Pride and Prejudice: Evidence from the "Promised Land"[*]

Yona Rubinstein[†] and Dror Brenner[‡]

October 31, 2008

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 historical 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 achievements, higher scores on cognitive tests, and higher levels of parental education and earnings than their AS peers – suggesting that our estimates provide lower bounds for the impact of ethnic affiliation on wages. Jewish females born to Sephardic fathers and Ashkenazi mothers (SA) are as likely of carrying a Sephardic surname as do their AS counterparts, as both groups marry Sephardic and Ashkenazi men in roughly equal proportions, and most Israeli women tend to change their surnames to their husbands' names once

[†]Brown University.
[‡]Tel Aviv University.

married. Consistent with our interpretation of the results for males, we find no difference between the hourly wages of AS and SA women. We also find that Sephardic affiliation has a much larger impact during early years in the labor market than in later years. These findings are consistent with the interpretation that firms employ ethnic stereotypes and statistically discriminate among equally productive workers in the absence of perfect information on workers' productivity.

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)[1], it is well recognized that ethnic diversity has profound and far-reaching implications for social welfare and economic achievements, both within societies by affecting the relative economic outcomes of different groups, and between economies by influencing national rates of economic growth.[2]

Today, four decades after the passage of Brown v. Board of Education, the Civil Right 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 achievement (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 the black and whites in the United States. A large body of research (summarized in Altonji and Blank, 1999; Neal, 2007) documents that, according to available measures, blacks are less skilled than whites and earn less than their white counterparts. Yet, the source of differences in educational achievements, wage rates

---

[1]Followed by Durlauf (1992) and Benabou (1993, 1994), who emphasized the feedback impact of pre-labor market discrimination on the accumulation of human capital by future generations and the work by Coate and Loury (1993) who studied the implications of statistical discrimination through self-fulfilling prophecies when information is imperfect.

[2]Easterly's and Levine's (1997) documents the correlation between country level ethnic diversity and a range of economic and public policy outcomes 1965-1990.

Knack and Keefer (1997) find that a standard deviation increase in country-level trust predicts an increase in economic growth of more than one-half of a standard deviation.

La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997) report that a standard deviation increase in trust increases judicial efficiency and reduces government corruption by 0.7 and 0.3 of a standard deviation respectively

and earnings is not well established.

Ethnic stereotypes and group differences in educational achievements, earnings, and social outcomes are not limited to the United States. For instance, the Israeli Jewish society is characterized by an ethnic cleavage commonly recognized on the basis of geo-cultural origin between two groups: those of European or American descent, largely the "Ashkenazim" ("Ashkenaz" meaning "Germany" in Medieval Hebrew, denoting their Central European base), the dominant group in Israeli society; and the Asian-Africans, largely the "Sephardim" ("Sefarad" meaning "Spain" or "Iberia" in Hebrew, denoting their Spanish and Portuguese base).[3] 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.[4]

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[5], there are large and persistent ethnic related disparities among Israeli-born Jews on many indicators of social welfare and economic success, including educational achievement (Lewin-Epstein and Semyonov, 1993; Cohen and Haberfeld, 1998), earnings (Haberfeld and Cohen, 2006), juvenile delinquency and adult criminal involvement (Fishman et al., 1984; Ajzenstadt, 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

---

[3]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.

[4]For religious purposes, 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.

[5]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).

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 States during the mid 1990s, as reported by Altonji and Blank (1999).[6]

The large disparities in economic success are well reflected in the marriage market.[7] Most marriages are within the "Ashkenazi" and the "Sephardic" groups (Goldscheider, 2002; Table 2a). Similar to the US, the odds of interethnic union increase with couples' educational attainment (Qian 1997 for the US; Table 2b) and there is less ethnic disparity in measures of educational achievement and economic success among the population if 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).[8]

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 of 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, employed even by the Justice system, is the "Buzaglo test". Buzaglo - a well- recognized typical Moroccan-Jewish last name - is a placeholder for a simple lower-class citizen. The "Buzaglo test", a coin termed 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

---

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

[7]"Ethnicity", is one of the top 10 characteristics on the popular Jewish singles network JDate.com (Figure 1).

[8]The best-known of these differences relates to the holiday of Passover, where Sephardic Jews may eat legumes, rice, corn, peanuts and beans during this holiday, while Ashkenazi Jews prohibit these foods.

4

treated.

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 achievements, educational attainment and family background - *but* different ethnic surnames. Israeli Jews born 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). 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 taste, prejudice and ethnic stereotypes on labor market outcomes of equally productive members of a society.

Recent studies have 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, have 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 at firms that employ ethnic workers, rather than by the average levels of taste for discrimination. Hence, despite the 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 studies evaluate 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 neither exogenous to peoples' human capital

nor to their labor market outcomes (Becker 1973, 1974, 1981). 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 the measured ethnic gaps in the population. Consistent with Becker's theory, recent studies find the interracial marriage tends to be educationally homogenous (Qian 1997). This also holds in Israeli Jewish society. We find that among interethnic couples, gaps are remarkably smaller. Data on individuals' educational achievements and family backgrounds 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 natural variation for estimating the causal effect of ethnic public identity, signaled by persons' 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 achievements 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 truly reflects a lower bound for the impact of ethnic affiliation on wages.

Hence it is the *non random sorting* into marriage - a corner stone of "marriage" economic theory - that generates treatment (SA) and control (AS) groups. With this experiment 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 percent less than their Ashkenazi counterparts (AS), which is about two-thirds of the "unexplained" ethnic gap in pays between offspring born into intraethnic unions.

The gap in pays 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 from European or American origin are more likely to practice a secular western life style than Israeli Jews from Asian or African origin. Sephardic and Ashkenazi Jews who arrived to Israel from Asia-Africa and Europe-America respectively may possess different norms and beliefs, manifesting their native culture. Recently, Fernández and Fogil (2006) and Fernández (2007) show that woman's heritage, proxied by her parents' country of origin, has 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.

6

Although our setting partially accounts for that by focusing on offspring to 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 practice than their European-American counterparts. Nevertheless we find no difference in our proxies for religious practice between the AS and the SA groups. If SA relative wages reflect discrimination based on ethnic affiliation signaled by family name we should find much smaller gaps between SA and AS women, since most married women in Israel carry their spouses' surnames. Israeli Jewish females born to Sephardic fathers and Ashkenazi mothers (SA) have almost the same likelihood of carrying a Sephardic surname as their AS counterparts, as both groups marry Sephardic and Ashkenazi men in roughly equal proportions. Using the 1995 census data employed for women we find, consistent with our interpretation of the males' results, almost no difference between the mean log hourly wages of SA and AS working women.

Ethnic discrimination might reflect both the outcome of a "taste for discrimination" or the result of ethnic stereotypes.[9] Fershtman and Gneezy (2001) estimate the effect of Ashkenazi and Sephardic affiliation on behavior in the "trust game". In a set of laboratory experiments run on Israeli undergraduate students, in which "Sephardic" and "Ashkenazi" sounding-names were employed to signal persons' ethnic backgrounds, they found a systematic mistrust toward Sephardic Jews, a pattern perpetuated by Sephardic Jews themselves.

Do Israeli employers statistically discriminate among young workers on the basis of easily observable characteristics such as ethnic affiliation? If so, do they begin to treat them more equally as they learn about their productivity? If indeed the reduced-form impact reflects stereotypes rather than prejudice, the coefficients on the easily observed variables (by the employers) should fall over persons' working cycle as workers productivity is revealed (Altonji and Pierret 2001). Hence, the impact of Sephardic affiliation over the life cycle might shed light on the underlying reasons for unequal treatment of Israeli Jews born to Sephardic fathers and Ashkenazi mothers in Israeli labor markets. Employed with this insight in mind, we turn back to the data. A first glance at the underlying discrimination mechanism using direct measures of labor market outcomes reveals that Sephardic affiliation has a much larger impact during

---

[9]Levine, Levkov and Rubinstein (2008) find that banking deregulation reduced the racial wage gap by spurring the entry of nonfinancial firms. Consistent with Becker's taste for discrimination theory, they find the impact of competition on the wage gap to be particularly large in states with a comparatively high degree of racial bias.

the first years in the labor market than in later years. These findings are consistent with the interpretation that firms, in the absence of perfect information on workers' productivity, employ ethnic stereotypes and statistically discriminate among equally educated workers.

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 the 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 achievements and educational attainments 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 provides a placebo test using women's wages. The final section concludes.

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

Ethnicity is a central dimension of Israel's society. Israel is a multi-ethnic society with three levels: (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 Asian or African origin and Jews of European or American descent.

Ethnicity and migration to Israel

Ashkenazi Jews were the first Jewish settlers of Israel and 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 Ashkenazic origin. In the following 3 years the Israeli Jewish population more than doubled itself, 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, following the collapse of the "Iron Curtain", Israel experienced mass

8

migration from the former USSR. Since 1989, about one million Russian immigrants have 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 (Figure 1a), the vast majority of whom were born to parents who immigrated to Israel (Figure 1b).

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, who arrived during the mass migration, failed to close the socioeconomic gaps between them and the other groups. For instance, in the-mid 1950s, less than a decade after the establishment of the state of Israel, the average male Jew born in Asia or Africa earned less than 60 percent of the average male Jew born in Europe or America (Hanoch, 1961; Ben-Porath, 1986). While by the late 1970s and early 1980s the educational achievements 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), 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 achievement, (Lewin-Epstein and Semyonov, 1993; Cohen and Haberfeld, 1998) earnings (Haberfeld and Cohen, 2006), juvenile delinquency, and adult criminal involvement (Fishman et al. , 1984; 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, 1967; 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; Yitchaki 1987; Mark 1989; 1994; 1996) 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 or their children, 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 (Figure A1).

Surnames and ethnicity

Family names have great importance in Judaism, as they often indicate a person's genealogy or place of birth. 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 source 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).[10]

3 The Data

The data that we use in the study are taken from the 20 percent public-use micro samples from the 1983 and 1995 Israeli censuses, the linked 1983-1995 sample and the Life History Study of Israeli Men (LHSIM).

The Israeli Census Data

The census is the most comprehensive source of demographic and socioeconomic data on Israel's population.[11] The main sources of data used in this study are taken from the 20 percent public use micro-files from the 1995 and 1983 Israeli censuses. The long questionnaire is filled out by 20 percent of the population and consists of two

---

[10]source: http://www.britam.org/jerusalem/jerusalem271to300.html

[11]Includes residents of dwellings inside the State of Israel and Jewish settlements in the occupied territories.

parts: (i) the household segment, which includes details on dwelling, living conditions, appliances, family cars and household incomes; (ii) the personal questionnaire, which is completed by persons aged 15+ in those households and includes data on country of birth, educational attainments, marriages, fertility, labor force characteristics, and earnings.[12] Since army service is mandatory in Israel, our main samples include individuals aged 22 to 65 (retirement age in Israel during this period). We exclude observations with missing data on age, gender, country of birth and parents' country of birth (for Israeli born), educational attainment, place of residence and labor characteristics. We classify the population into eight education categories and 9 type of locality categories. 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 1 %/99% of the salaried Jewish male FTFY workers wage distribution. [13]

With the 1983-1995 joint individual record, our sample 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 unique data set provides a base for longitudinal study and the opportunity to link young adults in 1995 to their parents in 1983 (and 1995).

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 interviews consisted of these extensive sections: (i) retrospective questions regarding participation in various life-course domains, (ii) current family characteristics and labor market outcomes; and (iii) family background, including parental country of birth and education level.

The interview data were merged with military, school and police records obtained from the respective government agencies. The eighth grade school records (the SEKER

---

[12]Documentation can be found at the Israel Social Sciences Data Center web site: http://isdc.huji.ac.il/mainpage_e.html

[13]Excluding recent (last 5 years) immigrants.

test scores) taken from Ministry of Education files were merged for 1,210 respondents. The data set contains, in addition to standard socioeconomic and demographic indicators, data on both father's and mother's country of birth.[14] For all but 5 of the 1,210 respondents, military test scores were retrieved from the military files (Shavit, 1984; Featherman and Shavit, 1988). We use the revised version by Shavit (1994) that includes scores of tests taken by the respondents before joining the IDF. 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.

Ethnicity and country of birth in the data

We define a person's ethnic origin by their country of birth or, for Israeli-born, by their parents' country of birth. Following previous studies, the foreign born are classified into two categories: (i) Asia-Africa (the "Sephardim") and (ii) Europe-America, which also includes individuals born in Australia, New Zealand or the former USSR (the "Ashkenazim"). Previous studies categorized Israelis born to "Sephardim" and "Ashkenazim" solely by their fathers' countries of birth (partly since other micro-data sets representing the Israeli population, including previous census data, did not contain information on mothers' countries of birth for Israeli-born). This paper is the first to use both father's and mother's country of birth using the 1995 census sample. Yet, since the 1983 census sample does not provide data on mother's country of birth and, for comparability with previous studies, we use two indicators for Israeli-born origin: first (i) the "inter-origin" classification, based on both father's and mother's country of birth and, as in previous studies, (ii) the "intra-origin" classification based only on father's country of birth.

When we use both parents' countries of birth we classify the Israeli-born population into two main sub-groups: (i) those whose parents were both born outside of Israel and (ii) others. Those born in Israel to parents who were both born outside of Israel are classified into four groups: (i) both father and mother born in Europe or America (hereafter AA), (ii) both parents born in Asia or Africa (hereafter SS), (iii) father born in Europe or America and mother born in Asia or Africa (hereafter AS), (iv) father born in Asia or Africa and mother born in Europe or America (hereafter SA).

---

[14]The file also contains data regarding history of schooling, the reasons for change in schools, and the men's achievements in different life stages. Data on informal activities, occupations, salaried work, and members of family and households are also included.

When we use only father's country of birth we classify Israeli-born Jews into three categories by father's origin: (i) father born in Asia or Africa (hereafter ISASAF), (ii) father born in Europe or America (hereafter ISERAM) and (iii) father born in Israel (hereafter ISIS). The 1983-1995 linked data provide the opportunity to disaggregate the Israeli-born Jewish population also by their paternal grandparents' origins. We further classify Israeli-born children in 1983 whose fathers were born in Israel (the ISIS) into three sub-groups by their grandfathers' origin: (i) grandfather born in Asia or Africa (hereafter ISISASAF), (ii) grandfather born in Europe or America (hereafter ISISERAM) and (iii) grandfather born in Israel (hereafter ISISIS).

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

We use the 20 percent public-use micro samples from the 1983, the 1995 Israeli censuses and the linked 1983-1995 sample to provide a brief overview of ethnic related disparities in social outcomes and economic success within Israeli Jewish society.

