

DISCUSSION PAPER SERIES

IZA DP No. 11261

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## ABSTRACT

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### **Voting Patterns and the Gender Wage Gap**

Striving for gender equality presents major challenges but the benefits are vast, ranging from reduced conflict, both within and between communities, to higher economic growth. Unfortunately, Israel's gender wage gap remains one of the highest among developed countries, despite a growing reverse gender gap in educational attainment. Investigating the gender wage gap for the Jewish majority and for the Arab minority, we find evidence of gender segregation by industry and occupations in addition to a glass ceiling effect for Jewish and Arab women. Using data from the Israeli Household Income Survey and electoral data from the Israeli parliamentary elections (2009), this paper provides novel evidence of the role of voter preferences in explaining the persistence of gender pay gaps. Importantly, we find strong evidence of an association between a higher share of votes allocated to nationalist parties, in a given locality, and a larger, (adjusted), gender wage gap for both Jewish-Israelis and Arab-Israelis.

**JEL Classification:** J21, J31, J61, J45, C14, C24

**Keywords:** gender wage gap, voting behavior, glass ceiling, glass door, social attitudes, discrimination

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## NON-TECHNICAL SUMMARY

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Our main results examine the effect of voter preferences, at the locality level, on wages and the gender wage gap for Jewish and Arab Israelis. Jewish and Arab political parties were categorized based on the language used in party platforms: Category 1 parties prioritize gender equity in many spheres, Category 2 parties focus on a nationalistic agenda and references to women's rights are largely limited to human rights, whereas Category 3 parties do not mention women in their platforms. A high share of Category 1 voters in a given locality is associated with both a sizeable premium and a gender-wage gap that increases at higher points of the wage distribution. Furthermore, the premium is reduced and the gender gap is eliminated when characteristics such as education and industry are accounted for. Localities with a high percentage of Category 3 voters earn the lowest wages, but with the exception of the 10<sup>th</sup> percentile, there is barely a gender-wage gap. This may reflect a lack of economic development in these localities, which would explain why they have not yet experienced the emergence of social gaps at higher points of the wage distribution. In these Category 3 voting municipalities the inclusion of controls eliminates the wage gap at the bottom decile.

There is barely a gender gap for Jewish and Arab females living in any type of municipality with a high share of Category 2 voters. However, when wages are adjusted for particular controls, Jewish and Arab women experience a considerable penalty that is persistent across specifications and quantiles of the distribution. This points to the existence of social/cultural norms that are not conducive to promoting greater gender equality in the workplace. One way of interpreting these results is that nationalism, both Arab and Jewish, runs counter to female economic empowerment, an issue that should be part of our political and public discourse. Future research should examine more deeply why it is that those localities, in which nationalism is a prominent part of the local culture, are more likely to produce a gender wage gap, and possibly other inequities. Of course, we find that a glass ceiling effect remains in all localities and this most probably evolves from the particular competitive environments in high wage employment and the time constraints faced by women generally. It is thus likely that government policies that are family-friendly, such as subsidized childcare, or employer-focused policies, such as more flexible work schedules, would benefit women in all parts of Israel.

## 1. Introduction

Women's empowerment and greater gender equality, both political and economic, are important for long-term growth and prosperity. Greater female labor force participation and the accumulation of female human capital increases the aggregate labor supply, as well as the economy's productivity and output. In addition, quantitative studies find that greater gender equality is associated with a reduction in the intensity of inter- and intra-state, political conflicts. These studies have focused on a country's level of hostility towards other nations (Caprioli, 2000), the level of violence and aggression that a country exhibits during inter-state crises (Caprioli, 2000; Caprioli and Boyer, 2001), and the likelihood of a country experiencing intra-state conflict (Bussmann, 2007, Caprioli, 2005). Caprioli (2000, 2003) suggests that the intensity of conflict is attributable to domestic gender inequality, where there is a hierarchical social structure and a high degree of intolerance shown towards disadvantaged groups. This intolerance translates into an aggressive worldview that considers some people or countries to be superior. Greater gender equality thus weakens the norms of violence and aggression prevalent in such hierarchical social structures, and has a pacifying effect on state policy. In fact, Bussmann (2007) finds that gender equality is also associated with good governance, a quality which also promotes peace.

Unfortunately sizeable gender pay gaps persist, even in developed countries, and according to the OECD report, *Education at a Glance* (2016), Israel has one of the greatest. Notably, for college graduates in 2014, the unadjusted hourly earnings of women were approximately 66% of the hourly rate for men. The gender gap in the employment rate was approximately six percentage points in favor of men<sup>2</sup>; this is despite the fact that the reverse gender gap in educational attainment had grown. In 2014, 60% of bachelor's, and 61% of master's degrees conferred by Israeli universities were awarded to women. Given the importance of improving the integration of women in the labor market, with the aim of achieving gender parity, the purpose of this paper is twofold.

First, we undertake a preliminary analysis of the factors that drive the gender-wage gap in Israel for the Jewish majority and the Arab minority. Our analysis also provides some insights into the ethnic wage gap between Jewish-Israelis and Arab-Israelis. To compare our results to international studies on the gender wage gap, we use conventional wage determination variables to decompose the observed gender, (and ethnic), wage gap into an explained and unexplained

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<sup>2</sup> Specifically, 90% of Israeli men and 84% of Israeli women were employed in 2014.

effect during our period of interest, 2004-2009. Unlike previous studies examining social gaps in Israel, (see section 3.2), our analysis decomposes the gender wage gap at the mean *and* throughout the wage distribution, separately for Jewish-Israelis and Arab-Israelis. We find that differences in human capital and job characteristics explain a large portion of the ethnic wage gap in Israel, while the analysis of the gender-wage gap reveals evidence of gender segregation in particular industries and occupations, as well as persistent wage penalties for Jewish and Arab women that are mostly unaccounted for. The preliminary results demonstrate that gender differences in conventional individual-level variables, e.g. human capital and job characteristics, provide an incomplete picture of the causes of gender inequality in Israel. These results motivated us to investigate causal factors at the local level.

Our second purpose, and main contribution, is to identify the impact of social attitudes on the gender pay gap by using voter preferences at the municipal<sup>3</sup> level as a proxy for social attitudes. We find strong evidence of an association between a higher share of votes cast for nationalist parties and a greater, (adjusted), gender-wage gap, in both Jewish and Arab municipalities. Furthermore, in Arab and mixed, Arab-Jewish communities, those municipalities with a higher share of people voting for Mainstream Jewish parties also had lower wage gaps. It is worth mentioning that, in principle, these results could reflect both demand- and/or -supply-side influences relating to employee and employer preferences, and the analysis here does not speak to which effect dominates.

The primary dataset used is the micro level data from the Israeli Household Income Survey (IHIS) of the Israel's Central Bureau of Statistics (ICBS). Data from the IHIS is then combined with locality level data on voters' political preferences during Israel's parliamentary elections of 2009. Our analysis exploits the large variations in gender differences in economic outcomes across municipalities in Israel, inherent in the IHIS data. Our analysis also takes advantage of the fact that the nature of Israel's political system gives rise to a large number of political parties. We base voter preferences at the municipal level on the percentage of votes cast for each party in the 2009 election. A notable feature of Israel's political system is the low electoral threshold<sup>4</sup> required for a party to secure seats in the Israeli parliament, the Knesset. In this paper, political parties are

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<sup>3</sup> Municipal(ity) and local(ity) are used interchangeably throughout the entire paper.

