Continued)

	All Individuals (N=46,746)				FTFY Sample (N=9,998)			
	AA	AS	SA	SS	AA	AS	SA	SS
<b><u>Locality in 1995</u></b>								
<i><u>Three Major Cities</u></i>	<b>0.25</b>	<b>0.23</b>	<b>0.24</b>	<b>0.17</b>	<b>0.30</b>	<b>0.26</b>	<b>0.25</b>	<b>0.21</b>
Jerusalem	0.07	0.07	0.08	0.07	0.06	0.08	0.08	0.09
Tel Aviv	0.10	0.11	0.10	0.07	0.13	0.12	0.11	0.08
Haifa	0.09	0.06	0.05	0.03	0.11	0.06	0.07	0.04
<i><u>Localities 2-199K</u></i>	<b>0.65</b>	<b>0.70</b>	<b>0.68</b>	<b>0.75</b>	<b>0.70</b>	<b>0.74</b>	<b>0.75</b>	<b>0.79</b>
100-199K	0.26	0.31	0.29	0.30	0.26	0.32	0.35	0.32
20-100K	0.29	0.27	0.29	0.32	0.34	0.31	0.25	0.33
2 -20k	0.10	0.12	0.11	0.13	0.10	0.11	0.14	0.14
<i><u>Rural areas</u></i>	<b>0.06</b>	<b>0.05</b>	<b>0.04</b>	<b>0.05</b>	-----	-----	-----	-----
Moshav	0.06	0.05	0.04	0.05	-----	-----	-----	-----
Kibbutz	0.0	0.0	0.0	0.0	-----	-----	-----	-----
<i>Other</i>	<b>0.04</b>	<b>0.02</b>	<b>0.04</b>	<b>0.02</b>	-----	-----	-----	-----

The figure divides the population in Israel, age 22-65 in 1995, into four sub populations by continent of origin and religion : (i) Jews born in Europe or America (ii) Jews born in Asia or Africa and (iii) Jews born in Israel (iv) Non Jews. For the first two sub groups we present the five main countries of origin. For the Israeli born Jewish population we present the main five countries where the father was born. The rest of the countries of origin are presented under the category Other. The data is from the 1995 Census and included is all the Israeli population including recent immigrants. The distinction within the former USSR was done by the Israeli Central Bureau of Statistics.