Three generations of Sephardic-Ashkenazi wage gaps

Figure 2a and Figure 2b draw 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 entry reports the wage gap between Israeli Jews born in Asia or Africa (ASAF) and their European-American counterparts (ERAM) as measured among salaried FTFY male workers in 1983. The second entry draws the Sephardic-Ashkenazi wage gaps among Israeli-born Jews as measured by the difference between the mean wages of ISASAF FTFY prime-aged salaried male workers and their ISERAM peers in 1995. In the third entry we take a first glance at ethnic-related wage gaps in the third generation. Using the 1983-1995 linked census sample, we estimate the Sephardic-Ashkenazi wage gaps among Israeli-born Jews whose fathers were born in Israel by their grandfather's country of origin. Employed with a sub-sample of males aged 26 to 32 in 1995, we proxy ethnic-related wage gaps by comparing the wages of those whose grandfathers were born in Asia or Africa (ISISASAF) with the wages of their European-American counterparts as measured in 1995.[15] Crude wage gaps may vary by age. To compare ethnic gap

---

[15]There is no direct data on persons' grandfathers' country of birth. We are able to recover that for any individual observed in 1995 whose parents were observed in the 1983 sample.

in pays over these generations we calculate the Sephardic-Ashkenazi hourly wage gap among the first and second generations also for the sub-group of FTFY male workers aged 26 to 32.

Three main findings emerge: (i) we find large and persistent wage gaps between Sephardic and Ashkenazi male workers; (ii) we find no evidence for convergence in the wages of Sephardic Jews relative to their Ashkenazi counterparts in the first or the second generations of Israeli-born Jews, and (iii) the vast majority of the crude wage gaps reflect ethnic differences in educational attainment. Figures 2a and 2b point out the increasing role of "unobservables" (by the econometrician) in these ethnic-related wages gaps. ASAF workers earned less than 60 percent the wages of their ERAM counterparts if no controllers were included, and only 6 percent less once education, potential experience and region were controlled. The ethnic-related residual wage gaps between Israeli-born Jews whose fathers were born in Israel yet whose grandfathers were born in Asia or Africa (ISISASAF) and their ISISERAM counterparts account for one half of the 40 percent gap in mean wages.

Three generations of Sephardic-Ashkenazi educational attainments gaps

In the early 1960s only one of five Jews born in Asia or Africa and two out of five Israeli-born Jews whose fathers were born in Asia or Africa had completed more than 8 years of schooling, whereas the figures for their Ashkenazi counterparts were much higher (50 and 80 percent).[16] By the mid 1980s, the Israeli-born Jews whose fathers were born in Asia or Africa completed 12 years of schooling (measured among 22-25 years of age), two years less than their European-American counterparts. A closer look at the data reveals that most of the progress was accomplished at the low end of the educational outcomes distribution. Using the census data we examine ethnic-related gaps in educational attainments, as measured among young adults just after the college age. We measure the Sephardic-Ashkenazi gaps among three generations. We use three outcomes: (i) years of schooling completed; (ii) matriculation eligibility (BAGRUT); [17] and (iii) academic degree rates among high school graduates with a BAGRUT title. Table 2 summarizes our main findings. Two main facts emerge. While the gap in

---

[16]Source: Ben-Porath, (1986).

[17]Matriculation eligibility (BAGRUT) is a certification attained by passing a series of national 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.

completed years of schooling shrank ,we find no evidence for similar trends in the share of high school graduates with a BAGRUT certificate and among BAGRUT certified those with academic degrees.

Interethnic unions

Sephardic-Ashkenazi segregation within the Israeli Jewish population is well-reflected outside of the labor markets. Despite religious similarities; integration through the educational system; military service and "collective consciousness" due to Israel's security situation; and the genetic similarities between Ashkenazi and Non-Ashkenazi Jews that dilute ethnic barriers; after three generations, by the late 1990s, about three out of four unions among Jews in Israel were between members of the same ethnic category (Table 3a). The gaps in educational attainment and the persistent disparities in wages suggest that the tendency for Israeli-born Jews to marry within their ethnic groups might reflect sorting on skills rather than social preferences.

We consider economic and social factors by comparing actual inter-marriage rates among recently married (last five years) Israeli-born Jews with the likelihood of obtaining an interethnic match in a "blind date". We do so by calculating the probability of a random man and a random woman to match outside their group. Using the 1995 census data we classify the recent married population of Israeli-born Jews by their fathers' origins into three main groups: (i) those whose fathers were born in Asia or Africa (ISASAF), (ii) their European-American counterparts (ISERAM) and (iii) those whose fathers were born in Israel (ISIS). We calculate the actual and the "blind date rates" in the entire sub-population and by education levels. We report our findings in Table 3b. Three main findings emerge: (i) the rate of intraethnic marriage among Israeli-born Jews is 50 percent higher than the likelihood to randomly marry within your ethnic group; (ii) the extra within group marriage drops with education; yet (iii) we find that even among college graduates (at least BA degree) the within group marriage rates are about 20 percent higher than the likelihood to form an intraethnic union in a "blind date".

Hence, the lack of interethnic marriage within Israeli Jewish society is mainly associated with measures of economic success rather than social preferences. The persistent gaps in educational attainments and the assortative mating on educational attainments by Israeli-born Jews indicate that children born to Ashkenazi unions have on average better-educated parents who earn substantially more than their Sephardic counterparts. Yet, our findings also suggest much smaller differences in the family backgrounds

15

of Israeli-born Jews by fathers' origin in mixed unions.

In the next sections we take advantage of that to identify the reasons for the persistence of ethnic-related wage gaps in Israeli Jewish society.

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 at controlling 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 the common knowledge outside of academic journals - 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, proxy by educational achievements, cognitive test scores and family background as their "Ashkenazi-Sephardi" 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 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:

$$Y_i = \delta N_i + \beta X_i + \varepsilon_i, \tag{1}$$

where X is a vector of observed controls, β is the vector of returns associated with X and ε_i represents unobserved (by the econometrician) idiosyncratic person-specific

influences on the outcome of interest. The parameter of interest δ measures the causal effect of a "Sephardic" surname on outcomes.

Family names have great importance in Judaism, as they often testify to a person's genealogy or place of birth. Jews from Asia or Africa are more likely to posses a Sephardic surname whereas Jews immigrating to Israel from Europe or America were more likely to posses 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, 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:

$$N_i^* = \theta F_i + \nu_i, \tag{2}$$

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

$$N_i = 1\left(N_i^* > 0\right), \tag{3}$$

where N is a binary variable that equals 1 if person i possesses a Sephardic name and 0 otherwise, and 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:

$$N_i = \gamma\left(\theta\right) F_i + \epsilon_i, \tag{4}$$

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

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:

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

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 $0 < \gamma \leq 1$. Employed 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:

$$Y_i = \eta F_i + \beta X_i + \mu_i, \tag{6}$$

where $\mu_i = \delta \epsilon_i + \varepsilon_i$ and η stands for the reduced from 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 causal impact of "Sephardic" surname on wages:

$$p \lim \eta^{OLS} = \gamma \delta \leq \delta. \tag{7}$$

6 Family Background, Cognitive Achievements and Educational Attainments by Parents' Origin

With our statistical model in mind we turn to the data. Using the 20 percent public-use micro-files from the 1995 Israeli census we compare the background and outcomes of Israeli Jews whose fathers were born in Asia or Africa and their mothers were born in Europe of America (SA) with the outcomes of Jews born in Israel to fathers born either in Europe or America and their mother were born in Asia or Africa (AS). The difference between the mean wages of SA and the mean wages of AS provides a lower bound for the causal impact of a Sephardic surname iff SAs are as skilled as their AS counterparts. Therefore, we precede the wage gap estimation with a detailed look at the skill gap proxy by individuals' educational attainments, cognitive test scores and family backgrounds.

Educational Attainments

Figure 3a and Figure 3b display the educational achievements of Israeli Jews born in Israel whose parents were born outside of Israel by their parents' origin. We classify individuals into four sub-groups: (i) both father and mother born in Europe or in America (AA), (ii) both parents born in Asia or Africa (SS), (iii) father born in Europe or America and mother born in Asia or Africa (AS), (iv) father born in Asia or Africa and mother born in Europe or America (SA). We use three measures to proxy educational attainments: (i) matriculation (BAGRUT) eligibility; (ii) college and advanced degree; and (iii) number of school years completed. Figure 3a and Figure 3b report mean group outcomes relative to the average outcomes of the AS group. Two main findings emerge. Clearly, there are large and significant differences between the educational outcomes of Israeli Jews born to interethnic 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, prime age AA (30 to 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 measures of education quality. Average matriculation-certificate eligibility of SS is about 30 percent lower than that of AA and 15 percent below that of interethnic unions. While we do find large disparities between AA, mixed union and SS groups' outcomes, we find almost no differences between offspring born to interethnic couples (defined by their father and mother origin). The educational attainments of SA Israeli-born Jews are statistically indistinguishable from the outcomes of their AS counterparts.

Family Background and Parents' Origin

Years of schooling completed is a partial and an indirect measure of human capital. While it is a proxy for time devoted to the accumulation of skills through formal schooling, it might fail to account for children's and young adults' investment in human capital. Different schools differ in curricula, and even within schools some children receive better inputs than others. Informal schooling (e.g, parents' inputs at early stages of development) varies greatly among children within and between ethnic groups. In the next subsections we take a glance at family background and test scores by parents' origin.

The Census data does not provide data on parents' income or education. To proxy family background we generate "synthetic parents" assuming that mothers were 20 to

35 years of age when they gave birth. For example, 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 the synthetic mothers. We use four measures to proxy parental background: (i) years of schooling completed, (ii) matriculation certificate, (iii) college education (or advanced degree) and (iv) log hourly wages. We measure these both for men (fathers) and women (mothers). We present our findings in Figures 4a and 4b. The benchmark group in all figures is men born in Europe or America and women born in Asia or Africa.

We find large disparities between the family backgrounds of Jews born in Israel by parents' origin. Similar to individuals' educational achievements, we find large differences between AA and SS men and women who married within their respective ethnic groups. European-American men married to European-American women have higher educational achievements 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 earn less and possess less schooling, on average, than all other married men. This also holds for women's outcomes (see Figure 4b). Yet, while we find almost no differences between the education of AS and SA, we do find systematic differences between their "synthetic parents". As Figures 4a and 4b make clear, on average, ASAF males married to ERAM women achieve higher levels of education and earn more than ASAF men married to ASAF women. This also holds for their spouses. ERAM women married to ASAF men earn more and have higher levels of education than ASAF women married to ERAM men. Clearly the SA couples dominate their AS counterparts; they 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 environments are major predictors of cognitive and non-cognitive abilities (Carneiro and Heckman, 2003), whereas early investment in children yields the largest returns (Cunha et al 2007). There are many reasons why persons with the same educational attainments 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 it accounts for much of the black-white wage gap. The remarkable similarities between race gaps in academic achievements 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 achievements between Sephardic and Ashkenazi-born Jews are a major source of "unexplained" ethnic wage gaps.

To address this question we take advantage of the Life History Study of Israeli Men data set, a stratified sample of Jewish Israeli men selected from the army draft list who were born in 1954 and lived in Israel in 1970. The data set contains, in addition to standard socioeconomic data and demographics, data on both father's and mother's country of birth. It also includes verbal and analytic test scores of respondents before they joined the IDF. 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 Tables 4a and 4b.

Table 4a shows the test-scores of Israeli-born Jews by father's origin. The table contains two panels reporting the absolute and standardized tests scores and four columns. The first two columns report the average difference crude and residual analytical test scores between Israeli born Jews whose fathers were born in Asia or Africa and their Europe/America 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 (ISAERAM) 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. 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 (Table 4b). 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.

Hence, individuals' observed educational attainment, measures of family back-

ground and common proxies for cognitive skills indicate that Israeli-born Jews whose fathers were born in Asia or Africa and mothers were born in Europe or America are at least as skilled as their AS counterparts. Thus, it would be safe to conclude that the treatment-control contrast within Israeli Jews born to interethnic unions truly 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 higher academic achievements than those whose fathers were born in Asia or Africa. This suggests that the lower earnings of Israeli-born Jews who carry a Sephardic surname reflect a skill gap rather than labor market discrimination against Sephardic-affiliated Israeli-born Jews. Yet, for the very same reason, Sephardic-Ashkenazi wage gaps between Israeli Jews born to mixed couples should not be attributable to a lack of skills. With this identification strategy in mind, we turn to the data.

Using data taken from the 20 percent public-use micro-files of the 1995 Israeli census, we estimate the mean wages of FTFY Israeli-born Jews whose parents were born outside Israel, by father's and mother's origin. We report our findings in Table 5. The table reports the coefficients on three dummy variables representing the AA, SA and the SS sub-groups. The benchmark group is Israeli-born Jews whose fathers were born in Europe or America and whose mothers were born in Asia or Africa. There are two panels. The first panel reports our findings for the FTFY men aged 22 to 65 and the second panel focuses on the group aged 30 to 55. The first entry in column (i), that is −0.099, is the average crude wage gap in log hourly wages between SA FTFY workers and their AS counterparts. The first entry in the second column reports the log hourly wage gap controlling for education, experience and region of residence. One major fact emerges: SA workers earn about 8 percentage points less than their AS counterparts which is more than half the log hourly wage gap between AA and SS FTFY workers.

As expected, SS FTFY workers earn less than all other ethnic groups. They earn about 13 percent less than their AA counterparts. This gap might reflect an unobserved (to the econometrician) skills gap between these groups. It is thus surprising to find that SA FTFY workers, who are statistically indistinguishable from their AA counterparts, earn almost as little as their SS peers. This evidence indicates that, as of the mid 1990s, much of the Sephardic-Ashkenazi wage gap reflects discrimination against Israeli-born

Jews with Sephardic affiliation, rather than disparities in human capital.

Ethnic discrimination might reflect a "taste for discrimination" or ethnic stereotypes. Statistical discrimination is difficult to identify, and past empirical studies have been inconclusive. Altonji and Pierret (2001) argue that the coefficients on easily observed variables (by the employers) should decrease over individuals' working cycles as firms discover worker productivity. Equipped with this insight, we use variation in wages over the life cycle to shed light on underlying sources of discrimination. It is worth noting that wages vary over the life cycle due to reasons other than market learning. On-the-job training (Mincer, 1974; Heckman Lochner and Todd, 2004; Rubinstein and Weiss, 2007) is a prime example. Stereotyping, which reduces the returns to investment in human capital (Coate and Loury, 1993), may cause minorities to invest less in on-the-job training.

With this caveat in mind, we again turn to the data. We reevaluate the reduced-form impact on FTFY workers aged 30 to 42 and on those aged 43 to 55. We report our findings in Table 6. Two main facts emerge. We find that the wage differential between AS and SA workers reflects the causal impact of fathers' origin only during individuals' first years working FTFY in the labor market. During these years, SA FTFY workers earn about seven percentage points less than their AS counterparts. We find no differences in wages between these groups later in their working lives. Results indicate that the decline in the SA-AS wage gap reflects the growing gap between AA and AS workers, rather than better outcomes of the SA group relative to their AA counterparts.

The wage gap might also reflect systematic differences in sorting into industries across groups ethnic groups. While we find that the AA are more likely to working in the government sector, less likely to be self-employed and more likely to be salaried workers than their SS counterparts, we find no such differences between the offspring born to mixed unions (see appendix tables A2).

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.