<sup>4</sup> The threshold in 2009 was 2% but this was increased to 3.25% in 2015.

categorized by the extent to in which their platforms have publicly specified policy proposals that promote the advancement of women in the labor market.<sup>5</sup> There are three main categories, the first of which consists of parties that strongly promote the advancement of women in the labor market. The second consists of parties with platforms that briefly mention the importance of women, their platforms being mostly dedicated to nationalist causes. The third category contains parties which are concerned with advancing the interests of specific communities, but do not mention women in their platforms. Arab political parties are classified in the same way.

We use three models to measure the impact of voting patterns on the gender wage gap, relying on the variation of gender differences in wages across Israeli municipalities and on the large number of political parties presenting a broad spectrum of views regarding the issue of gender parity in Israel. The first model is a simple linear regression, where proxies for voting patterns are also interacted with a female dummy to reveal the level of gender disparity associated with each category of political parties. Our second model uses Quantile Regressions (QR) to estimate wages at the 50<sup>th</sup>, 10<sup>th</sup> and 90<sup>th</sup> percentile of the distribution using the same controls as in the simple regression in order to assess whether the effect of voter preferences on wages and the gender wage gap is uniform. Given the nested nature of the data, a hierarchical linear model (HLM) model is also estimated to account for the possibility that male wages and the gender wage gap vary across localities. A chi-squared test rejects the null hypothesis that random effects are zero and confirms that HLM is a better fit for the data than a simple regression. Yet, none of the three models above addresses the possibility that individuals self-select into their locality of residence, potentially leading to an omitted variable bias along with inconsistent parameter estimates. As a robustness check, we follow the method of Bourguignon et al (2007) to correct for selection bias where the selection equation is based on a multinomial logit. We find that accounting for selection does not alter the qualitative nature of our results.

The rest of the paper is organized as follows: Section 2 reviews the relevant literature and outlines the mechanisms through which social attitudes and voter preferences affect the gender wage gap. Section 3 places the study in the Israeli context. Section 4 describes the data and

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<sup>5</sup> We find that this classification provides a better means of exploring the variation in gender disparity across municipalities than standard political categories such as left-wing, right-wing, center and religious parties.

descriptive statistics while section 5 presents the empirical strategy. Section 6 presents the results and section 7 concludes.

## 2. Related Literature and Theory

### 2.1. Literature Review

This paper is related to two strands of literature: the first strand is based on the evolution of the gender-based- wage gap and possible explanations, and the second strand is related to the impact of cultural preferences and social attitudes on economic outcomes. One of the most common methods for studying gender-wage gaps is the Blinder (1973) and Oaxaca's (1973) method, which provides an analytical method for decomposing wage gaps with the aim of examining their origins. An extensive meta-analysis of gender-wage gaps by Weichselbaumer and Winter-Ebmer, (2005) finds 788 studies on the topic<sup>6</sup> worldwide, approximately 78% of which used the Oaxaca-Blinder decomposition. They show that between the 1960's and 1990's, the raw gender wage gap fell from 65% to 30%, but almost the entire decline can be attributed to an increase in female endowments. Likewise, in the United States, Blau and Kahn (2016) find the gap decreases from 0.47 log points in 1980 to 0.23 log points in 2010, but the unexplained portion of the gap only fell from 48% to 38% during the same time period. An analysis of gender wage gaps across five developed countries using Glassdoor salary data, identified a gender wage gap of 24.1% in the United States, with two-thirds of that wage gap explained by differences in workers' characteristics and the most dominant factors being differences in industry and occupational choices (Chamberlain, 2016).

There are fewer studies based on Arab and Muslim countries. A study by Tansel (2005) examines gender-wage gaps in the public and private sectors in Turkey and found a large wage gap of 0.27 log points in the private sector, over 40% of which was unexplained. The gap in the public sector was almost nonexistent, largely due to the positive selection of females in the labor market, i.e. a negative endowment effect. In fact, the unexplained portion was about 0.10 log points. A study of the Egyptian economy shows a trend of widening gender gaps with regards to earnings and access to employment between 1988 and 1998, due to the greater geographical immobility of female workers during a period of major structural changes, that also saw limited opportunities in the public sector (Assad and Arntz, 2005).

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<sup>6</sup> The paper found 263 relevant papers, but since many authors studied wage gaps for several different populations or time periods, several papers produced more than one estimate. The total number of estimates was 788.

The gender wage gap was also studied using a variety of econometric techniques that did not involve decomposition analyses. For example, experimental studies by Gneezy, Niederle, and Rustichini (2003) and Niederle and Vesterlund (2007) show that women are less likely to self-select into a competitive game, and that gender gaps increase in competitive environments, where women underperform relative to men. In a recent paper, Card et al (2016) find that women are more likely, than men, to be selected into firms with relatively low pay premiums and to extract a lower share of the firm-specific surplus when bargaining. Another avenue of research shows that the wage gap results from differential access to high-wage jobs, where women must demonstrate a greater level of ability than their male peers to acquire the same job (Lazear and Rosen, 1990). In view of the perceived, greater risk associated with hiring females, who might stop working, albeit temporarily, due to familial/social obligations, employers may be wary of promoting women unless they demonstrate a higher level of productivity. Women are also shown to be less responsive to changes in wages, as is evidenced by a lower wage elasticity of labor supply (Barth and Dale-Olsen, 2009; Hirsch, Schank and Schnabel, 2010). These studies attribute a large portion of the gap to monopsonistic discrimination. Similar studies compute a motherhood penalty and argue that the gap is due to mothers being more likely to 1.) work in part-time jobs (Waldfogel, 1997) or 2.) adjust working hours towards a more flexible schedule (Felfe, 2012).

The findings from this literature were brought together by Goldin (2014) in her Presidential Address in the American Economic Association, where she argued that significant progress had been made in combating the gender-wage gap, but that jobs should be designed differently in order to eliminate it altogether. In particular, flexibility with respect to hours worked should not be punitive and more importantly, earnings should be a linear function of hours worked rather than a convex one.<sup>7</sup> Accordingly, differences in compensation schemes and temporal flexibility might explain the greater equality found in some professional categories, such as pharmacists (Goldin and Katz, 2016), when compared to others, such as lawyers<sup>8</sup> (Wood, Corcoran, and Courant, 1993),

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<sup>7</sup> Presumably, these changes might eliminate other penalties associated with the pay gap including the “motherhood penalty”, wage reductions resulting from monopsonistic discrimination or unjustified exclusion from promotion. For example, the motherhood penalty is likely related to working fewer hours or more flexibly (Felfe, 2012). Similarly, women may be more reluctant to switch firms when schedules are rigid because they want to build social capital before requesting flexible work arrangements, leading to a higher level of monopsonistic discrimination.

<sup>8</sup> Indeed, the lack of flexibility in the legal profession can lead to a performance gap. Azmat and Ferrer (2016) find that men outperform women by a large margin in the law profession using a variety of performance measures such as billable hours and number of new clients. They also find that measures of gender differences in performance explain a large share of the earnings gap that is unexplained after controlling for individual and firm characteristics.

MBA holders (Bertrand, Goldin and Katz, 2010) and physicians (Sasser, 2005). Outside the US, several studies have also documented the presence of a gender-wage gap, especially at the high end of the distribution (Arulampalam et al, 2007; Kee, 2006; Albrecht and Vroman, 2003; McDowell et al, 1999). Thus, it is likely that nonlinear compensation schemes with respect to hours worked and a lack of flexibility are prominent features of modern jobs, especially lucrative career paths.