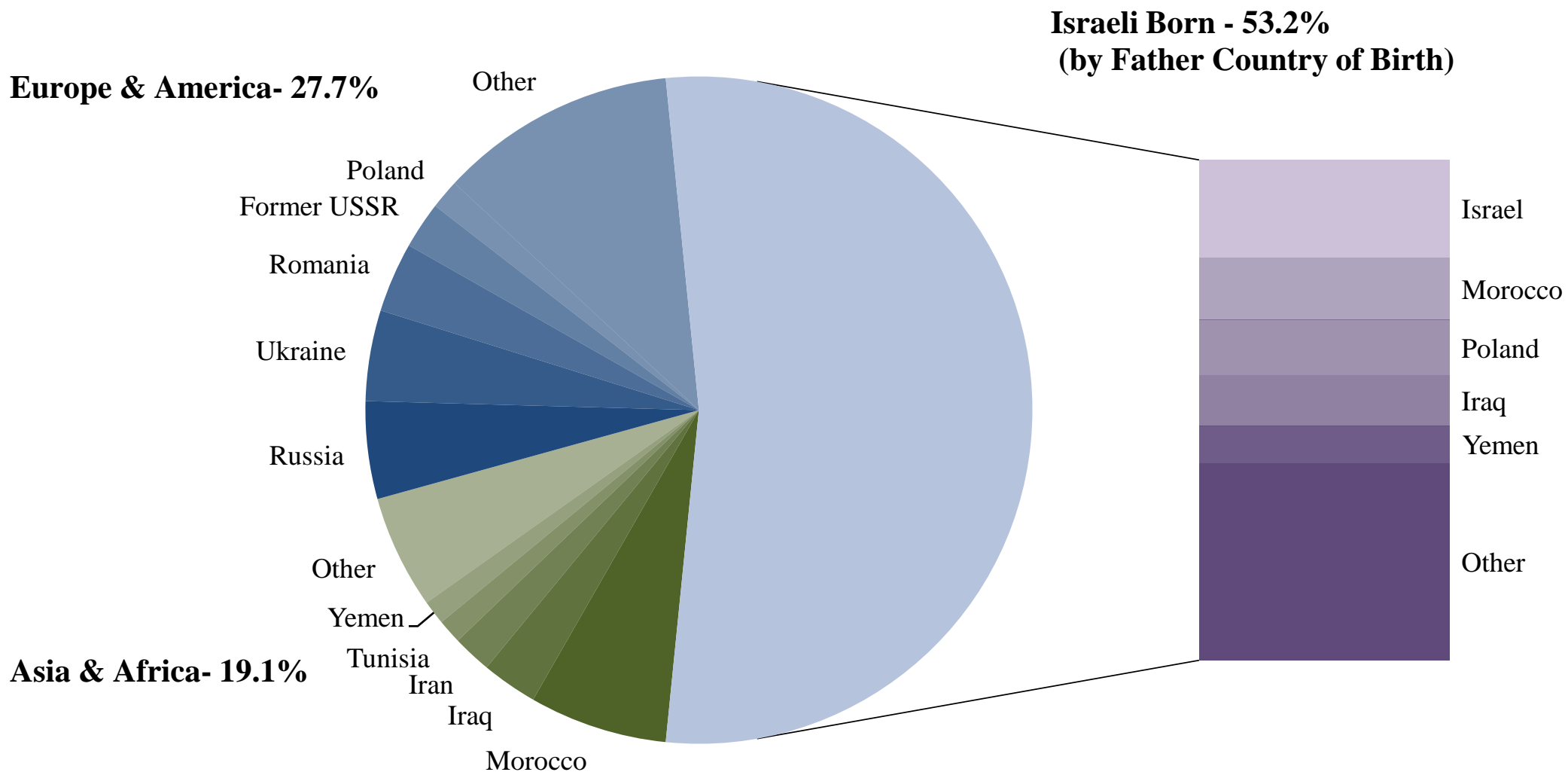


**Figure W1**

**The Composition of the Population in Israel , in 1995, by Continent of Origin, Religion and Five Main Countries of Origin**



The figure divides the Israeli Jewish population, age 22-65 in 1995, into three sub populations by continent of origin, namely, those born in: (i) Europe or America (ii) Asia or Africa and (iii) those born in Israel. For the first two sub groups we present the five main countries of origin. For the Israeli born population we present the main five countries where the father was born. The rest of the countries of origin are presented under the category Other. The data is from the 1995 Census and included is all the Israeli Jewish population including recent immigrants. The distinction within the former USSR was done by the Israeli Central Bureau of Statistics.



**Figure W2**

**The Composition of the Jewish Population in Israel, in 1995, by Continent and Five Main Countries of Origin**

## A Data Appendix

### Israeli Census Data

The 1983 and 1995 Censuses were conducted by the Central Bureau of Statistics in May and June of 1983 and October-November of 1995. These were the fourth and fifth censuses on Population and Housing in Israel. Both consist of two types of questionnaires: (1) *Short Questionnaire*, which was distributed to 80% of dwellings and collected information on basic demographics for each household resident; (2) *Long Questionnaire*, which was distributed to the remaining 20% of households and administered to individuals 15 or older and which collected basic demographics, data regarding geographical mobility, marriage and fertility, education and language use, work and income, commutes to work and living conditions.

After completion and collection of the questionnaires, two types of checks were made: (i) procedural checks designed to determine the final frame of households and persons; (ii) subject matter checks that completed missing data by cross-checking it with the population register and eliminating inconsistencies within households or individuals. About 16% of individual records and 5% of family records showed subject matter deficiencies. Missing data that were not completed by subject matter correction was completed through allocation procedures. The number of allocated records is relatively small (e.g: 0.3% of gender data, 0.5% on year of birth, 0.3% on family status). Data reported on the short questionnaire (also for individuals who completed it as part of the long questionnaire) were checked for errors or missing values. Erroneous data were then deleted, corrected, supplemented or imputed. Data were supplemented by linking census data to those of the Population Register. In cases where data could not be supplemented, the CBS imputed data values based on similar demographic and geographic characteristics.

In this paper we use the 20 percent public-use micro-files from the 1995 and 1983 Israeli censuses. Subject matter checks were conducted for the long questionnaire. Reports not classified as "acceptable response" were eliminated. The data were checked for logical contradictions between responses to questions with similar subjects. Only "definite contradictions" were handled. Inconsistencies classified as "confirmed inconsistency" were corrected using other reports taken either from the short questionnaire or within subject matter.

After the above procedures were complete, non-acceptable data had been eliminated the sample file, but cases of missing records remained. Finally, missing data were

imputed in the following way: (1) records of households were imputed using data from similar households (2.2% of all households in the 1995 sample file), and (2) individual records were imputed using either information taken from other variables or available data on persons with similar demographic and geographic characteristics.

Missing income of salaried individuals was not imputed for 1983. In 1995 missing income data were filled by data from Social Security. Extreme values were either corrected by data from Social Security reports or by statistical imputations.

Country of birth was defined according to country borders at the time of the census. In 1995 this rule took into account changes in national borders resulting from war and other political changes. For example, residents born in the former Czechoslovakia were asked to indicate whether they were born in the Czech Republic or in Slovakia. Countries were classified into continents as one unit, even if located on two continents. For example all of Turkey is included in Asia. Since many persons born in the former Soviet Union as well as Israeli-born individuals whose parents were born in the former Soviet Union do not usually specify the republic of their (or their parents') birth, or simply use the term Russia, there is no way to distinguish between the Asian and European Republics; thus, they were all classified under Europe. Unlike the 1983 census, the 1995 "both parents" country of birth is reported for Israeli-born Jews.

Income from salaried work was reported as income received for working as an employee (those who were also self-employed were asked to report their income from self-employment in a separate question). Individuals reported gross income before income tax, social security, payments to retirements funds and any other deductibles. [Missing income data were filled by data from Social Security](already said multiple times). Extreme values were either corrected for by data from Social Security reports or statistical imputations.

Our sample begins with the 20% sample census after all aforementioned deletions, corrections, supplementation and imputations have been made. We keep only Jewish males from ordinary households with valid demographic data who are between 22-65 years old at the time of the survey. We further keep individuals who are not currently in school and we report school years completed between 0 and 25. Our wage sample includes individuals who were employed as part of the civilian labor force in the prior week or 12 months prior to the survey. We exclude observations with missing or imputed wages, as well as the self-employed. We focus on full time (more than 35 work hours per week) full year (12 month) workers.