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 Fogil (2006) and Fernández (2007) showed that a woman's heritage, proxied by her parents' country of origin, has non-negligible impact on fertility and labor supply among second-generation American women. Children of parents born in Asia or 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-based discrimination. Our setting partially accounts for that by focusing on offspring to inter-ethnic unions. Yet, although one might expect cultural differences among offspring to inter-ethnic unions to be smaller than those among offspring to intraethnic couples, the experience of growing up in an AS family might be different than that of being raised by Sephardic father and an Ashkenazi mother (SA). The wage gap might reflect the impact of "neighborhoods" or culture on the formation of market skills rather the causal effect of discrimination on wages. In the next sub-sections we consider these issues.

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".[18] Employed with this information, we take a systematic glance at the data. Table 7 reports religious practice by fathers' origin. The first entry 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 difference in the fraction of fathers who wore a kippah. Clearly Israeli fathers born in Asia or Africa are more likely to keep traditional religious practice than their European-American counterparts. Panel (b) in Table 7 takes a closer look at the

---

[18]"Kippah" is a thin, slightly rounded skullcap traditionally worn by observant Jewish men, also known as "yarmulke")

same outcome, this time disaggregating the population by fathers' and mothers' origin. We find no difference between the AS and the SA groups. Hence, while these crude measures indicate cultural differences between Ashkenazi and Sephardic Jews, we find no difference between the mixed groups.

Fertility

Fernández and Fogil (2006) show that women's heritage, proxied by her parents' country of origin, has a non-negligible impact on fertility. 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 between ethnic groups may cause and reinforce disparities in cognitive and non-cognitive traits. Using the 1983 census data we take a glance at fertility rates of Israeli-born Jewish married women, aged 35-40, by their father and their father-in-law continent of origin. Table 8 reports the estimated number of own children. The first entry reports the average number of children among married women whose father and father-in-law were both born in Europe or America and married women whose father were born in Europe or America but their father-in-law were born in Asia or Africa (regression coefficients). The first and second columns report crude and residual fertility gaps respectively. Clearly, Israeli-born married women whose fathers and fathers-in-law were both born in Asia or Africa have higher fertility rates than all other groups. This also holds after controlling for educational attainments. While SS married women have on average one child more than other women we find no differences between the number of children of SA and SA married women.

Location of Residence

The Israeli census provides a detailed geographic version of the 20 percent micro samples. The data include the code of locality for each person in the sample. The Israeli CBS generates a socioeconomic index, based on income per capita, employment, education, density of population, rates of dependency, transportation, demography etc. for each locality. Using the 1983 census, we calculate the average locality index by parents' origin.

Table 9a and Table 9b report the socioeconomic status of "synthetic parents" and own locations of residence respectively. Each table contains two panels. The first panel reports our findings using only fathers' origin. The second panel disaggregates

the population into four groups by fathers' and mothers' origin. Two main facts emerge. First, Israeli-born Jews whose fathers were born in Asia or Africa were over-represented in less-developed locations. Second, this ethnic gap does not hold for offspring to mixed couples. We find almost no differences in the average index level between the SA and the AS groups.

9   The Impact of Ethnic Origin on Women's Pay

Sephardic and Ashkenazi Jews have different and distinct surnames *passed from father to son*. If female offspring born to mixed couples have the same likelihood of marrying men coming from their fathers' or their mothers' ethnic groups, markets should be unable to distinguish between AS and SA females based on their surnames. If the wage gap between SA and AS men reflects the causal impact of discrimination based on ethnic affiliation signaled by family name, we should find no gaps between SA and AS females. With this idea in mind we turn back to the 1995 census data.

We first calculate the fraction of women married to men from the other ethnic group by their fathers' and both parents' origin. We report our findings in Table 10 for women aged 30 to 50.[19] The table contains two panels and four columns. The first panel (panel a) reports the results by fathers' origin, whereas the second panel shows results according to both parents' origin. The first two columns report the fraction of married women within groups (relative to the benchmark group). Columns (iii) and (iv) present the fraction of women married outside their fathers' ethnic groups. We find that approximately 80 percent of these women were married during the survey (while less than 5 percent report being never married). Clearly those born to ASAF fathers are substantially less likely to marry outside of their fathers' groups (see panel (a)). Yet, as panel (b) clearly shows this does not hold for women born to mixed unions. For instance, almost half the married AS women and 43 percent of the SA married women report that their father-in-laws were born in Asia or Africa or in Europe or America respectively.

We next turn to the wage data. Using the statistical models employed for FTFY working men we estimate mean wages by fathers' and mothers' origin for FTFY working

---

[19]Retirement age in Israel vary 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 compare with women aged 30 to 50 (approximately 10%). Marriage outside own ethnic group is less common among older cohorts of birth. For these reasons we focus on the age group of 30 to 50. Results are robust to inclusion of the 51 to 55 years of age group.

women. We report our findings in Table 11. Panel (a) reports the ethnic gap in log hourly wages by fathers' origin for all women aged 30 to 50 and by age groups (30 to 39 and 40 to 50). The odd columns report the crude gaps; the even columns report the gap in residual wages. We find large wage gaps by fathers' country of origin, similar in magnitude to those measured among working men (panel (a)). Nevertheless, we find almost no difference between the mean wages of AS and SA FTFY working women (panel (b)). These findings are consistent with the interpretation that the measured gap in men's wages between SA and AS reflects discrimination based on ethnic affiliation signaled by persons' family name.

10   Conclusions

The growing mobility of individuals across borders has been transforming relatively homogenous populations into multi-ethnic economies, suggesting that 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 *cultural-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 achievement. 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 achievements; yet, as in the United States, the source of differences in educational achievements, 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 achievements; (ii) origin-related genealogy of persons' family names; and (iii) interethnic unions - 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 common 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, therefore, 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.

Using the Israeli Census of 1995, the first to contain both fathers' and mothers' country of birth (for those born in Israel), we compare the log hourly wages of Israeli-born Sephardic Jews (ISASAF) with the outcomes of their Ashkenazi counterparts (ISERAM). We find that FTFY male ISASAF workers earn about 12 percent less than their ISERAM counterparts, controlling for education, potential experience and region. Next, we take a closer look at our "natural historical experiment" sample. Comparing the log hourly wages of Israeli-born SA Jews 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 half of the gap between intraethnic Israeli-born Jews.

SA have better educational achievements, perform better on cognitive achievement tests than their AS peers, have higher levels of parental education, and earnings than their mixed-couple counterparts. Thus they were 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).

If SA relative wages reflect discrimination based on ethnic affiliation signaled by family name, we should find much smaller gaps between SA and AS women as they marry outside of their fathers' ethnic group. Using the 1995 census data we find that

Israeli Jewish women born to Sephardic fathers and Ashkenazi mothers (SA) have almost the same likelihood of carrying a Sephardic surname as their AS counterparts, as both groups marry Sephardic and Ashkenazi men in roughly equal proportions. Consistent with our interpretation of the results for men, we find no difference between the hourly wages of AS and SA FTFY working women.

Finally, we consider the underlying discrimination mechanism. 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 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. We reevaluate the reduced-form impact on wages of prime aged FTFY workers over early and later stages of FTFY careers. Our findings are 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. Moreover, we find that the drop in the impact of Sephardic affiliation is due to a decline in the wages of AS workers, rather than an increase in the wages of SA workers; perhaps the drop occurs too late for SA workers. These findings point toward feedback effects of discrimination on workers' investment, as well as to the importance of future work on the dynamic consequences of statistical discrimination.

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) 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] Shmuel, A. (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.

[5] 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.

[6] ———————. (1973) Higher education as a filter, *Journal of Public Economics*, 2(3) July, pp.193–216.

[7] ———————. (1998) What Has Economics to Say about Racial Discrimination?. *Journal of Economic Perspectives*. 12(2), Spring, pp.91–100.

[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] Ben-Porath, Y. (1986) *The Israeli Economy: Maturing Through Crises*. Camebridge, MA. Harvard University Press.

[13] 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.

[14] Brown, C. & Gay, P. (1985) *Racial discrimination 17 years after the act.* London, Policy Studies Institute.

[15] Carneiro, J. & Heckman, J. (2003) What Role for Human Capital Policies?. In: Heckman, J.J, Krueger, A.B. & Friedman, B. eds. *Inequality in America.* Cambridge, MA, MIT Press, Ch. 2, pp. 77–237.

[16] Coate, S. & Loury, G. C. (1993) Will Affirmative-Action Policies Eliminate Negative Stereotypes? *American Economic Review* 83 (5), pp.1220–1240.

[17] 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.

[18] F. Chuna et al. (2007) Interpreting the Evidence on Life Cycle Skill Formation. In: Hanushek, E.A & Welch, F. eds. *The Handbook of the Economics of Education*, Elsevier B.V., Vol 1, Ch. 12.

[19] Donohue, J. & Heckman, J.J. (1991) Continuous versus Episodic Change: The Impact of Civil Rights Policy on the Economic Status of Blacks. *Journal of Economic Literature,* 29(4), pp. 1603-43.

[20] Eisenstadt, S. (1985) *The Transformation of Israeli Society: An Essay in Interpretation*, Boulder CO, Westview Press.

[21] Featherman, D.L. & Shavit Y. (1988) Schooling, Tracking, and Teenage Intelligence. *Sociology of Education*, 61(1), pp. 42-51.

[22] Fernández, R. (2007) Women, Work, and Culture. *National Bureau of Economic Research Working Paper,* No. 12888.

[23] 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

[24] Fershtman, C. & Gneezy, U. (2001) Discrimination in a segmented society: an experimental approach. *Quarterly Journal of Economics*, 116(1), 351–377.

[25] Friedberg, Rachel M. (2001). The Impact of of Mass Migration on Israeli Labor Market. *Quarterly Journal of Economics,* 66, 1373–1408.

[26] 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, May, 86(2): 447–464.

[27] Fryer, R.G. Jr. & Levitt, S.D. (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.

[28] 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.

[29] Goldscheider, C. (2002). *Israel's Changing Society: Population, Ethnicity, and Development.* Boulder, CO. Westview Press Inc; 2Rev Ed edition.

[30] 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.

[31] Hanoch, G. (1961) *Income Differentials in Israel*, in Fifth Report 1959 and 1960 (Hebrew and English).

[32] Heckman, J.J. (1995) Lessons from the Bell Curve. *Journal of Political Economy,* 103(5), pp. 1091–1120.

[33] —————————. (1998) Detecting Discrimination. *Journal of Economic Perspectives*, 12(2), pp. 101–116.

[34] Heckman, J.J., Lochner, L. & Todd, P. (2004) Fifty Years of Mincer Earnings Equations, *National Bureau of Economic Research Working Paper,* No. *9732.*

[35] Heckman, J.J, Lyons ,T. & Todd,P. (2000) Understanding Black-White Wage Differentials, 1960–1990. *American Economic Review*, 90(2), pp. 344–349.

[36] Heckman J. J. and Rubinstein Y. (2001) The Importance of Noncognitive Skills: Lessons From the GED Testing Program, *American Economic Review*, V91, pp. 145-149.

[37] 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.

[38] 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.

[39] Chinhui, J., Murphy, K. & Pierce, B. (1991) Accounting For the Slowdown in Black-White Wage Convergence. In: Marvin H.K, ed. *Workers and Their Wages: Changing Patterns in the U.S.* Washington D.C, AEI Press.

[40] Kaganoff, B.C. (1977) *A Dictionary of Jewish Names and their History.* New York, Schocken Books.

[41] Levine, Ross, Levkov Alexey and Yona Rubinstein (2008) Racial Discrimination and Competition. *National Bureau of Economic Research Working Paper, No. 14273.*

[42] Lewin-Epstein, N. & Semyonov, M. (1986) Ethnic Group Mobility in the Israeli labor Market. *American Sociological Review*, 51(3), pp. 342–352.

[43] Lewin-Epstein, N., Semyonov, M. (1992) Local labor markets, ethnic segregation, and income inequality. *Social Forces* 70(4), 1101–1119.

[44] Loury, G.C. (1981) Intergenerational Transfers and the Distribution of Earnings. *Econometrica*, 49 (4), pp.843–867.

[45] Mark, N.(1994) Ethnic Gaps in Earning and Consumption in Israel. *Economic Quarterly*, 41(1), pp.55–77.

[46] 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.

[47] Neal, D., & William. R.J. (1996) The Role of Pre-market Factors in Black-WhiteWage Differences, *Journal of Political Economy*, 104(5), pp.869–895.

[48] Phelps, E.S. (1972) The Statistical Theory of Racism and Sexism. *American Economic Review*, 62(4), pp.659–661.

[49] Qian, Z. (1997). Breaking the Racial Barriers: Variations in Interracial Marriage Between 1980 and 1990. *Demography*, 34(2), pp. 263-276.

[50] Rubinstein, Y & Brenner, D. (2003). *The Origin Related Wage Gaps: Evidence from the 'Promised Land*. Unpublished Manuscript. Sapir Center for Development, Tel Aviv.

[51] Rubinstein, Y. & Weiss Y. (2007) Post School Earnings: Search versus Human Capital. In: Hanushek, E.A & Welch, F. eds. *The Handbook of the Economics of Education*, Elsevier B.V., Vol 1 Ch.1

[52] Haya, S. & Shavit Y. (1994) Age at Marriage, Sex-Ratios, and Ethnic Heterogamy. *European Sociological Review*, 10(1), pp.79-87

[53] 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.

[54] Shavit, Y. (1984) Tracking and Ethnicity in Israeli Secondary Education. *American Sociological Review*, 49(2), pp. 210-220.

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,	**-0.462**	**-0.106**	**-0.426**	**-0.122**
father born in Asia or Africa	(0.007)	(0.007)	(0.008)	(0.008)
Born in Israel,	-0.231	-0.015	-0.139	-0.019
father born in Israel	(0.010)	(0.009)	(0.012)	(0.011)
Controls	No	Yes	No	Yes
R-squared	0.119	0.399	0.114	0.329
Observations	32913	32913	23505	23505

Notes: The table reports the coefficient on a dummy variable representing individuals who are second generation in Israel
The interpretation of the coefficient is the mean wage gap in the second generation as measured in 1995, between
individuals from Asia/Africa origin relative to those from Europe/America origin.
In all regressions odd numbered columns present the crude wage gap while even numbered columns
present the wage gap conditional on potential experience, school years completed and area of residence
Potential experience was calculated as age-school years completed-6 and we control for a quartic in experience.
School years completed are represented by 8 dummy variables constructed from the highest diploma variable.
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 and 26 to 32

Israeli Censuses of 1983, 1995 and the linked 1983-1995 Micro Files

Panel A: Males aged 30 to 55

	Generation in Israel								
	1st (ASAF/ERAM)			**2nd (ISASAF/ISERAM)**			**3rd (ISISASAF/ISISERAM)**		
Ethnic Group	**School Years** (i)	**BAGRUT Rate** (ii)	**Academic Degree** (iii)	**School Years** (iv)	**BAGRUT Rate** (v)	**Academic Degree** (vi)	**School Years** (vii)	**BAGRUT Rate** (viii)	**Academic Degree** (ix)
"Sephardic"	-3.3 (0.035)	-0.3 (0.004)	-0.2 (0.008)	-2.4 (0.028)	-0.3 (0.004)	-0.2 (0.007)	-2.3 (0.407)	-0.4 (0.077)	-0.3 (0.085)
"Ashkenazi"	13.7 (0.085)	0.5 (0.012)	0.5 (0.023)	14.0 (0.154)	0.6 (0.020)	0.6 (0.028)	14.0 (0.465)	0.7 (0.145)	0.5 (0.167)

Panel B: Males aged 26 to 32

	Generation in Israel								
	1st (ASAF/ERAM)			**2nd (ISASAF/ISERAM)**			**3rd (ISISASAF/ISISERAM)**		
Ethnic Group	**School Years** (i)	**BAGRUT Rate** (ii)	**Academic Degree** (iii)	**School Years** (iv)	**BAGRUT Rate** (v)	**Academic Degree** (vi)	**School Years** (vii)	**BAGRUT Rate** (viii)	**Academic Degree** (ix)
"Sephardic"	-2.0 (0.067)	-0.3 (0.010)	-0.1 (0.018)	-1.4 (0.043)	-0.3 (0.008)	-0.2 (0.011)	-2.3 (0.407)	-0.4 (0.077)	-0.3 (0.085)
"Ashkenazi"	12.3 (0.096)	0.5 (0.016)	0.3 (0.026)	13.2 (0.055)	0.6 (0.011)	0.4 (0.015)	14.0 (0.465)	0.7 (0.145)	0.5 (0.167)

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, origin is determined by father's continent of birth.