In the case of Jewish-Israelis, a considerable portion of the gender-pay gap is unexplained – more than 80%– throughout the wage distribution, using our limited controls. Thus, in Israel, and especially among Jewish Israelis, gender differences in individual attributes provide us with a severely limited understanding of the mechanisms which explain the evolution of the gender-pay gap. This paper is interested in exploring a wider range of explanations for the gender-wage gap. For instance, as Dagan-Buzaglo et al (2014) have shown, gender discrimination in Israel’s labor market, reflected in an earnings gap, is ascribed to social attitudes about the role of women and a lack of transparency concerning pay structures in the private sector. Bias is also shown to be inherent in the burdensome process of seeking to hold employers accountable for gender discrimination.<sup>9</sup> In the absence of strictly enforced laws against gender discrimination in the labor market, and/or the above-mentioned policies related to job design, it is possible that social attitudes serve as a powerful predictor of gender differences in economic outcomes.

Thus, this paper also contributes to the growing body of evidence in the economics literature documenting the robust relationship between social attitudes and economic outcomes, (see Fernandez, 2010 for literature review), by using voter preferences at the municipal level as a proxy for social attitudes. To our knowledge, voting patterns have never been used as a proxy for social attitudes, or as a predictor of economic outcomes. In several analyses, social attitudes are proxied for by using responses to survey questions from the World Values Survey (WVS). For example, Fernandez (2007) uses the percentage of individuals in a country who believe that housework is as fulfilling as formal employment, as a cultural proxy. She finds that female labor force participation rates for second-generation American women are negatively correlated with the

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<sup>9</sup> Legislation that requires equal pay for women is practically not enforced, since the burden of proof lies with female employees, who must provide sufficient evidence of a causal link between gender discrimination and lower earnings; meanwhile, new legislation to increase transparency has been resisted by key players.

cultural proxy of their source country. Similarly, Fernandez and Fogli (2009) show that fertility rates for second-generation American women are positively correlated with the total fertility rates of their country of ancestry. Given the constraints on the availability of data on Israelis' responses to survey questions regarding gender roles, voting behavior can be utilized as a summary statistic for voters' social values and preferences. Specifically, to the extent that political party affiliation represents people's views on economic and social policies, including the role and treatment of women in the labor market, differences in voting trends are expected to play a significant role, directly and indirectly, on gender differences in economic outcomes.

## *2.2. Theories and Mechanisms*

We turn next to a consideration of the main mechanisms that link social attitudes and voter preferences to gender differences in economics-outcomes. To introduce the first mechanism, note that a series of recent articles have highlighted the importance of female policymakers in promoting the advancement of women. A notable example is the presence of low-caste female members in India's state legislatures, where they have promoted inheritance rights, advanced health care for women (Rehavi, 2007) and endorsed the widespread educational attainment of women (Clots-Figueras, 2011; 2012). Similarly, there is evidence that women in leadership roles in the villages of rural India are more likely to spend on infrastructure projects that address the concerns most commonly raised by women (Chattopadhyay and Duflo, 2004). A recent example of a female Israeli politician who was very active in promoting women is Shelly Yachimovich, leader of the Labor Party, (one of the parties that emphasizes women's integration into the labor force), during the years 2011-2013. Notable examples of legislation that she was involved in getting passed included protecting women in low pay sectors from dismissals and wage penalties when receiving assisted reproductive care. She also secured an amendment of anti-discrimination laws shifting the burden of proof to the employer. Thus, one mechanism by which voting preferences can affect the gender wage gap is if political parties, with platforms that emphasize the importance of advancing women's rights in political, economic and social spheres, are also more likely to nominate, hire and elect female politicians. In turn, female politicians or policymakers become pioneers in establishing gender-neutral or affirmative action policies in labor markets (and elsewhere), thereby reducing wage gaps.

Voting preferences can also have an indirect effect on gender differences in economic outcomes by promoting policies that disproportionately affect women. For example, consider locality A and locality B in Israel, where the former consists of predominantly Political Party 1 voters and the latter consists of a greater portion of Political Party 2 voters. In locality A, some voters prefer Party 1 because of its relatively greater commitment to female advancement<sup>10</sup>. Other voters in locality A, however, have a wider set of expectations and demands including higher minimum wages, generous public pension schemes, and/or a progressive tax structure. This is in great contrast to voters in locality B, who support Political Party 2. Politicians from this party are not only known for their overtly nationalistic rhetoric, but many have traditionally supported economic policies in favor of privatization, austerity, deregulation, and flatter tax rates. Some have also been known to defy institutions that were traditionally perceived to prioritize equality at the expense of efficiency, such as labor unions and unemployment benefit programs. Thus, relative to members of locality B, we expect those in locality A to have a higher overall preference for redistribution from the wealthy to low earners. This means that even seemingly gender-neutral policies promoted by Party 1, are naturally in favor of women, who are overrepresented in the lowest income deciles in Israel<sup>11</sup>. In conclusion, since many parties, committed to reducing social gaps more generally are also likely to promote the advancement of women, we believe voting patterns have at least an indirect effect on gender differences in outcomes.

In addition, it is also likely that voters' preferences and beliefs are reinforced by gender differences in economic outcomes in the labor market, an issue that is related to whether voting behavior is driven by supply-side or demand-side preferences. If voting behavior is primarily a proxy for supply-side preferences, then in locality A, one would expect to find more women who possess a higher level of labor market attachment through a strong and supportive network of family and community members, relative to localities where women are expected to take a leading

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<sup>10</sup> For example, the Labour Party, allocated three of its top five seats to women in the 2011 parliamentary elections.

<sup>11</sup> Some may argue that although members of Political Party 2 tolerate greater inequality generally, as a means of promoting greater prosperity for all, their policies, nevertheless, promote greater gender equality. This might be because they seek to reduce the pay differentials between a more protected, primary and a less-protected, secondary labor market (given there are disproportionately more women in the latter). They might also argue that greater competition, generally, is the best way to shatter glass ceilings and to break down glass doors. Finally, free-market parties might argue that, in reducing the power of labor unions, they weaken the ability of the latter to defend a status-quo that implicitly includes the more favorable treatment of men. While some or all of these arguments may hold in the long run, the short-run consequences of free market policies are not in favor of women and/or other disadvantaged minorities. In this paper, we only address the short term effects of voting behavior on the gender gap.

role in home production, community building and social affairs. In contrast, demand-side preferences could dominate if managers, firm owners and HR personnel in locality A are more likely to implement and enforce inclusive family-friendly policies in the workplace. For the purposes of this paper, it is not relevant whether voting patterns are driven by supply-side or demand-side preferences but we aim to address endogeneity and reverse causality concerns by: 1.) using an extensive set of controls, 2.) modeling the nested nature of the data using a hierarchical linear model (HLM), and 3.) accounting for selection into the type of locality in which one resides.

### **3. The Israeli Context (or Background)**

#### *3.1. Ethnic and Gender Divisions in the Israeli Labor Market*

Israeli society is highly polarized with many divisions. For the purpose of this paper, we elaborate on the ethnic division between Jewish-Israelis and Arab-Israelis, as well as the gender divide within each ethnicity.

Arab-Israelis comprise around one fifth of Israel's population, and approximately 80 percent are Muslims. There is a high level of residential segregation between Jews and Arabs such that almost all Israeli municipalities have a vast majority of either Jews or Arabs. Even in the few existing "mixed" cities and towns, the Arab minority population usually lives in separate neighborhoods from the Jewish majority population. Most Arab-Israelis live in the Galilee region in Northern Israel and are formally equal citizens with full rights. However, historically they have been marginalized due to their non-Jewish status. This was particularly evident during the period 1948 to 1966, when the Arab-Israeli population was subject to military rule imposed by the Israeli government, suffering misappropriation of land and exclusion from various institutions of social and political power. Today, Arab-Israelis are still perceived as the only permanent non-Jewish minority, a fifth column loyal to hostile neighboring Arab countries. This is not to mention the common perception of Arab-Israelis as a hostile group that shares political goals with their Palestinian brethren in the Occupied Territories---the West Bank and Gaza--- who are involved in a costly conflict with Israel (Miaari and Sauer, 2011; Adnan, 2015; Etkes and Zimring, 2015).