Finally for those born in Israel to a father who was born in Israel, origin is determined by father's father (paternal grandfather) continent of birth.

( ) Robust standard errors are reported in parenthesis

Table 3a
Marriage Within and Between Ethnic Groups by Decade of Marriage*
Israeli 1983 and 1995 Census Micro Files

Decade of Marriage	Hus -A Wf -A	Hus -A Wf -S	Hus -S Wf -A	Hus -S Wf -S	Same Origin	Mixed Origins	Fraction from All Marriages in Decade
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
1970's	0.37	0.10	0.08	0.44	0.81	0.19	0.90
1980's	0.36	0.10	0.09	0.45	0.81	0.19	0.83
1990's	0.31	0.12	0.13	0.45	0.76	0.24	0.71

Notes: The table reports the fractions of marriages within/between groups of origin by decade of marriage and the number of
school years completed by husband and wife. The figures in the table are the fraction of couples who married in each decade and were still
married at the time of the relevant census. We used the 1995 census to compute the fraction of marriages in the 1980s
and the 1990s. We used the 1983 census to compute the fraction of marriages in the 1970s.
The table focuses on couples whose 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. Therefore, in column 7 we present the fractions
of marriages for which we identified the origin for both husband and wife out of all lasting marriages in that decade.
* 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.

Table 3b
Assortative Mating by Ethnicity
The Fraction of Intra Group Unions Among Couples Married between 1990 and 1995; Actual vs. Randomly Matched Couples
Israel 1995 Census Micro Files

Panel A. Intra Group Marriages

Actual and Random `	All		At least BAGRUT		At least BA	
	"Ashkenazi" /"Sephardic"	All^^	"Ashkenazi" /"Sephardic"	All^^	"Ashkenazi" /"Sephardic"	All^^
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Actual Marriages	**70.5**	**52.1**	**63.8**	**45.3**	**63.4**	**42.1**
Random Assignment	53.9	37.1	50.0	33.5	53.8	35.0

Panel B. Marriage "Raw" Data, by Education and Ethnicity, to Generate Panel A

		All			At least BAGRUT			At least BA		
		Wife's Origin			Wife's Origin			Wife's Origin		
		ASH	SPH	ISR	ASH	SPH	ISR	ASH	SPH	ISR
	ASH^^^	**10.9**	**9.1**	**7.9**	**14.6**	**9.9**	**11.4**	**17.6**	**8.3**	**15.3**
		7.6	13.5	6.8	12.2	12.6	11.0	16.5	9.2	15.5
Husband's Origin	SPH^^^	**9.1**	**32.6**	**7.9**	**9.1**	**18.8**	**7.5**	**7.3**	**9.4**	**7.1**
		13.5	24.0	12.0	12.0	12.4	10.9	9.5	5.3	8.9
	ISR	**7.2**	**6.8**	**8.6**	**10.4**	**6.4**	**11.9**	**15.2**	**4.7**	**15.2**
		6.1	10.9	5.5	9.8	10.1	8.9	14.1	7.8	13.2

Notes: The tables reports the fraction of actual marriages inside\outside one's origin group. It compares actual vs. randomly matched couples in the population.

The sample includes individuals who are: age 25-30, currently married, married for the first time for less than 5 years and are in Israel more than 5 years.

^ We classify individuals into ethnic groups (Ashkenazi/Sephardic) by their own or their fathers' continent of birth.

^^ Include observations born in Israel to an Israeli-born father.

^^^ Ashkenazi (ASH) and Sephardic (SPH) are those born in ERAM (ASAF) or those born in Israel to fathers born in ERAM (ASAF)

Table 4a
Origin Related Gaps in Analytic and Verbal Test Scores, by Father's Origin
IDF Administered Test Scores
Men History File, Israeli Born

Panel A: Absolute Scores

Variables	Analytic Scores		Verbal Scores	
	(i)	**(ii)**	**(iii)**	**(iv)**
Father born in Asia or Africa	**-2.84**	**-1.25**	**-3.28**	**-1.71**
	(0.29)	(0.26)	(0.27)	(0.23)
Controlling for Education	No	Yes	No	Yes
R-squared	0.08	0.34	0.12	0.40
Observations	1141	1141	1141	1141

Panel B: Standardized Scores

	Analytic Scores		Verbal Scores	
	(i)	**(ii)**	**(iii)**	**(iv)**
Father born in Asia or Africa	**-0.56**	**-0.25**	**-0.70**	**-0.36**
	(0.06)	(0.05)	(0.06)	(0.05)
Controlling for Education	No	Yes	No	Yes
R-squared	0.08	0.34	0.12	0.40
Observations	1141	1141	1141	1141

Notes: 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. The comparison group is individuals with a Ashkenazi father
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 4b
Origin Related Gaps in Analytic and Verbal Test Scores by Father's and Mother's Origin
IDF Administered Test Scores
Men History File, Israeli Born

Panel A: Absolute Scores

Variables	Analytic Scores		Verbal Scores	
	(i)	**(ii)**	**(iii)**	**(iv)**
SA	**2.66**	**2.25**	**1.65**	**1.18**
	(1.49)	(1.27)	(1.36)	(1.13)
AA	2.37	1.12	2.61	1.32
	(0.95)	(0.82)	(0.87)	(0.73)
SS	-0.69	-0.28	-0.89	-0.52
	(0.94)	(0.81)	(0.86)	(0.72)
Controlling for Education	No	Yes	No	Yes
R-squared	0.09	0.34	0.13	0.40
Observations	1141	1141	1141	1141

Panel B: Standardized Scores

	Analytic Scores		Verbal Scores	
	(i)	**(ii)**	**(iii)**	**(iv)**
SA	**0.53**	**0.45**	**0.35**	**0.25**
	(0.30)	(0.25)	(0.29)	(0.24)
AA	0.47	0.22	0.56	0.28
	(0.19)	(0.16)	(0.19)	(0.15)
SS	-0.14	-0.05	-0.19	-0.11
	(0.19)	(0.16)	(0.18)	(0.15)
Controlling for Education	No	Yes	No	Yes
R-squared	0.09	0.34	0.13	0.40
Observations	1141	1141	1141	1141

Notes: 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. The comparison group is individuals with a Ashkenazi father
and Sephardic mother. 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
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		30-55	
		(i)	(ii)	(iii)	(iv)
Father - Asia/Africa	**SA**	**-0.099**	**-0.066**	**-0.070**	**-0.079**
Mother - Europe/America		(0.033)	(0.027)	(0.042)	(0.035)
Father - Europe/America	AA	0.354	0.055	0.272	0.064
Mother - Europe/America		(0.021)	(0.018)	(0.025)	(0.022)
Father - Asia/Africa	SS	-0.151	-0.061	-0.186	-0.067
Mother - Asia/Africa		(0.020)	(0.017)	(0.024)	(0.022)
Controls		No	Yes	No	Yes
R-squared		0.157	0.402	0.141	0.337
Observations		25170	25170	18659	18659

Notes: The table reprots the coefficients on three dummy variables representing three different combinations of origins of fathers and mothers to Israeli born Individuals. The comparison group is individuals born in Israel whose father was born in Europe/America and whose mother was born in Asia/Africa.
Sample includes full-time full-year (FTFY) salaried male workers in 1995.
Odd numbered columns report the crude wage gap.
Even numbered columns report the wage gap conditional on potential experience, school years completed and area of residence
Potential experience was calculated as age-school years completed-6 and we control for a quartic in potential experience.
School years completed are represented by 8 dummy variables constructed from the highest diploma variable.
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 parethesis

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

Variables		Aged 30 to 55					
		All		30 to 42		43 to 55	
		(i)	(ii)	(iii)	(iv)	(v)	(vi)
Father born in ASAF	**SA**	**-0.070**	**-0.079**	**-0.137**	**-0.102**	**-0.008**	**0.010**
Mother born in ERAM		(0.042)	(0.035)	(0.046)	(0.040)	(0.089)	(0.078)
Father born in ERAM	AA	0.272	0.064	0.185	0.044	0.251	0.133
Mother born in ERAM		(0.025)	(0.022)	(0.027)	(0.024)	(0.063)	(0.060)
Father born in ASAF	SS	-0.186	-0.067	-0.185	-0.078	-0.196	-0.002
Mother born in ASAF		(0.024)	(0.022)	(0.026)	(0.023)	(0.064)	(0.061)
Controls		No	Yes	No	Yes	No	Yes
R-squared		0.141	0.337	0.095	0.296	0.108	0.285
Observations		18659	18659	12462	12462	6197	6197

Notes: The table reports the coefficients on three dummy variables representing three different combinations of origins of fathers
and mothers to Israeli born Individuals. The comparison group are individuals born in Israel whose father was born in
Europe/America and whose mother was born in Asia/Africa.
Sample includes full-time full-year (FTFY) salaried male workers in 1995.
Odd numbered columns report the crude wage gap.
Even numbered columns report the wage gap conditional on potential experience, school years completed and area of residence
Potential experience was calculated as age-school years completed-6 and we control for a quartic in potential experience.
School years completed are represented by 8 dummy variables constructed from the highest diploma variable.
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 7
Origin Related Differences in Father's Religious Practice
Life History Study of Israeli Men

Panel A: By Father's Origin

Variables	Father Wears "KIPPA" (i)	Father Keeps Kosher (ii)
Father born in Asia or Africa	**0.32** (0.03)	**0.47** (0.02)
R-squared	0.100	0.279
Observations	1143	1143

Panel B: By Parents' Origin

Variables	Father Wears "KIPPA" (i)	Father Keeps Kosher (ii)
SA	**-0.05** (0.15)	**-0.22** (0.11)
AA	-0.01 (0.09)	-0.37 (0.07)
SS	0.32 (0.09)	0.13 (0.07)
R-squared	0.108	0.304
Observations	1143	1143

Notes: The dependent variables are binary variables indicating whether individual's
father used to wear a "KIPPA" or whether the father kept KOSHER during his own childhood.
( ) Robust standard errors are reported in parenthesis

Table 8
Origin Related Gaps in Number of Children Ever Born to a Woman
Married Women (Married Once), Age 35-40, by Synthetic Husband's and Wife's Origin^
Israeli Census, 1983, Micro Files

Variables	Synthetic Parents to	Number of Children	
		(i)	**(ii)**
Husband - Sephardic^	**SA**	**-0.02**	**0.05**
Wife - Ashkenazi		(0.08)	(0.08)
Husband - Ashkenazi	AA	-0.26	-0.10
Wife - Ashkenazi		(0.06)	(0.06)
Husband - Sephardic	SS	1.03	0.71
Wife - Sephardic		(0.06)	(0.07)
Husband - Ashkenazi	AS (Level)	3.08	4.14
Wife - Sephardic		(0.06)	(0.31)
Controlling for Education		No	Yes
R-squared		0.10	0.15
Observations		8073	8073

Notes: We keep couples for whom both partners were married for the first time (94.5% of all married couples).
The dependent variable is the answer to the question to married women: "how many children do you have?"

^To proxy family background we generate "synthetic parents". We assume that mothers were 20 to 35 years
 of age when they gave birth. A "synthetic mother" of a person aged 35 in 1995 has the characteristics of the average
married women born between 1925 and 1940, by her continent of origin and her spouse origin.
 The "synthetic fathers" have the characteristics of those actually married to the "synthetic" mothers.

^^For those born outside of Israel origin is determined by continent of birth, namely Asia-Africa (ASAF)
 and Europe-America (ERAM). For those born in Israel whose father was born outside of Israel, origin is determined
by father's continent of birth.
( ) Robust standard errors are reported in parenthesis

Table 9a
Origin Related Differences in Indices of Socio-Economic Status of Locations of Residence
"Synthetic Parents"^
Israeli Census 1983, Geographic Micro Data File

Panel A: By Father's Origin

Variables	Socio-Economic Index		Monthly Net Income of A Standard Person		Employment Rates	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Father born in Asia or Africa	**-0.20**	**-0.13**	**-10.37**	**-6.33**	**-0.85**	**-0.45**
	(0.00)	(0.01)	(0.22)	(0.27)	(0.03)	(0.04)
Controlling for Education	No	Yes	No	Yes	No	Yes
R-Squared	0.05	0.03	0.05	0.03	0.01	0.01
Observations	40714	33972	40714	33972	40714	33972

Panel B: By Parents' Origin

	Socio-Economic Index		Monthly Net Income of A Standard Person		Employment Rates	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
SA	**0.04**	**0.01**	**2.01**	**0.61**	**0.19**	**0.04**
	(0.02)	(0.02)	(0.83)	(0.84)	(0.13)	(0.13)
AA	0.06	0.03	2.63	1.36	0.32	0.20
	(0.01)	(0.01)	(0.32)	(0.34)	(0.05)	(0.05)
SS	-0.17	-0.11	-8.74	-5.78	-0.63	-0.31
	(0.01)	(0.01)	(0.35)	(0.40)	(0.06)	(0.06)
Controlling for Education	No	Yes	No	Yes	No	Yes
R-Squared	0.06	0.03	0.06	0.03	0.02	0.01
Observations	40714	33972	40714	33972	40714	33972

Notes: 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 second index was also constructed by the
Israeli 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 of 9.4
^

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.
( ) Robust standard errors are reported in parenthesis

Table 9b
Origin Related Differences in Indices of Socio-Economic Status of Locations of Residence
Israeli Census 1995, Geographic Micro Data File

Panel A: By Father's Origin

	Age: 25 to 64		Age: 30 to 54	
	Socio-Economic Index	Income per Capita	Socio-Economic Index	Income per Capita
Variables	**(i)**	**(ii)**	**(iii)**	**(iv)**
Father born in Asia or Africa	**-0.49**	**-0.13**	**-0.47**	**-0.12**
	(0.01)	(0.00)	(0.01)	(0.00)
R-squared	0.074	0.046	0.074	0.044
Observations	58703	58703	42994	42994

Panel B: By Parents' Origin

	Socio-Economic Index	Income per Capita	Socio-Economic Index	Income per Capita
Variables	**(i)**	**(ii)**	**(iii)**	**(iv)**
SA	**-0.03**	**0.00**	**-0.02**	**0.00**
	(0.03)	(0.01)	(0.04)	(0.01)
AA	0.20	0.04	0.18	0.04
	(0.02)	(0.01)	(0.02)	(0.01)
SS	-0.31	-0.09	-0.32	-0.09
	(0.02)	(0.01)	(0.02)	(0.01)
R-squared	0.078	0.048	0.077	0.046
Observations	58703	58703	42994	42994

Notes: 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 -.0003191 with standard deviation of 1.13. The second index was also constructed by the
Israeli Bureau of Statistics and measures the income (per capita) from work in most localities
The mean of log of income per capita is 6.75 with a standard deviation of 0.6
( ) Robust standard errors are reported in parenthesis

Table 10
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, Israeli Census 1995 Micro Data Files

Panel A: By Father's Origin

Variables	Fraction of Women Currently Married		Fraction Married outside their Father's Ethnic Group	
	(i)	(ii)	(iii)	(iv)
Father born in Asia or Africa	**0.01**	**0.01**	**-0.04**	**-0.03**
	(0.00)	(0.00)	(0.00)	(0.00)
Father born in Europe or America	**0.82**	**0.60**	**0.23**	**0.09**
(Level)	(0.00)	(0.02)	(0.00)	(0.03)
Controls	No	Yes	No	Yes
R-squared	0.00	0.01	0.00	0.01
Observations	52760	52760	40564	40564

Panel B: By Father's and Mother's Origin

Variables	Fraction of Women Currently Married		Fraction Married outside their Father's Ethnic Group	
	(i)	(ii)	(iii)	(iv)
SA	**0.00**	**0.01**	**-0.04**	**-0.03**
	(0.02)	(0.02)	(0.02)	(0.02)
AA	0.02	0.02	-0.26	-0.27
	(0.01)	(0.01)	(0.01)	(0.01)
SS	0.03	0.03	-0.29	-0.28
	(0.01)	(0.01)	(0.01)	(0.01)
AS (Level)	0.81	0.58	0.47	0.34
	(0.01)	(0.02)	(0.01)	(0.03)
Controls	No	Yes	No	Yes
R-squared	0.00	0.01	0.02	0.03
Observations	52760	52760	40564	40564

Notes: We identify married couples by having a common household identification code in 1995
We restrict our sample to individuals 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

Table 11

The Gap in Log of Hourly Wages Between Women Born in Israel by Parents' Origin and Age Groups
Israel 1995 Census Micro Files

Panel A: By Origin of Father

| Variables | Aged 30 to 50 | | | | | |
| | All | | 30 to 39 | | 40 to 50 | |
	(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
Father born in Asia/Africa	**-0.320**	**-0.085**	**-0.262**	**-0.071**	**-0.336**	**-0.100**
	(0.011)	(0.011)	(0.016)	(0.015)	(0.016)	(0.017)
Controls	No	Yes	No	Yes	No	Yes
R-squared	0.08	0.26	0.052	0.23	0.082	0.27
Observations	9998	9998	5394	5394	4604	4604

Panel B: By Origin of Both Parents

| Variables | | Aged 30 to 50 | | | | | |
| | | All | | 30 to 39 | | 40 to 50 | |
		(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
Father born in Asia/Africa	**SA**	**-0.013**	**-0.021**	**-0.047**	**-0.018**	**0.033**	**-0.030**
Mother born in Europe/America		(0.048)	(0.042)	(0.059)	(0.050)	(0.083)	(0.072)
Father born in Europe/America	AA	0.138	-0.004	0.071	-0.007	0.164	-0.007
Mother born in Europe/America		(0.029)	(0.026)	(0.035)	(0.032)	(0.056)	(0.048)
Father born in Asia/Africa	SS	-0.198	-0.091	-0.206	-0.079	-0.186	-0.109
Mother born in Asia/Africa		(0.028)	(0.026)	(0.033)	(0.030)	(0.056)	(0.048)
Controls		No	Yes	No	Yes	No	Yes
R-squared		0.08	0.26	0.05	0.23	0.09	0.27
Observations		9998	9998	5394	5394	4604	4604

Notes: The table reports the coefficients dummy variables representing Israeli born women to fathers who were born in Asia/Africa
or Israeli women born to parents from a mixed origin (Panels A and B). The comparison group are individuals born in Israel whose father
was born in Europe/America (Panel A) and Israeli born women born to fathers who were born in Europe/America and mothers born in
Asia or Africa. All individuals are Jewish salaried females working full time full year in 1995.
The regression were estimated for two age groups: (i) 30-39 and (ii) 40-50
In all regressions odd numbered columns present the crude wage gap while even numbered columns present
 the wage gap conditional on potential experience, school years completed and area of residence
Potential experience was calculated as age-school years completed-6 and we control for a quartic in potential experience.
School years completed are represented by 8 dummy variables constructed from the highest diploma variable.
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

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.
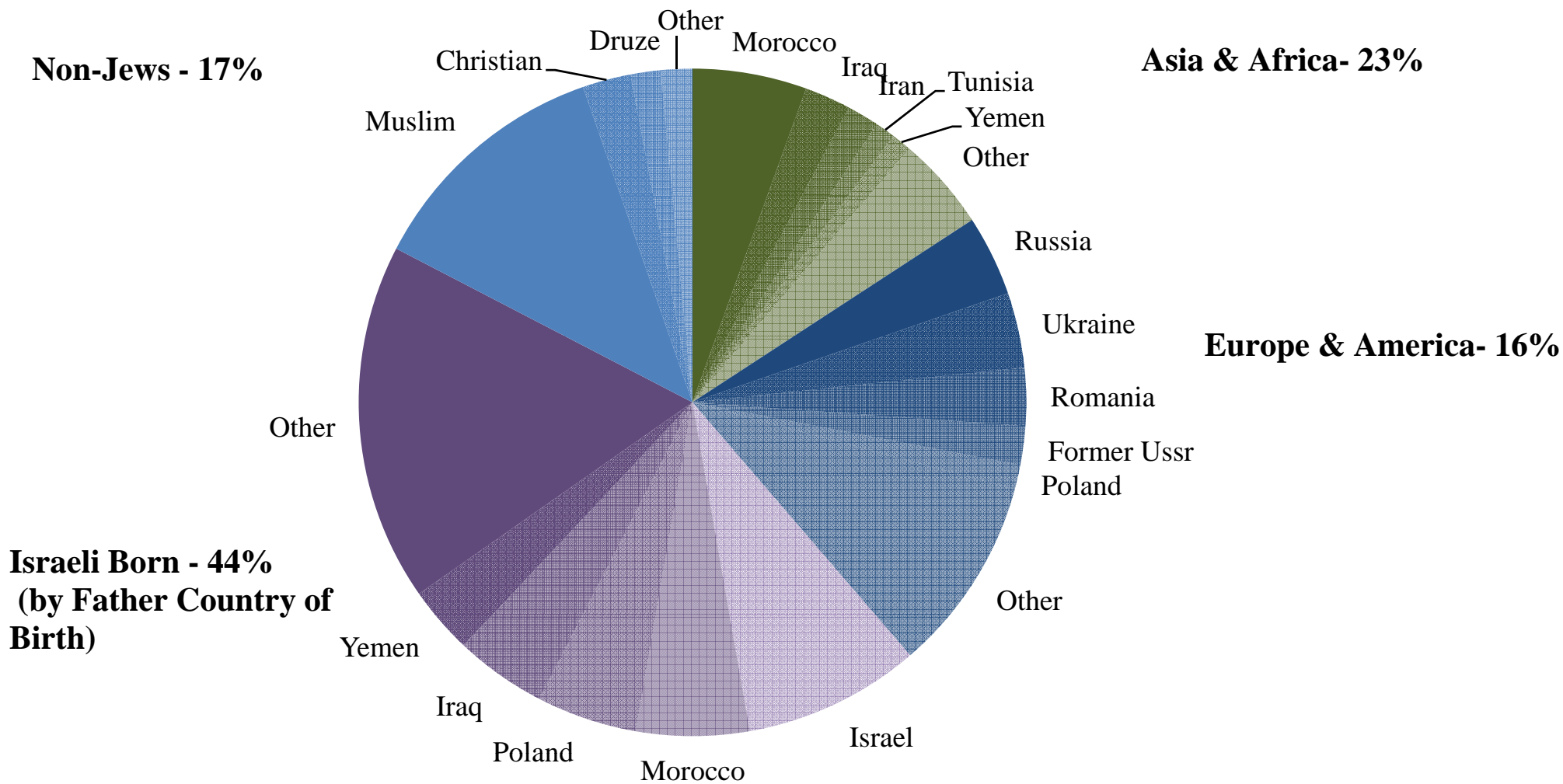

Figure 1a

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.

Israeli Born - 53.2%
(by Father Country of Birth)

Europe & America- 27.7%

Other
Poland
Former USSR
Romania
Ukraine
Russia

Israel
Morocco
Poland
Iraq
Yemen
Other

Other
Yemen
Tunisia
Iran
Iraq
Morocco

Asia & Africa- 19.1%

Figure 1b
The Composition of the Jewish Population in Israel, in 1995, by Continent and Five Main Countries of Origin

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.
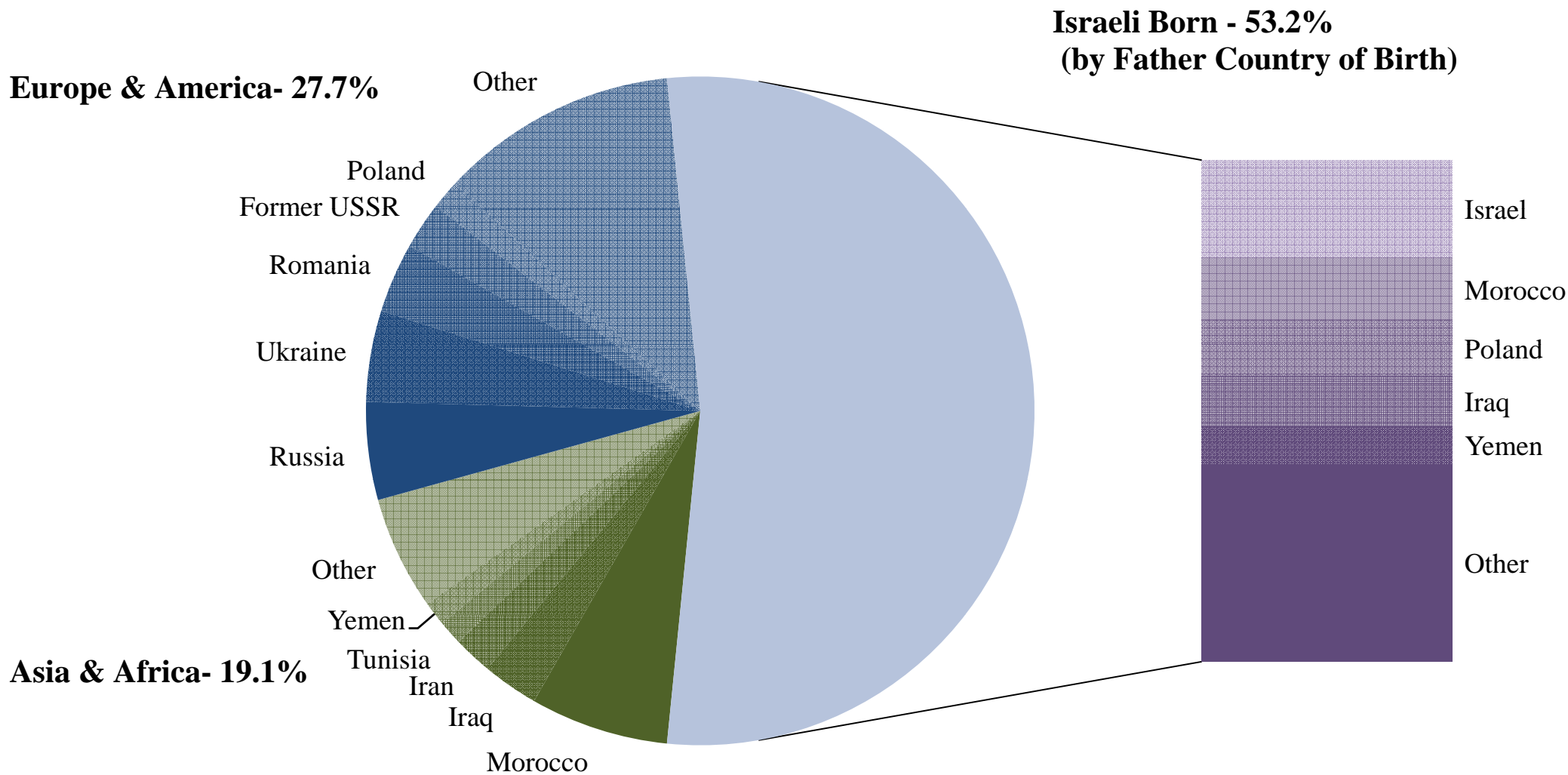
The two highlighted groups in the legend are AS and SA which are the focus of the paper and were about 4% of the total Israeli born Jews age 22-65 in 1995.