These socio-political circumstances have a direct effect on the economic outcomes and fortunes of Arab-Israelis. In fact, Miaari, Zussman and Zussman (2012) find that job separation rates increased for Arab citizens, relative to Jewish citizens, following the uprising in the Palestinian territories against Israel's occupation in 2000. Furthermore, in addition to the

prevalence of residential segregation along ethnic lines, a segmented labor market emerged where Arab workers were often relegated to a secondary labor market, largely comprised of low and semi-skilled jobs; it was common for workers in this setting to be mismatched to their occupation and receive lower compensation (Miaari and Lazarus, 2015). These developments eventually contributed to the escalation of ethnic tension, which sparked a heated but constructive debate about the role of Israel's Arab minority and their contribution to the economy. On December 30, 2015, the Israeli government agreed to implement a five year plan (2016-2020) to improve the economic status of Arabs in Israel, which if properly executed can have a positive and long-standing effect on GDP<sup>12</sup>. As it stands, Arabs comprise approximately 20% of Israel's population but contribute only 8% to GDP / national income and represent 50% of the country's poor. Given the unique and controversial position of Arab-Israelis in the country's political sphere, their economic woes are not surprising. Meanwhile, since 2000, little, if any, research has been done to identify the factors that perpetuate the ethnic wage penalty suffered by the Arab citizens of Israel, relative to their Jewish compatriots<sup>13</sup>. This paper is the first to explore the determinants of the ethnic wage gap at the mean and throughout the wage distribution.

According to the Israeli Central Bureau of Statistics (ICBS), women earn substantially less than men, despite the reverse gender gap in educational attainment, where women comprised 57.6% of undergraduate level students, 61.3% of master's students, and 52.5% of all PhD candidates during the academic year of 2014-15. An analysis of labor market trends among Jewish-Israelis between the years of 1972 and 2012 finds that gender gaps in Israel's labor market were narrowed considerably (Mandel and Birgier, 2016). As was the case in other developed countries, gender differences in labor force participation and in wages have been substantially reduced, largely due to the rise of women's educational attainment during this period. Nevertheless, there remains a substantial gap in earnings, not to mention the existence of gender segregation by occupation and industry. In their study, Mandel and Birgier (2016) draw another parallel with other

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<sup>12</sup> Israel's five-year plan includes policies that range from the integration of the Arab enclave--increases in the provision of day care centers, access to public transportation, and establishment of high quality educational facilities and industrial parks-- to more inclusive policies in the dominant and primary labor market such as subsidies for Israeli firms hiring Arab-Israeli employees, quotas for Arab-Israeli employees, and stricter enforcement of anti-discrimination law.

<sup>13</sup> Miaari and Khattab (2013) estimate the ethnic wage penalty for Arab male citizens using OLS and quantile regressions. They also include a literature review on papers that studied the Arab disadvantage before 2000.

developed countries, observing that labor market changes in gender roles did not extend to the private sphere, with the division of labor at home remaining almost unchanged.

Moreover, the progress made by Jewish women in the labor market has not been fully matched by Arab women, who continue to lag behind according to several economic indicators, especially labor force participation and employment. Many hold the view that Arab society is more traditional and conservative with respect to gender roles, but there are also fewer opportunities presented to Arab women in the Israeli context. Thus, in addition to investigating the gender pay gap within each ethnicity and the ethnic wage gap for males, wages of Jewish-Israeli males are compared to those of Arab-Israeli females to investigate the cross ethnic-gender wage gap, allowing us to simultaneously explore the role of ethnicity and gender in observed wage differentials. While Israel's five-point plan is welcome, policy instruments are more effective when the factors that perpetuate wage gaps are identified using evidence-based research.

### *3.2. Previous Empirical Findings*

In this subsection, we present past empirical findings on the gender wage gap and ethnic wage gap in Israel. Different researchers took different approaches to studying these gaps. Some studied only one of the gaps while others studied their combined effect.

An earlier look at gender wage gap trends is documented by Haberfeld and Cohen (1998). They examine the wage gaps between Jewish, native-born, Israeli men and women in the years 1982, 1987 and 1993. Despite the notable reductions in gender differences in experience and education during this period, the overall pay gap for the Jewish population did not decrease. They find that the hourly earnings gap between Ashkenazi, (Western origin), men and women was in the range of 20-28%, while the corresponding gap between Ashkenazi men and Mizrahi, (Eastern), women ranged from 48.4-56.5%. Among Western Jews, the unexplained portion of the gap was larger than the net gap and the explained portion was in favor of women. For Western men and Eastern women, the unexplained part was around two thirds of the gap throughout the entire period. Haberfeld and Cohen (2007) extend the scope of this research to a longer period, 1975-2001, and include Arab men in their analysis. They focus on the changes in real wages and find that over that period, the real wages of Western men rose the most –by over 150%. Real wages rose, but to a lesser extent for other groups; for Eastern men the rise was about 125%, 120% for Western women, 100% for Eastern women and 75% for Arab men. Even though Western men experienced the

largest wage growth, they experienced the smallest improvement in education. The proportion of Western working men with at least a B.A. rose by only 20% during these 26 years, whereas the percentage of Eastern working men and Western working women with a BA almost doubled. The percentage of Eastern working women with a BA more than quadrupled, whereas the rate for Arab working men grew eightfold. Despite the large gains in educational attainment, social gaps at the ethnic, racial and gender level rose significantly in Israel during this time. This is evidenced by the increased returns to observable characteristics such as education for Western men.

Yaish and Kraus (2003) use data from the 1972 and 1995 Israeli censuses to examine changes in the gender wage gap among Israeli Jews over different sectors. They find that the overall, gross gender wage gap remained unchanged, at about 40%, but that the net gender wage gap, within sectors, decreased from between 16%-25% to 16%, in the public sector, and from between 33-50% to about 24-35% in the private sector. In the public sector, the gender wage gap was greater for service, than for non-service jobs in 1972, (25% compared to 16% for non-service jobs), but this difference disappeared in 1995. In the private sector, the gap was smaller in service jobs than in non-service jobs in both years. In the private sector, the authors also distinguish between the "core" of the sector, (with larger firms and better jobs), and the "periphery". In 1972, the wage gaps were larger in the core, but in 1995, they became larger in the periphery. Another study using census data, by Bental, Kraus and Yonay (2017) examines the effect of the economic liberalization that took place in Israel between 1995 and 2008, on the gender and ethnic wage gaps. All the gaps were measured in relation to the average earnings of the entire population pooled together. They find that the gender and ethnic wage gaps were, in both periods, smaller in the public sector than the private sector, but that their magnitude changed significantly in both sectors. Over the period 1995-2008, Jewish men increased their premium, compared to the pooled population, from 14% to 18% in the private sector and kept a 6-7% premium in the public sector. Over the same period Jewish women experienced a reduction in their wage penalty in the private sector, from 8% to 5%, and maintained a penalty of about 2% in the public sector. Meanwhile, Muslim men working in the private sector experienced a rise in their penalty, from 34% to 40%, whereas in the public sector, their premium increased from 7% to 19%. The penalty for Muslim women in the private sector fell from 70% to 58% and from 14% to 9% in the public sector. Changes in the characteristics of the workers were responsible for the improvement in women's position in the private sector, as well as for the deterioration in Muslim men's position. Changes in the returns of

those characteristics favored men, and changes in the unobserved characteristics effect was favorable for Muslim women, but unfavorable for Jewish women and Muslim men.

Based on ICBS income surveys for the years 1972-2011, Mandel and Birgier (2016) find that the monthly and hourly gender pay gaps increased from 15% and 33% in 1972 to 23% and 42% in 1982. During this period there was a substantial increase in the labor force participation rate of young mothers. In accordance with the findings of Haberfeld and Cohen (1998), these gender pay gaps barely changed over the next ten years, but started decreasing in the nineties. Using Israeli census data for 1983 and 1995, Shahrabani (2007) finds that the pay gap is largely attributable to gender differences in the returns to observable characteristics; this was especially the case in the services sector. Endeweld and Gottlieb (2013) use a Heckman correction to account for the choices made by men and women when joining the labor force, and found that when accounting for selectivity and differences in characteristics, the gender wage gap rose from 13% in 1999 to 14% in 2010 and 17% in 2011. They also found an ethnic wage gap between Jews and Arabs, rising from 12% in 1999 to 13% in 2010 and dropping to 9% in 2011. Geva (2015) estimated the gender wage gap separately for different sectors, finding an unexplained gap of about 10% on average and no statistically significant gap in the education sector. Mazar and Michelson (2010) focused on the public sector and found that the gender wage gap rose with age and was correlated with the wage in the worker's previous job.

A recent study on the subject was conducted by Fuchs (2016), who used OLS and Oaxaca-Blinder decompositions to determine the underlying factors behind the Israeli gender wage gap. He found a decrease in the raw wage gap from 0.51 log points in 1997 to 0.39 log points in 2014 for individuals between the ages of 25 and 64. After accounting for occupation types, education, ethnicity, experience, and especially working hours – the wage gap was reduced to only 0.16 log points. An Oaxaca-Blinder decomposition analysis for the year 2011 gave similar results, showing that about two thirds of the 0.42 log point wage gap was due to differences in characteristics, predominantly differences in working hours<sup>14</sup>. He also finds that a detailed analysis of occupation categories can provide further insights into the wage gap. For example, women are much less likely to enter growing and lucrative sectors such as those related to technology, and in college, are less

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<sup>14</sup> Data limitations prevented the author from performing similar decompositions for later years.

likely to major in Math and Science. One limitation of the study is that Arab-Israelis are not studied as a distinct group from Jewish-Israelis.

Studying the ethnic wage gap among men, Asali (2006) uses ICBS income survey data from 1990 to 2003 to examine the changes in the gap and what explains them. He finds that the gross hourly wage gap between Jewish and Arab men rose from 40% in 1990 to 77% in 1999, but then declined, reaching 56% in 2003. The part of the wage gap explained by differences in characteristics declined sharply from 63% in 1990 to 24% in 2003. Occupational segregation was responsible for 13-25% during the first half of the period and for 15-20% of the gap during the second half. The unexplained portion increased from -12% (effect in favor of Arabs) to 38% in 1999 and fell to 31% in 2003. Levanon and Raviv (2007) examined the wage gap between Jewish men and men of each Arab minority group (Muslim, Christian and Druze) separately, and focused on Northern Israel using the 1995 census data. They found the wage gaps between Jews and Muslims, Christians and Druze to be 28-37%, 14-20% and 13-22% respectively. The unexplained part varied, but was larger for more educated subgroups. In each decomposition analysis, a substantial part of the gap was due to occupational segregation.

### *3.3. Why Israel*

In many ways, Israel presents an ideal case for exploring the relationship between voting patterns and wage gaps. For one, its electoral system encourages many political parties to compete for seats in the Israeli parliament, (the Knesset) due to the low electoral threshold required (2% until 2015 and 3.25% thereafter) to secure seats. The multitude of parties generates a wide range of voter preferences and patterns of voting across Israeli localities. This variation is necessary to accurately study the effect of voting patterns on economic outcomes since several political parties overlap on one issue (e.g. gender equality) but differ immensely on other issues (e.g. the two state solution). Secondly, Israel is an ethnically diverse country with a high level of ‘horizontal’ inequality among groups, and most importantly between Jews and Arabs (Haberfeld and Cohen, 2007). Polarization has led to persistent residential segregation of Israeli Arabs and Israeli Jews, allowing us to analyze the economic effects of voter preferences at the municipal level, separately for both Arab and Jewish parties.

Lastly, overall income inequality in Israel is high relative to other developed countries due to the impact of a wide range of structural and political factors over the past few decades. These

include: successive waves of mass immigration, the weakening of the labor unions, globalization, the emergence of high-paying jobs in technology-related sectors, the Second Intifada, and waves of privatization and economic reforms (Haberfeld and Cohen, 2007). This high rate of inequality gives rise to considerable social gaps, including, but not limited to, the gender wage gap, a sizeable urban-rural wage gap and a substantial amount of wage inequality across localities. Wage variation at the local level is essential for our study due to data limitations where voter preferences are only available at the locality (municipal) level (see data section).

### *3.4. Background on Israel's Political System*

Israel has a multi-party parliamentary system. The Israeli legislature, the Knesset, is unicameral and is elected through party-list proportional representation. In 2009, a political party needed to gain at least 2% of the votes cast nationally to gain a seat. The Knesset has 120 members and is elected for a four-year term, although historically, it has regularly been dissolved before completing its term<sup>15</sup>. The Knesset has several responsibilities ranging from passing laws to the election of the President.<sup>16</sup> After an election, the Israeli President appoints a Prime Minister, further to consultation with the elected parties. The appointed Prime Minister is the one responsible for forming a majority coalition, and is usually (but not always) the leader of the party with the most seats. The Prime Minister, together with several cabinet members appointed by the Prime Minister and approved by the Knesset, leads the executive branch. In 2009, although Kadima won the most seats, Likud leader Benjamin Netanyahu was appointed to form a governing coalition. This was the first time an Israeli President appointed a leader of a party that did not win the most seats.

### *3.5. Categorization of Political Parties According to Platform*

There are several ways to classify political parties in Israel but for the purpose of this paper, parties will be ranked in accordance with the extent and nature of explicit references, in their respective platforms, to promoting the advancement of gender equality in the labor market.<sup>17</sup> The rationale for the categorization is as follows:

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<sup>15</sup> This may happen through the voting power of the Knesset itself or the Prime Minister.

<sup>16</sup> The Israeli president is the head of state, but the position is formal and carries no executive authority

<sup>17</sup> Ample information on political platforms is provided and made publicly accessible by the Israeli Democracy Institute, <https://en.idi.org.il/israeli-elections-and-parties/>

*Category 1: Parties with platforms that tackle human rights issues but also emphasize the importance of integrating women into the workforce at all levels, and propose specific policies such as affirmative action programs to meet these goals.*

*Category 2: Parties that recognize the importance of tackling human rights issues, such as human trafficking and domestic abuse, but are vague with respect to policy proposals in favor of gender-related labor market reforms.*

*Category 3: Parties that do not mention women in their party platform at all.*

While the above categorization is used for political parties that primarily represent the majority population, Jewish-Israelis, Arab parties are examined in a similar fashion. There are only three major Arab parties and thus, the percentage of votes allocated to each party will be used directly, (without being grouped), in regressions to represent voter preferences in Arab/mixed localities. For the remainder of this section, we group political parties into three categories and provide a brief analysis on the relationship between voter preferences and median wages.