Either Parent Born in Israel - 29%

Father and Mother Ashkenazi (AA)

Father Ashkenazi and Mother Sephardic (AS)

Father Sephardic and Mother Ashkenazi (SA)

Father and Mother Sephardic (SS)

Israeli born Parents

Only One Parent is Israeli Born
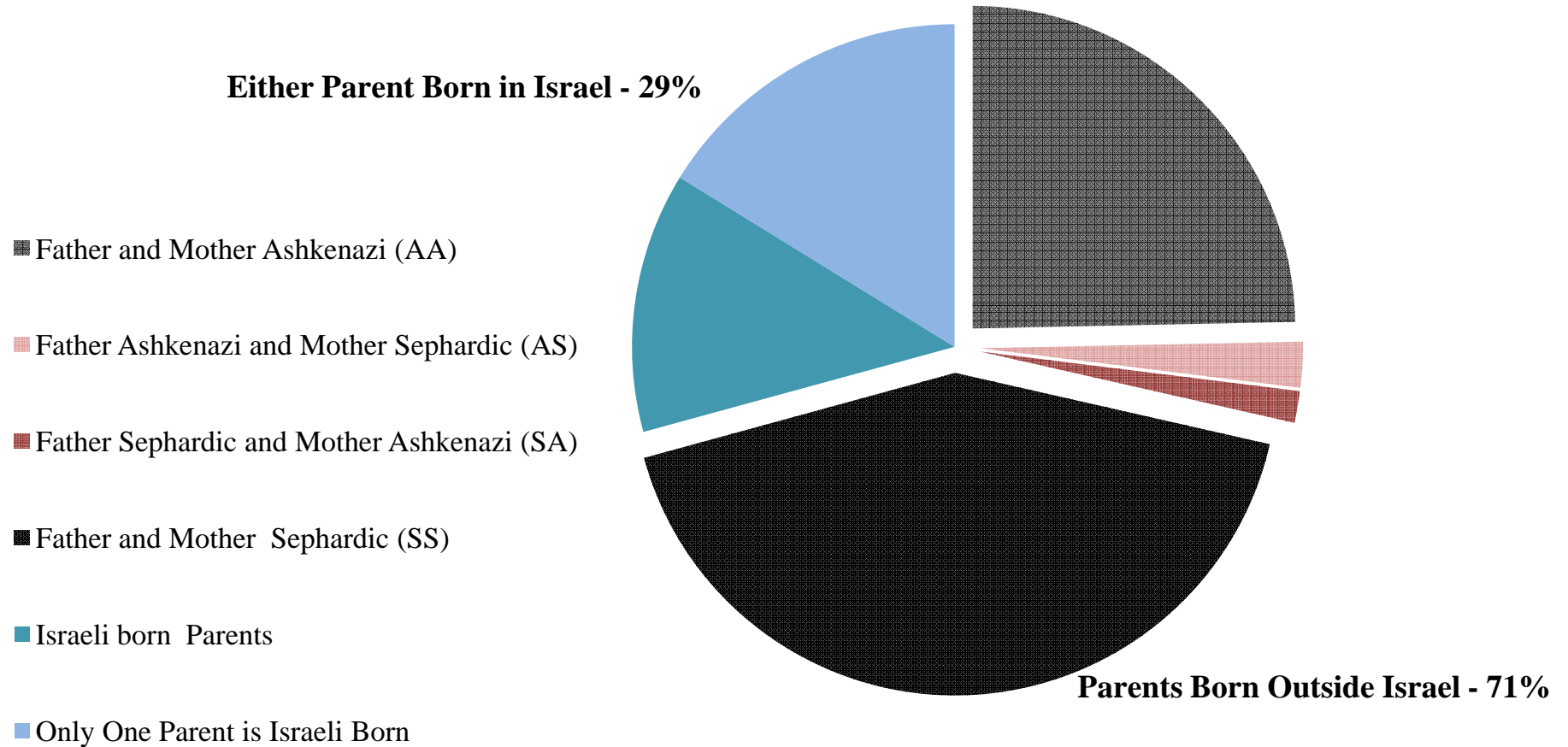
Parents Born Outside Israel - 71%

Figure 1c

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

The figure shows the Sephardic-Ashkenazi wage gaps (and the corresponding confidence intervals) over three generations as measured among FTFY salaried male workers aged 30 to 55 either in 1983 or in 1995. 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 1983(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 1995 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.
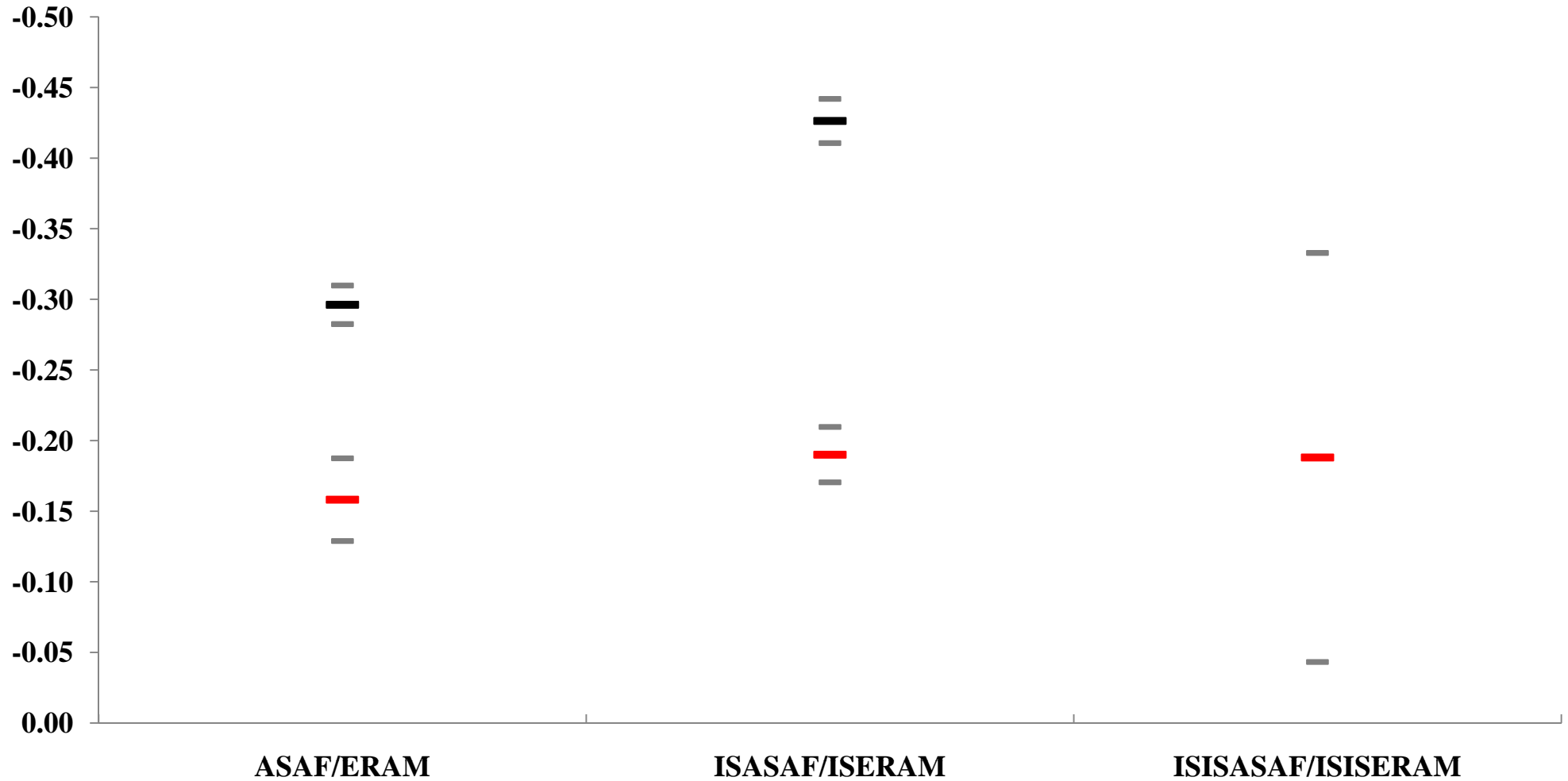

Figure 2a
Crude Gaps in the Log of Hourly Wages for Three Generations of Immigrants to Israel at age 30-55 Measured in 1983 & 1995

The figure shows the Sephardic-Ashkenazi residualized wage gaps (and the corresponding confidence intervals) over three generations as measured among FTFY salaried male workers aged 30 to 55 either in 1983 or in 1995. In particular: (i) the gap between immigrants born in Asia/Africa relative to immigrants born in Europe/America (age 30-55) in 1983(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 1995 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 1995. All specifications control for potential experience, educational attainments dummies and dummies for area of residence.
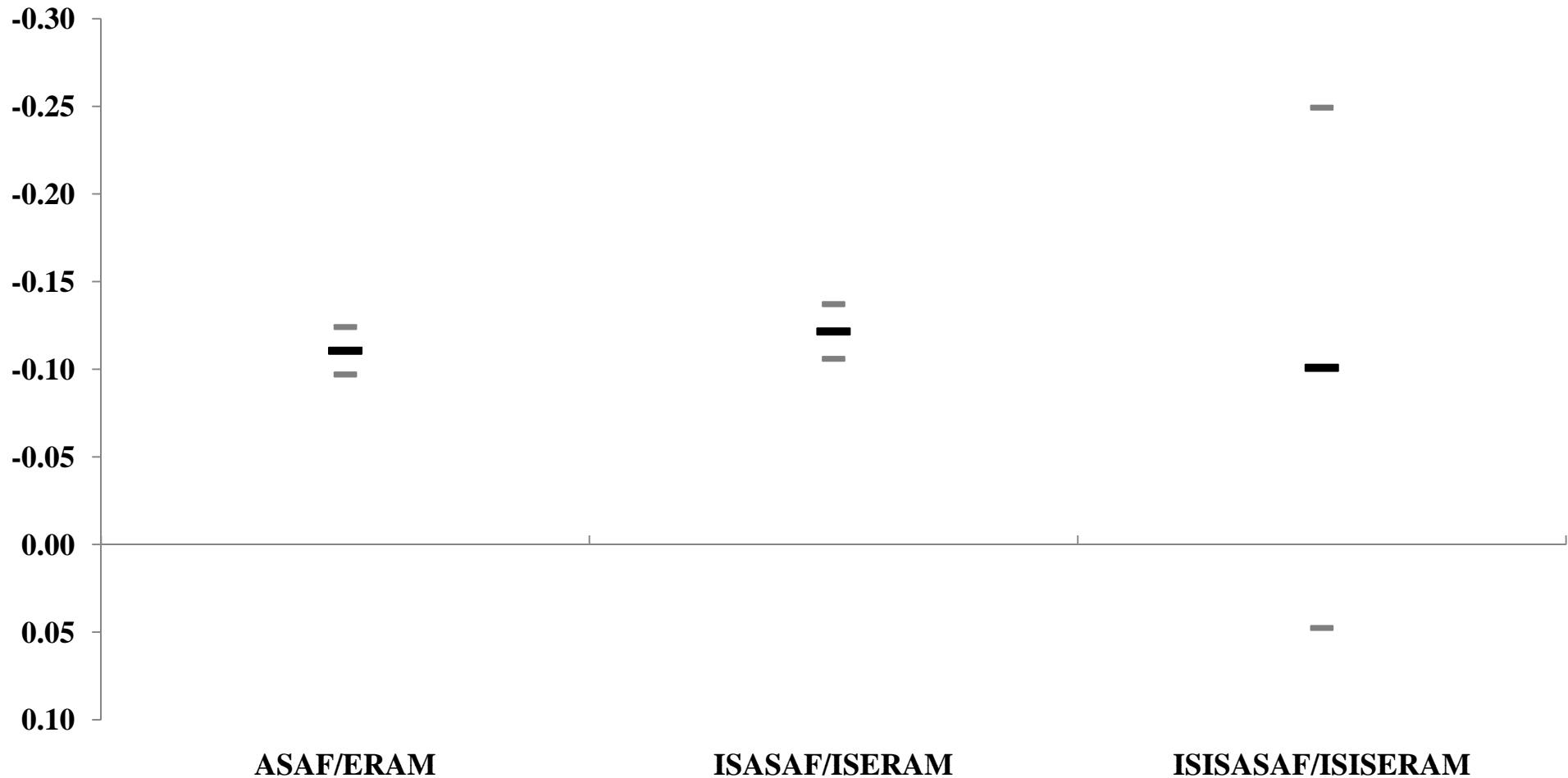
Figure 2b

Gaps in the Residuals of Log of Hourly Wages for Three Generations of Immigrants to Israel at age 30-55 Measured in 1983 &

The figure shows three measures of educational gaps, in 1995, between individuals born in Israel aged 22 to 65. Educational gaps are presented relative to the comparison group of individuals born in Israel to a father who was born in Europe/America (ISR_FERAM). 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 3a
Age-Adjusted Gaps in Educational Attainments by Father's Origin, Ages 22 to 65 , Measured in 1995

The figure shows three measures of educational gaps, in 1995, between individuals born in Israel to different mixes 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).
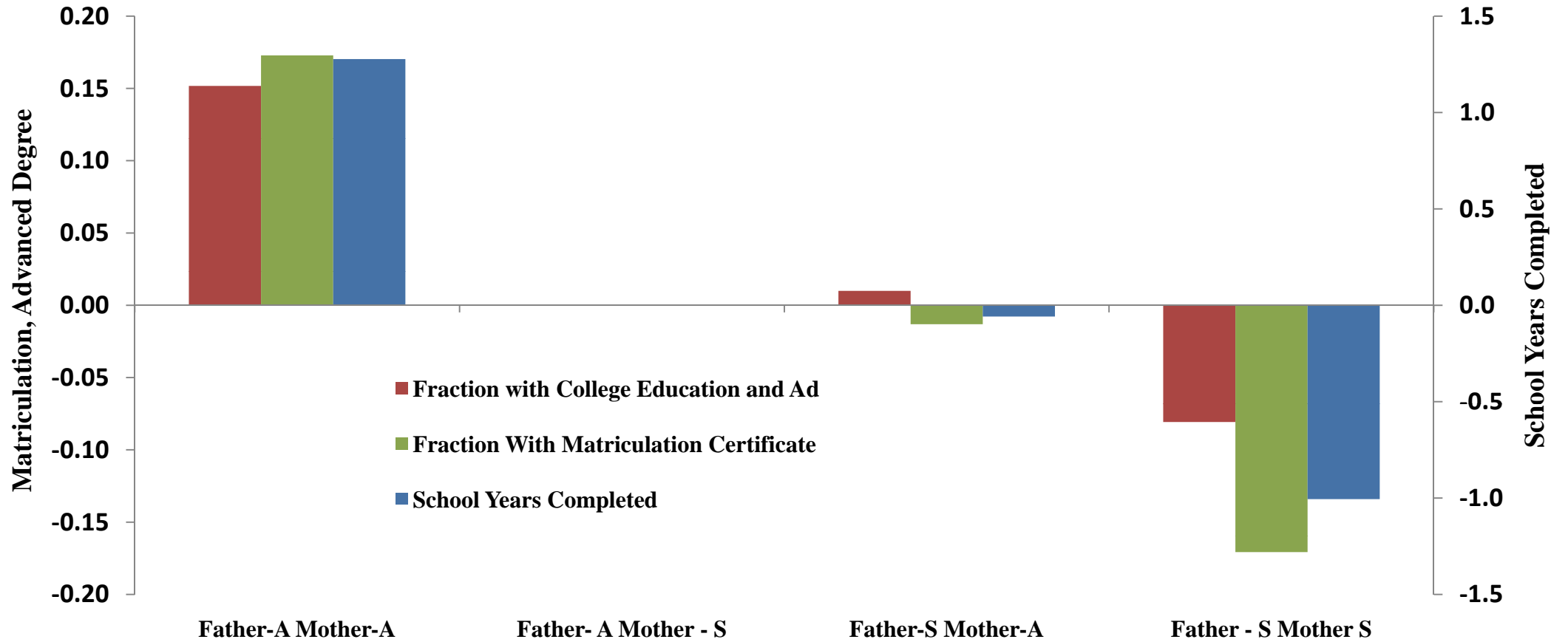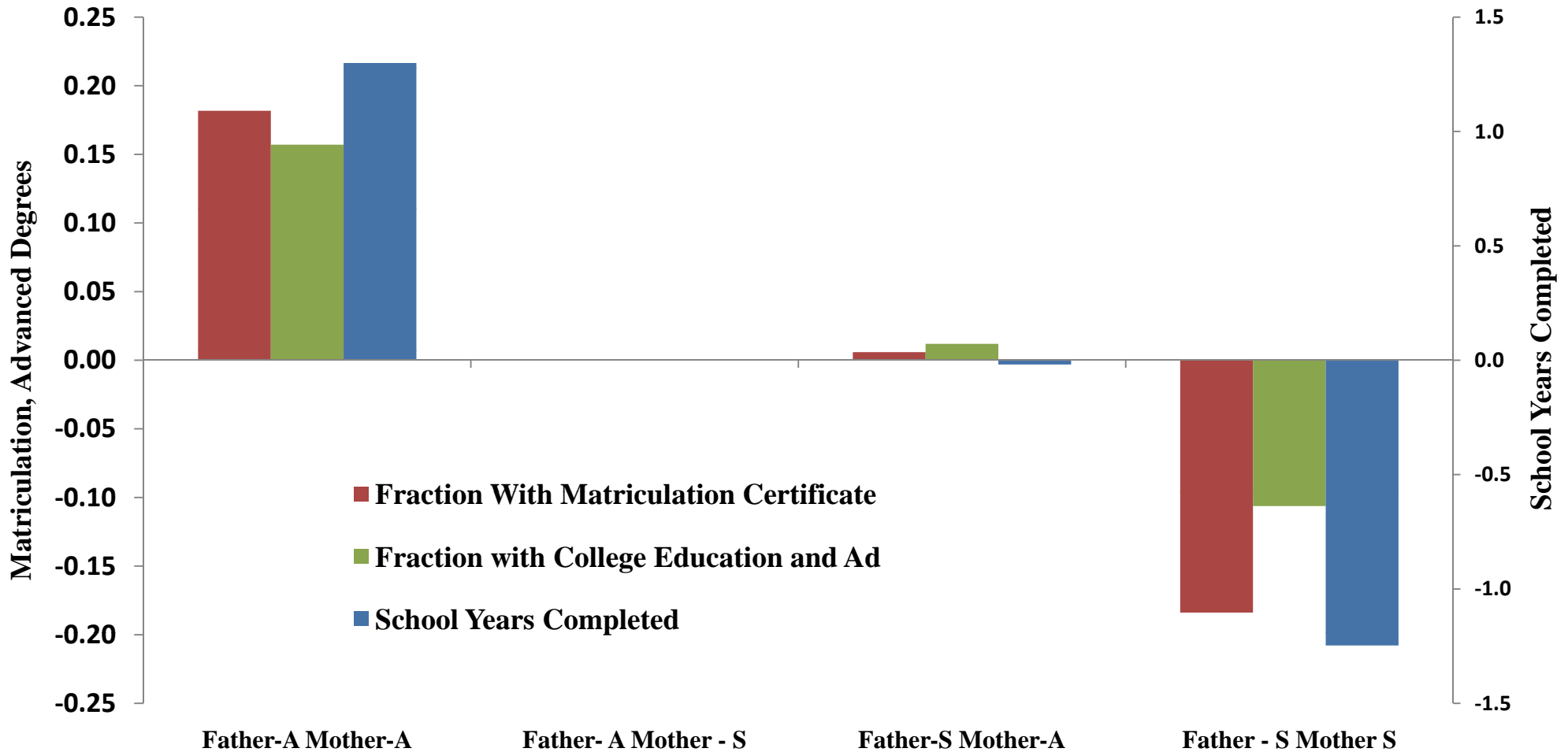