**Category 1 (Reducing Inequality):** With respect to improving gender parity, mainstream left-wing Israeli parties such as Labour and Meretz have a solid history of advocating greater gender equality. Policy proposals range from affirmative action to greater enforcement of equal opportunity laws and family-friendly labor reforms. Kadima, a centrist party formed by Likud party leader Ariel Sharon in 2005,<sup>18</sup> is also included in this category. Kadima stands out as one of the few political parties in Israel that provides specific guidelines and strategies for promoting both Jewish and Arab women in the workplace. The Shas party, a religious party that represents Sephardi, (non-European), Jews, is part of this group due to its equally strong commitment to the advancement of Jewish women in society. Policies include reforms designed to increase female participation in the public sector, and in vocational training and academic institutions. In a sense, this party is an anomaly since it is the only right-wing party in Category 1, as its platform neither mentions the Arab minority in Israel nor the two-state solution. Lastly we include Hadash, an Arab-Jewish<sup>19</sup> radical left-wing political front, running on a joint list, and formed by Maki, the Israeli communist party in 1977, and other independent and non-partisan, activist groups. Its platform advocates free childcare, affirmative action and more rigorous enforcement of anti-

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<sup>18</sup>Many have argued that Ariel Sharon's separation from the Likud party is over disagreement concerning the Gaza disengagement plan.

<sup>19</sup> Our data provides strong evidence that in practice, the vast majority of the party's voters are Arabs.

discrimination laws. In addition to promoting the integration of women in the labor market, all parties in this category mention the importance of reducing inequality and fighting poverty. A larger share of Category 1 voters in a given locality is associated with higher median wages for both males and females, but also a widening gender-wage gap, which may be exacerbated in competitive and lucrative work environments (Figure 1). This is consistent with the accelerated growth of the gender-wage gap across quantiles that has been extensively documented in several Western countries, also known as the glass ceiling effect (see Related Literature section).

**Category 2 (Nationalism First, Women Second):** Political parties in this category can be characterized as right-wing, nationalist parties, whose platforms are full of highly charged, political rhetoric supporting the pursuit of nationalistic goals as a matter of priority. With respect to mainstream right-wing parties, such as Likud, platforms are filled with details on national security issues, such as the war on terror, while the two state solution and grievances of the Arab minority in Israel are not mentioned. Other right-wing parties, such as the Jewish Home, that openly reject the two-state solution, call for the expansion of settlements and the cancellation of the Oslo Peace Accords. At the same time, these parties call for a wider inclusion of women in all fields, but do not include specific policy proposals that target improving women's opportunities in the labor market. Most policies are formed to tackle human trafficking and domestic abuse, encourage education and provide tax deductions for childcare expenses<sup>20</sup>. Similarly, the secular Arab party, Balad, operates in a similar way: its platform is dedicated to the advancement of Arabs and calls for a one-state solution where Arabs and Jews are equal citizens, (a controversial argument, given that Israel would not necessarily be a majority Jewish state). Balad calls for the full equality of men and women, but does not include policies to tackle gender inequality in the workplace; instead, it outlines specific policy proposals to tackle sectarianism and clan prejudices within the Arab minority and proposes affirmative action programs for Arabs in competition with Jews in the labor market. At the locality level, a higher percentage of Category 2 voters is

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<sup>20</sup> While tax deductions on childcare expenses may be viewed as a policy that improves women's labor market outcomes, the policy may also endorse, or promote, larger families by reducing the income loss associated with increasing household expenses. By contrast, subsidized childcare or free childcare, (paid for by the employer), is much more likely to have an unambiguously positive effect on women's labor market outcomes; as argued in the main text, these policies are usually mentioned in the platforms of Category 1 parties.

associated with a slightly higher wage gap but is not strongly correlated with male or female median wages (Figure 2).

**Category 3 (Controversial/Community-Building):** Parties in this category do not mention women in their platforms and usually call for some degree of community-building and/or segregation between Arabs and Jews. National Union encourages the emigration of disloyal Arab citizens, proposes to revoke the citizenship of those who undermine the country, and promises to support loyal Arabs. Israel Beitenu, a right-wing party founded in 1999, is concerned with security threats and proposes a new citizenship law requiring a loyalty oath, and the annexation of parts of the West Bank in exchange for the Israeli Arab population. Yehadut Hatora, an alliance of two ultra-Orthodox religious parties, mainly represents Ashkenazi Jews, does not mention the Arab minority, and emphasizes conservative social values. The United Arab List (UAL), an Islamist party, calls for the improvement of the infrastructure and services provided in the Arab enclave, and the liberation of the Islamic Holy site from Israeli control. An increase in the percentage of Category 3 voters at the municipal level is associated with a decline in both median male and female earnings as well as a declining gender wage gap (Figure 3).

It is immediately apparent from Figures 1-3 that voter preferences at the locality level are linked to economic outcomes. Specifically, those who favor a domestic agenda of reducing ethnic/gender gaps, or curbing inequality through progressive tax structures, live in communities where the gender gap is considerable, while those residing in less developed areas have a much lower gap and are more concerned with improvements in local budgets, infrastructure building and/or job creation.

## **4. Data and Descriptive Statistics**

### *4.1. Datasets*

Our analysis combines two datasets drawn from different sources. The first dataset is the Israeli Household Income Survey (IHIS), which is administered by Israel's Central Bureau of Statistics. The IHIS has, since 1965, been conducted annually and the response rate is approximately 83%. Throughout the years 2004-2009, the sample size was between 14,147 and 15,115 households. Of these households, 40% are sampled as part of the Household Expenditure Survey, for the purposes of which all respondents are asked about both their incomes and their expenditure. The remaining 60% of households are sampled as part of the Labour Force Survey,

in which 25% of the persons surveyed, who meet the criteria for inclusion in the income survey population, are also asked about their income. The sample-population rate was 0.68%-0.76% of the household population. All households are extracted from a sample of dwellings. The extraction has two phases: the first involves an extraction of a sample of localities<sup>21</sup>, using the layer method and in the second, an extraction of dwellings is chosen in a random-systematic manner in each chosen locality. The municipal property-tax file is the main frame for the extraction of the sample of dwellings, complemented by the following samples of dwelling units: student dormitories, immigrant absorption centers, and sheltered-housing facilities for the elderly. Additionally, the sample is updated during each survey year by adding new dwellings chosen from a special frame composed of newly built dwellings. We restrict our dataset to the waves between 2004 and 2009 and the sample is limited to wage earners between the ages of 15 and 64 who reported positive monthly salaries<sup>22</sup>.

The variables in the analysis include conventional human capital controls and job characteristics: potential experience and its square, 7 education categories, 9 occupation dummies and 14 industry affiliation dummies. We also take account of other variables which are known to not only affect the wage determination process in Israel and other contexts, but may also play a role in driving the gender wage gap. For example, 16 district fixed effects are included to control for differences in individuals' wages across districts, (keeping other factors constant), as well as for the possibility that female wage-earners in Israel are concentrated in districts that have a premium or penalty. Likewise, 6 time fixed effects, a nativity dummy, a mixed locality dummy and 9 origin dummies for Jewish-Israelis (2 origin dummies for Arab-Israelis), are included. For more information on the definition and construction of all variables used, see Table A1.

The second dataset consists of official election results for the 18<sup>th</sup> Israeli Parliamentary elections in 2009. We chose the 2009 elections because we wanted to include as many political parties and platforms as possible and in 2009, an unprecedented number of 43 political parties were registered. However, of the 33 parties officially running, our analysis only includes the 26

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<sup>21</sup> Localities are municipalities/ towns and there are approximately 1200 localities in Israel. Of the municipal areas sampled in the Israeli income survey between 2004 and 2009, 80 have a locality code (and therefore have more than 20,000 inhabitants), and, of these, 60 are predominantly Jewish localities, 12 are predominantly Arab localities (clustered in the Arab enclave), and 8 are considered mixed localities.