Figure 3b
Age-Adjusted Gaps in Educational Attainments by Parents Origin, Aged 30 to 55, Measured in 1995

To proxy family background we generate "synthetic parents". We assume that mothers were 20 to 35 years of age when they gave birth. A "synthetic mother" of a person aged 35 in 1995 has the characteristics of the average married women born between 1925 and 1940, by her continent of origin and her spouse origin. The "synthetic fathers" have the characteristics of those actually married to the "synthetic" mothers. We use four measures to proxy parental background: (i) years of schooling completed, (ii) matriculation certificate, (iii) college education (or advanced degree) and (iv) log hourly wages.
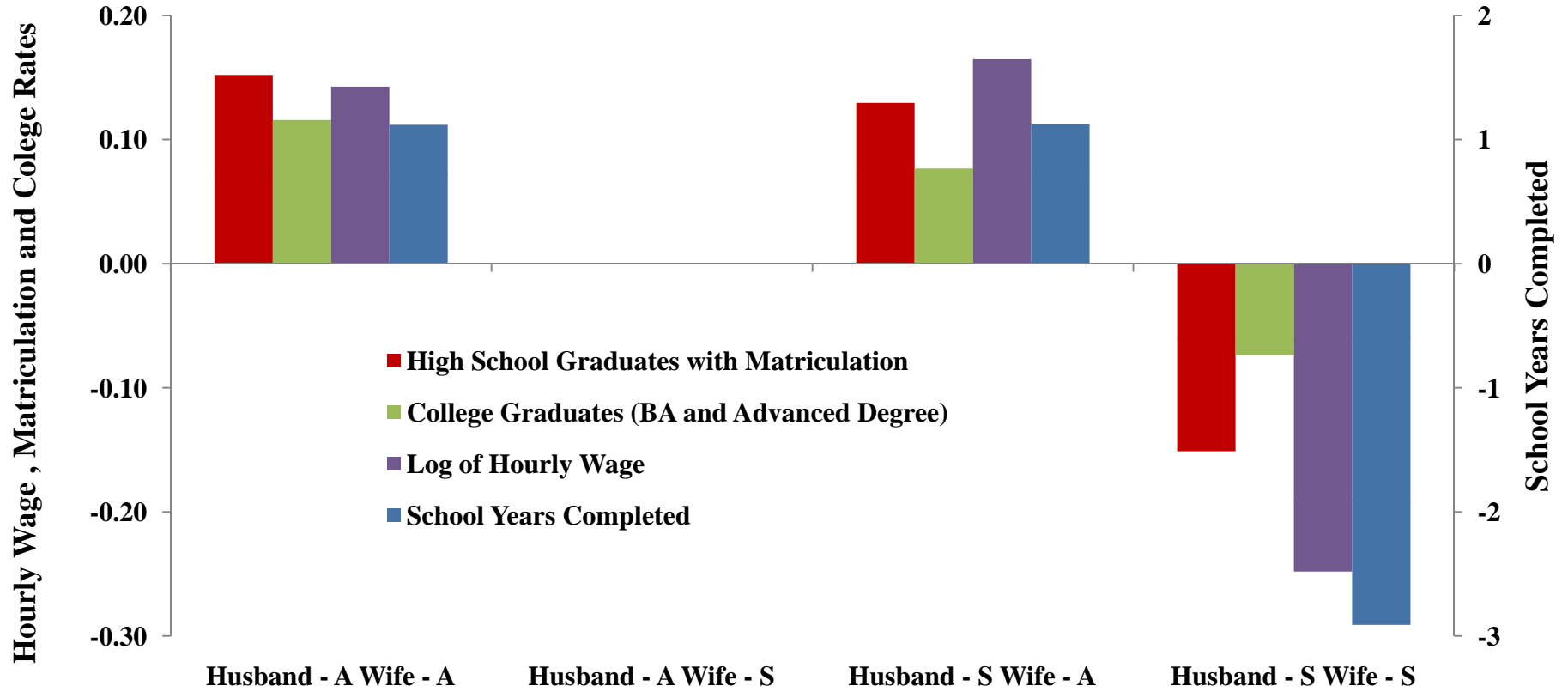
Figure 4a
Educational Attainments and Log Hourly Wages of Married Men (synthetic fathers)
by Own and Spouse's Origin

To proxy family background we generate "synthetic parents". We assume that mothers were 20 to 35 years of age when they gave birth. A "synthetic mother" of a person aged 35 in 1995 has the characteristics of the average married women born between 1925 and 1940, by her continent of origin and her spouse origin. The "synthetic fathers" have the characteristics of those actually married to the "synthetic" mothers. We use four measures to proxy parental background: (i) years of schooling completed, (ii) matriculation certificate, (iii) college education (or advanced degree) and (iv) log hourly wages.
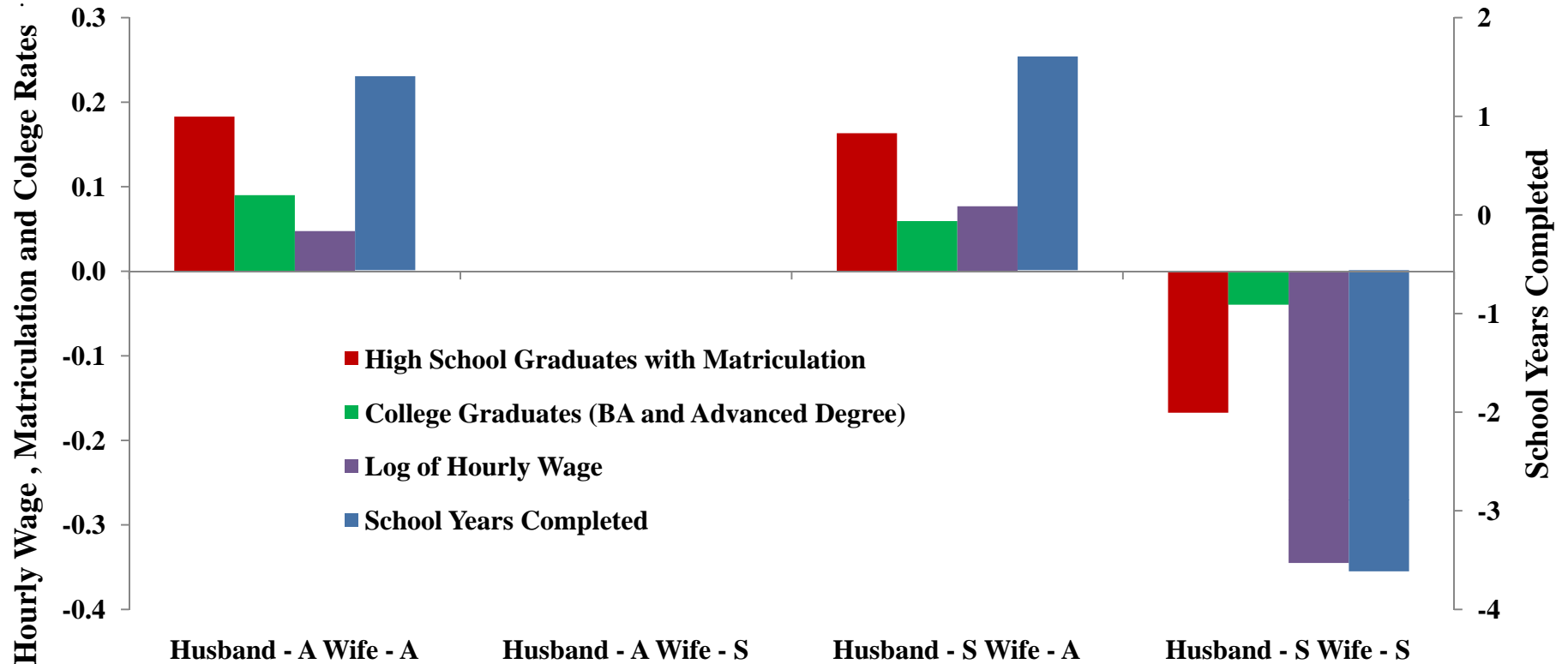
Figure 4b
Educational Attainments and Log Hourly Wages of Married Women (synthetic mothers)
by Own and Spouse's Origin

The figure shows both "parents "and offspring outcomes (wage and school years completed) 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. The "parents" are individuals born between 1920-1945 and therefore (assuming their first child was born when they were at least 20 years old) are the cohorts of parents. for the 30-55 years old individuals. While this is not a parent-offspring matched sample , we picked for the parents sample only married individuals whom we identified as couples living together.
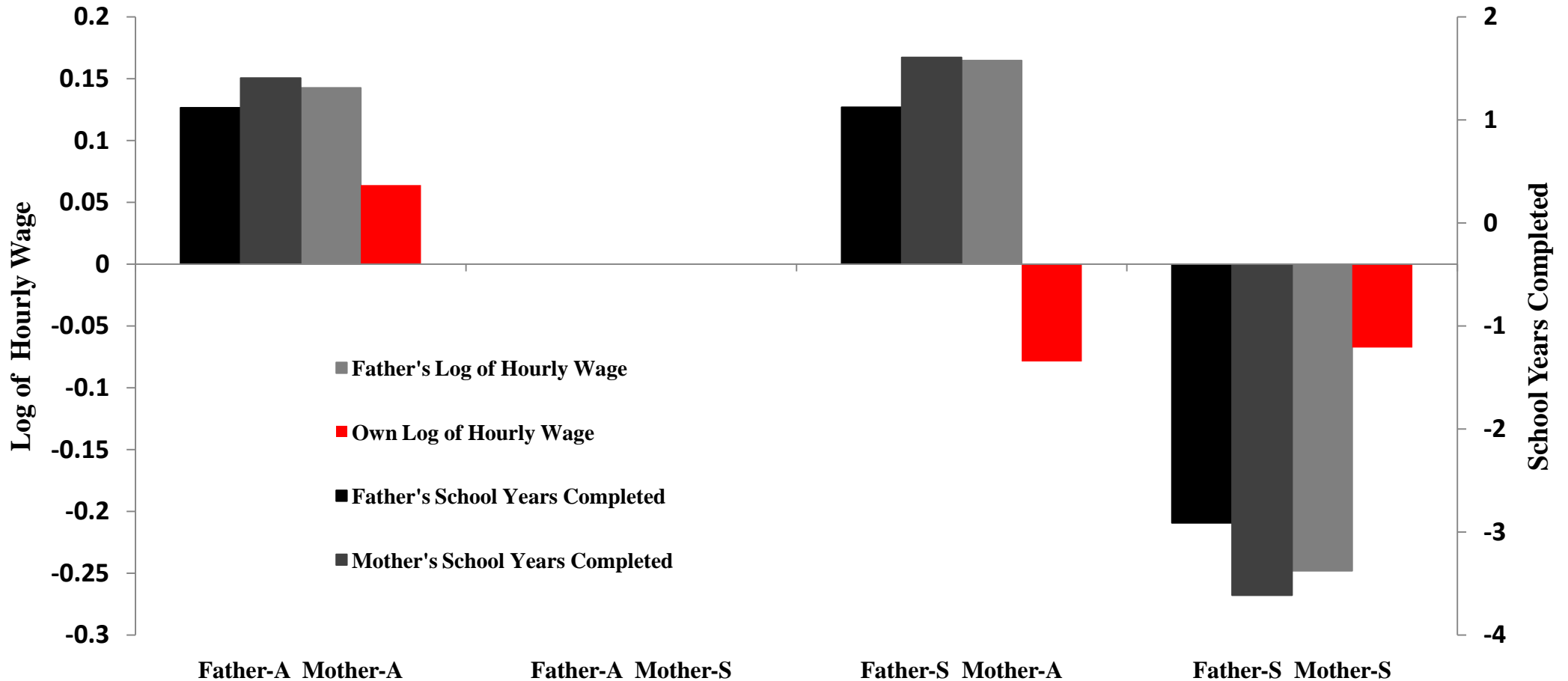
Figure 5a
Outcomes of Parents and their Offsprings, Israeli Born Jewish Males in 1995, by mix of Parents Origin