<sup>22</sup> The results for our analyses are almost identical if the age range is changed to 18-64.

parties with publicly available platforms<sup>23</sup>. The official results are taken from the Knesset website and include voting records at the single polling station level. Voting records include the voting station code, location and address, as well as the number of eligible voters, actual voters, valid votes and their distribution among the various parties. The Israeli Social Sciences Data Center (ISDC) merged these records with geographic indices provided by the Central Bureau of Statistics to include the locality and statistical area (SA) of each station.

We use the ISDC dataset to determine the locality area to which each voting station belongs. The smallest geographic unit available in the IHIS data is the locality of residence, where a code is provided for each locality that has more than 20,000 inhabitants. Thus, in order to merge the IHIS data set with the voting records of the ISDC dataset, the percentage of votes for each political party must be computed at the locality level. This is done by; 1.) summing up the number of valid votes for each political party within each locality, 2.) summing up the number of valid votes for each locality, and 3.) dividing the total number of votes for each political party by the total number of valid votes within each locality.

Next, the following variables are computed by aggregating the percentage of votes for each political party within a category: the *percentage of votes for Category 1, Category 2, and Category 3 parties, (see Table A1 for names of parties), in Jewish/mixed localities. Similarly, in Arab/mixed localities, the percentage of votes for Hadash, Balad (Pan-Arab), and United Arab List (UAL) are computed.* It is worth noting that in a few Arab localities, a substantial share of Arab-Israelis voted for Mainstream Jewish parties, perhaps to increase the parties' chances of joining the winning coalition<sup>24</sup>. Thus, in Arab/mixed localities, a fourth category emerges: the *percentage of votes for Mainstream Jewish parties, (which include any Jewish party in Category 1, 2, or 3).* For the purpose of the study, we have merged this dataset on voting patterns with the individual-level dataset from the IHIS by using the identification code of the locality that is present in both datasets.

#### 4.2. Descriptive Statistics

Table 1 displays the means for selected variables by ethnicity and gender. For each group, the working age population primarily consists of individuals who are not working, self-employed individuals and wage-earners. Jewish males have a non-employment rate of 35%, the lowest of all ethnicity-gender groups, and the highest self-employment rate of 10%. The non-employment rate

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<sup>23</sup> The qualitative nature of our results does not change if we are to use the 2006 election results instead.

<sup>24</sup> Arab political parties have never been included in a governing coalition in Israel.

of for Jewish females is 38% but they have the highest portion of wage-earners, 57%. Arab-Israelis have large non-employment rates, especially women where only 16% of the working-age population earns a salary. Unexpectedly, this low employment to population ratio is similar to that in low-income Arab countries in the Middle East, indicating that living in a developed country does not guarantee Arab women access to labor market opportunities. Arab-Israeli men have a non-employment rate of 44%, which is extremely high, but has been attributed to early retirement as a result of physically strenuous low-wage occupations (Yashiv and Kasir, 2011; Miaari, 2013).

Despite Israel's advanced economic state, a substantial percentage of Arab citizens do not contribute to its economy, motivating calls for increased integration and egalitarianism. Moreover, more than three quarters of Arab wage-earners live in Arab towns or villages, with inadequate infrastructure and poor social services.<sup>25</sup> Summary statistics for age and educational attainment show that Arab wage-earners are, on average, five to six years younger than Jewish wage-earners, and are much more likely to be employed with only 10 or fewer years of schooling; notably, 38% (78%) of Arab male wage earners have 10 (12) years of schooling or less. Another finding worth noting is that Arab-Israeli females have the highest proportion of wage-earners with 16 or more, years of schooling. However, their low employment rate indicates that these workers are highly positively selected and do not adequately represent their population<sup>26</sup>. Thus, it is not surprising that Arab women earn higher mean-hourly wages<sup>27</sup> than their male counterparts. Given the large disparity, between males and females, in years of education received, one would expect the reversed gender-wage gap to be larger in magnitude for Arab-Israelis, an issue that is revisited later in the results section. By contrast, Jewish-Israeli women earn 20% less than their male counterparts despite their higher levels of educational attainment.

Two factors that may shed light on these issues are industry affiliation and occupational status. Figure 4 is a bar graph that depicts the percentage of wage-earners' working in different industries, with separate figures for each ethnicity-gender subgroup. Industries are ranked and graphically displayed, (from the bottom of the bar to the top), in ascending order, from those that

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<sup>25</sup> The remainder of the analysis in this paper only accounts for wage-earners during the period 2004-2009.

<sup>26</sup> This paper is only concerned with observed wages and does not address selection into the labor force.

<sup>27</sup> Hourly wages are computed by dividing the monthly salary by the number of hours worked per month, deflating to 2010 Israeli Shekels and converting to 2010 \$US.

have the highest wage premium, (Finance) to the lowest (Agriculture)<sup>28</sup>. It is clear that a greater proportion of women, of both ethnicities, work in the two industry groups with the highest wage penalties. Comparing ethnicities, it is apparent that a higher proportion of Jewish-Israelis, than Arab-Israelis, are employed in the top two industry groups. Arab women face the greatest disadvantage in terms of industry affiliation, with only 20% working in the top three industry groups. By contrast, the corresponding figure for Jewish-Israeli males is 60%, while the other two groups fall in between. Figure 5 is constructed in the same way as Figure 4, with the focus being on presenting occupational status rather than industry affiliation. The starkest feature of this graph concerns Arab men, of whom only 18% work in the top three categories of occupation, by status. Another notable feature of Figure 5 is that 60% of women in both ethnicity groups are employed in the top three occupation groups. Lastly, Arab-Israelis are shown to be less likely to obtain employment in the most privileged occupation group, academics/managers, and much more likely to work in the most disadvantaged group, unskilled workers<sup>29</sup>(Khattab and Miaari, 2013). We will use the above-mentioned attributes in the results section to quantify the role of gender differences in human capital and job characteristics in producing the gender wage gap.

## 5. Estimation Strategy

### 5.1. *Decomposing the wage gap at the Mean and Various Quantiles*

The descriptive statistics shown thus far imply that ethnic and gender differences in education, industry affiliation and occupation are significant. However, to what extent do differences in each of these covariates explain the gender disparity in wages? Moreover, when the data is disaggregated, do certain subgroups exhibit a higher unexplained effect? The seminal technique of Oaxaca-Blinder (1973) is used to decompose the observed gender wage gap into a portion that can be explained by characteristics and a portion that is unexplained. Since the decomposition results may vary depending on which group is considered the reference group, the reference coefficients used are from a pooled regression over both groups (see Neumark, 1988):

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<sup>28</sup> Industry groups were constructed by first calculating the industry wage premiums for all 14 single digit industries. This was done by regressing the logarithm of the wage on the four education groups listed above (and three lower ones), potential experience, its square and 14 industry dummies. The 14 industries were then ranked (based on their premiums) and grouped into 7 categories; military personnel are included in Public Administration/Finance.

<sup>29</sup>Arabs are especially rare in managerial positions, which have a higher wage premium than academic positions; about 1.6% of Arab-Israelis are managers while 5.9% of Jews are managers. Academic jobs are more penetrable as 7.3% of Arabs and 13.6% of Jews are employed as academics.

$$\underbrace{\overline{Y_t^M} - \overline{Y_t^F}}_{\text{Mean Gender Wage Gap}} = \underbrace{\widehat{\beta^N}(\overline{X_t^M} - \overline{X_t^F})}_{\text{Explained}} + \underbrace{(\widehat{\beta^M} - \widehat{\beta^N})\overline{X_t^M} + (\widehat{\beta^N} - \widehat{\beta^F})\overline{X_t^F}}_{\text{Unexplained}}$$

where  $t$  is an index for time,  $M$  and  $F$  are indices for males and females respectively;  $Y_t^g$  represent mean log hourly wages for group  $g = (M, F)$ .  $\widehat{\beta^g}$  represents the estimated coefficients of regressing  $Y_t^g$  on  $X_t^g$ ;  $\widehat{\beta^N}$  are Neumark's coefficients from a pooled regression over males and females;  $\overline{X_t^g}$  is the observed set of mean characteristics for group  $g = (M, F)$ , where controls include years of potential experience and its square, 7 education categories, 14 industry categories, 9 occupation categories, 16 district fixed effects, and 6 year fixed effects.