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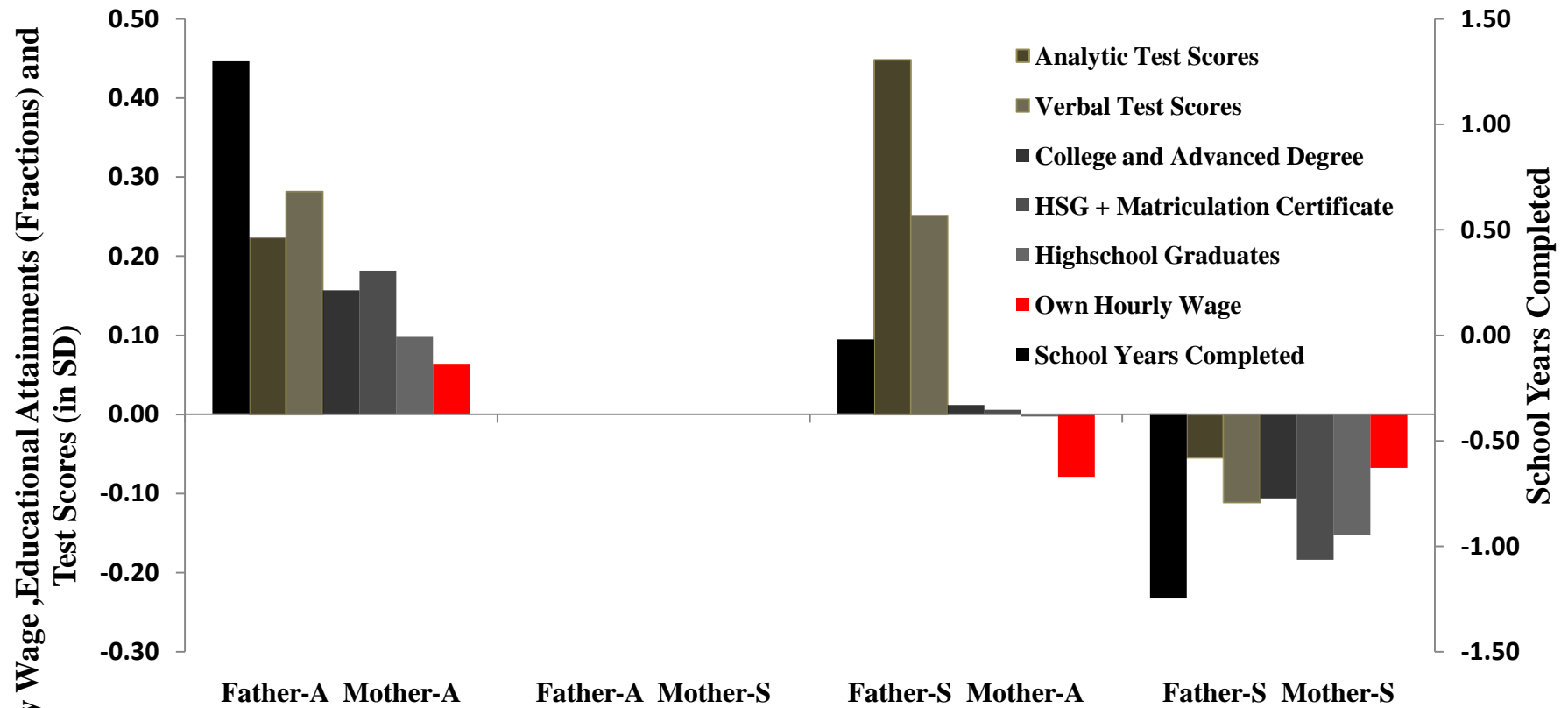
Figure 5b
Outcomes of Israeli Born Jewish Males in 1995, by mix of Parents Origin

Table A1. (Panel A)

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	Europe	Africa	Asia	Unknown	Total	Beginning of Period
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Before 5.15.1948	7,754	377,381	4,041	40,895	52,786	482,857	
After 5.15.1948							
1948-1951	5,140	326,786	93,951	237,352	24,395	687,624	716,700
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
Total by the End of 1999							**4,701,600**

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 A1 (Panel B)
Main Waves of Immigration to Israel Before and After the Independence of Israel,
By Country of Origin of the Immigrant (As a Fraction of the Total Number of Immigrants)

Time Period	America	Europe	Africa	Asia	Unknown	Total
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Before 5.15.1948	0.016	**0.782**	0.008	0.085	**0.109**	1.000
After 5.15.1948						
1948-1951	0.007	**0.475**	0.137	**0.345**	0.035	1.000
1952-1960	0.034	**0.347**	**0.490**	0.119	0.010	1.000
1961-1964	0.065	**0.339**	**0.506**	0.085	0.004	1.000
1965-1971	**0.217**	**0.413**	0.188	0.174	0.008	1.000
1972-1979	**0.210**	**0.672**	0.048	0.068	0.002	1.000
1980-1989	**0.289**	**0.468**	0.152	0.088	0.003	1.000
1990-1997	**0.039**	**0.867**	0.046	0.047	0.001	1.000

Notes: The columns of this table are calculated by dividing each column (i-v) in Table A1 panel A by the total number of immigrants
The two main origins of immigration in each period are highlighted in bold.
In the period 1990-1997 the immigration from Ethiopia (0.046) is highlighted as well.

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
Distribution								
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
Marital status								
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
Education								
School Years	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

* Individuals who were not self employed or salaried workers did not work
or worked in cooperative, kibbutz or as unpaid family members

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
Labor Market									
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
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
Locality in 1995									
Three Major Cities	**0.24**	**0.23**	**0.23**	**0.17**		**0.24**	**0.22**	**0.24**	**0.17**
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
Localities 2-199K	**0.65**	**0.68**	**0.68**	**0.75**		**0.76**	**0.78**	**0.76**	**0.83**
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
Rural areas	**0.06**	**0.05**	**0.05**	**0.06**		------	------	------	------
Moshav	0.06	0.05	0.05	0.06		------	------	------	------
Kibbutz	0.0	0.0	0.0	0.0		------	------	------	------
Other	**0.04**	**0.04**	**0.03**	**0.03**		------	------	------	------

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
Distribution								
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
Marital status								
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
Education								
School Years	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

* Individuals who were not self employed or salaried workers did not work
or worked in cooperative, kibbutz or as unpaid family members

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

	All Individuals (N=49,346)				FTFY Sample (N=18,659)			
	AA	AS	SA	SS	AA	AS	SA	SS
Labor Market								
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
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
Locality in 1995								
Three Major Cities	**0.25**	**0.23**	**0.24**	**0.17**	**0.30**	**0.26**	**0.25**	**0.21**
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
Localities 2-199K	**0.65**	**0.70**	**0.68**	**0.75**	**0.70**	**0.74**	**0.75**	**0.79**
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
Rural areas	**0.06**	**0.05**	**0.04**	**0.05**	------	------	------	------
Moshav	0.06	0.05	0.04	0.05	------	------	------	------
Kibbutz	0.0	0.0	0.0	0.0	------	------	------	------
Other	**0.04**	**0.02**	**0.04**	**0.02**	------	------	------	------

Table A3a
Self-Employed, Salaried Workers and Government Sector by father's and mother's origin.
Israeli Born Jews aged 22 to 65 as measured in 1995.
Israeli 1995 Census Micro Files

Ethnic Groups	Salaried Workers		Self-employed		Government	
	(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
SA	**0.011**	**0.008**	**-0.001**	**0.003**	**-0.011**	**-0.010**
	(0.017)	(0.017)	(0.017)	(0.016)	(0.017)	(0.017)
AA	-0.012	0.021	0.017	-0.014	0.054	-0.011
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
SS	-0.003	0.008	0.016	0.007	-0.004	0.019
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
AS (Level)	0.799	0.752	0.176	0.217	0.207	0.162
	(0.011)	(0.052)	(0.010)	(0.051)	(0.011)	(0.053)
Controls	No	Yes	No	Yes	No	Yes
R-squared	0.00	0.02	0.00	0.02	0.00	0.04
N	44851	44851	44851	44851	44851	44851

Notes: 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.

( ) Robust standard errors are reported in parenthesis

Table A3b
Self-Employed, Salaried Workers and Government Sector by father's and mother's origin.
Israeli Born Jews aged 30 to 55 as measured in 1995.

Ethnic Groups	Salaried Workers		Self-employed		Government	
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
SA	**0.000**	**0.006**	**0.012**	**0.008**	**0.005**	**0.000**
	(0.023)	(0.023)	(0.022)	(0.022)	(0.023)	(0.023)
AA	0.022	0.034	-0.013	-0.025	0.050	-0.003
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
SS	0.006	0.014	0.007	0.002	-0.003	0.026
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
AS (Level)	0.760	0.749	0.215	0.215	0.214	0.178
	(0.014)	(0.052)	(0.013)	(0.051)	(0.014)	(0.051)
Controls	No	Yes	No	Yes	No	Yes
R-squared	0.00	0.01	0.00	0.01	0.00	0.04
N	31727	31727	31727	31727	31727	31727

Notes: 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.

( ) Robust standard errors are reported in parenthesis

Table A4

Origin Related Differences in Performance in The Military Service in The Israeli Defense Forces

Men History File, Israeli Born

Panel A: By Origin of Father

Variables	Fraction Recruited		Yrs Served (not officer)		Fraction of Officers	
	(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
Father born in Asia or Africa	**0.05**	**0.06**	**-0.08**	**-0.01**	**-0.11**	**-0.04**
	(0.01)	(0.01)	(0.05)	(0.05)	(0.02)	(0.02)
Controls	No	Yes	No	Yes	No	Yes
R-squared	0.011	0.074	0.003	0.041	0.039	0.137
Observations	1115	1115	976	976	1115	1115

Panel B: By Origin of Both Parents

Variables	Fraction Recruited		Yrs Served (not officer)		Fraction of Officers	
	(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
SA	**0.04**	**0.03**	**0.04**	**0.02**	**-0.05**	**-0.09**
	(0.07)	(0.06)	(0.23)	(0.23)	(0.08)	(0.08)
AA	-0.04	-0.05	0.05	0.00	0.03	-0.02
	(0.04)	(0.04)	(0.15)	(0.15)	(0.05)	(0.05)
SS	0.01	0.01	-0.03	-0.01	-0.08	-0.07
	(0.04)	(0.04)	(0.15)	(0.14)	(0.05)	(0.05)
Controls	No	Yes	No	Yes	No	Yes
R-squared	0.01	0.08	0.00	0.04	0.04	0.14
Observations	1115	1115	976	976	1115	1115

Notes: The table reports three measures of performance in the Israeli Defense Forces (IDF):

(i) Whether an individual was recruited to compulsory service (ii) The time served in IDF for individuals

choosing not to join the permanent service (iii) Whether an individual became an officer

Controls are analytic and verbal test scores and dummy variables for six education groups

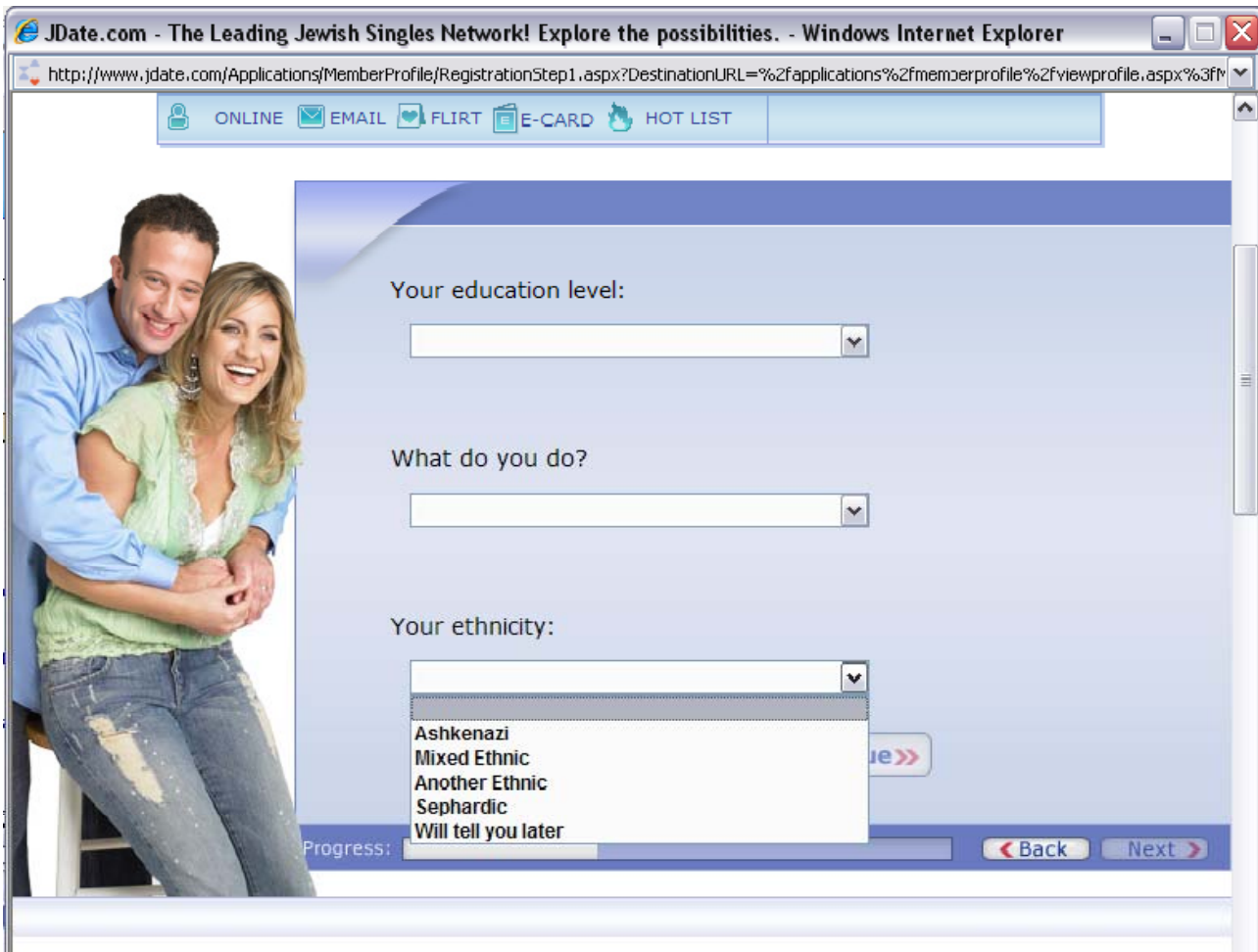( ) Robust standard errors are reported in parenthesis

Figure A1
Askenazi-Sepharidc Affiliations Outside of the Labor Market
Evidence from Jdate - A Global Match Making Web Site

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.