While this decomposition technique is well known in allowing researchers to quantify how much of the (mean) wage gap can be attributed to gender differences in covariates, one may also question whether the explained portion of the wage gap, and the percentage attributable to the explained portion, varies with each quantile. A recent technique devised by Chernozhukov, Fernández-Val and Melly (2013) is employed to decompose intergroup gaps, at various percentiles across the wage distribution, into an explained and unexplained effect. The explained portion is computed by gender differences in the distribution of observable characteristics using the rewards structure of males and the unexplained portion is computed by differences in the conditional distribution of wage functions using the distribution of female characteristics. Quantile regressions are used for conditional wage regressions and 100 bootstrap replications are used to compute standard errors. We use both decomposition techniques in the preliminary results to assess the relevance of socioeconomic covariates in explaining the gender wage gap<sup>30</sup>.

## 5.2. Estimating the impact of voter preferences

The empirical strategies above quantify the gender wage gap within and across ethnic groups in Israel at various points across the distribution and the decompositions capture the portion of the gap that can be explained by differences in individual attributes. However, they neither address why such a large portion of the gap is unexplained nor the substantial variation in the adjusted gender wage gap across localities in Israel. These trends are likely due to differences in preferences

<sup>30</sup> Note that in both techniques, the unexplained portion is not entirely attributable to discrimination since there may be other relevant predictors that are not used here.

and beliefs on a wide array of issues, proxied for (in the present study) by locality-level voting patterns.

We use three models to measure the impact of voting patterns on the gender wage gap. In so doing, we rely on the variation in gender wage differences across Israeli localities, as well as on the nature of the political system, which gives rise to a large number of political parties running on a broad spectrum of views regarding the issue of gender parity in Israel. The first model is a simple linear regression estimated using OLS:

$$Y_{ipt} = \beta_1 \text{Categ1}_p + \beta_2 \text{Categ2}_p + \beta_3 \text{Fem}_{ipt} + \beta_4 \text{Fem}_{ipt} * \text{Categ1}_p + \beta_5 \text{Fem}_{ipt} * \text{Categ2}_p + \delta X_{ipt} + \varepsilon_{ipt} \quad (1)$$

where  $Y_{ipt}$  is the logarithmic wage, deflated to 2010 Israeli Shekels for individual  $i$  residing in locality  $p$  in year  $t$ .  $\text{Categ1}_p$  and  $\text{Categ2}_p$  represent the share of individuals who voted for a political party in Category 1 and Category 2 respectively during the 2009 legislative elections in locality  $p$ . The share of voters who voted for Category 3 parties are the reference group. The variable  $\text{Fem}_{ipt}$  is a female dummy variable and  $X_{ipt}$  is a set of socio-economic and demographic characteristics that include years of potential experience and its square, 7 education categories, 14 industry dummies, 9 occupation categories, a binary nativity variable, 9 origin dummies, a binary mixed locality variable, 16 district and 6 year fixed effects.

Our primary variables of interest are  $\beta_3$ ,  $\beta_4$ , and  $\beta_5$  since they provide a range for the gender wage gap that varies by the share of voters in favor of each category of political parties. Given our extensive controls, we expect our estimates to provide a lower bound for the true effect of voter preferences concerning gender equality in the labor market. For example, consider the case where localities with particular voting patterns have a gender gap in both wages and educational attainment. In this case, controlling for educational attainment attenuates the estimated wage gap, although gender differences in human capital are likely a byproduct of social and cultural norms—as reflected in local voting trends—that lead to gender discrimination in many areas.

Our second model uses Quantile Regressions (QR) to estimate wages at the 50<sup>th</sup>, 10<sup>th</sup> and 90<sup>th</sup> percentile of the distribution using the same controls as in equation (1) in order to assess whether the effect of voter preferences on wages and the gender wage gap is uniform. In addition

to OLS and QR, we model our results using HLM (Raudenbush and Bryk, 2002) to analyze the gender wage gap by accounting for individual-level and locality-level variables using a structure where individuals nested in the same locality share a common variance. Since residents of the same locality are expected to face similar experiences and opportunities in the labor market due to local economic conditions, it is reasonable to assume that they have a common variance, which may differ from the variance of residents in another locality. Thus, the usual assumptions--embedded in the simple linear regression--of homoscedasticity and the independence of error terms across individuals do not hold.

This paper uses HLM to take into consideration the nested nature of the data. Our main hypotheses are: 1.) Individual wages vary by both gender, (and other individual characteristics), and voting behavior, (locality-level variables), and 2.) Voting behavior influences the gender wage gap. Three main regressions are combined to achieve the final multi-level model, the first of which is at the lower level of the hierarchy, the individual. For simplicity, we remove the time subscript and consider gender as the only individual-level predictor of wages in the first regression:

$$Y_{ip} = \beta_{0p} + \beta_{1p} Fem_{ip} + r_{ip} \quad (2)$$

where  $Y_{ip}$  is the logarithmic wage in 2010 \$US for individual  $i$  in locality  $p$ ;  $Fem_{ip}$  is a dummy variable equal to one if individual  $i$  in locality  $p$  is a female;  $\beta_{0p}$  is the logarithmic wage for males in locality  $p$ ;  $\beta_{1p}$  is the regression coefficient that measures the wage penalty associated with being female in locality  $p$ ;  $r_{ip}$  is the random error of individual  $i$  residing in locality  $p$ . Note that  $E(r_{ip}) = 0$  and  $Var(r_{ip}) = \sigma^2$ .

The remaining two regressions are measured at the locality level and allow for male wages and the gender wage gap to vary by locality:

$$\beta_{0p} = \mu_0 + \lambda_0 L_p + \zeta_{0p} \quad (3)$$

$$\beta_{1p} = \mu_1 + \lambda_1 L_p + \zeta_{1p} \quad (4)$$

where  $\beta_{0p}$  and  $\beta_{1p}$  are the intercept and slope in equation (2) in a given locality  $p$ ;  $L_p$  represents two locality-level variables, the percentage of voters who are Category 1 voters, and those who are Category 2 voters in locality  $p$ ;  $\mu_0$  represents the overall mean of the logarithmic wage for males who live in localities comprised of only Category 3 voters and  $\mu_1$  represents the mean gender wage penalty (in logarithmic points) for those living in (primarily) Category 3 localities;  $\lambda_0$

represents the effect of voting behavior, as measured by the percentage of Category 1 and Category 2 voters, on male wages at the locality level and  $\zeta_{op}$  is the random-intercept effect; similarly,  $\lambda_1$  is the effect of voting behavior on the gender wage penalty at the locality level and  $\zeta_{1p}$  is the random-slope effect. Substituting the locality-level regressions (equations 3 and 4) into the individual-level regression (2) and including time subscripts and individual covariates provides us with the final HLM or mixed level model.

$$Y_{ipt} = \mu_0 + \mu_1 Fem_{ipt} + \mu_2 X_{ipt} + \lambda_0 L_p + \lambda_1 L_p * Fem_{ipt} + \zeta_{1p} * Fem_{ipt} + \zeta_{op} + r_{ipt} \quad (5)$$

Note that the HLM regression (equation 5) strongly resembles the simple single-level regression (equation 1) except for the composite error term that consists of  $\zeta_{1p} * Fem_{ipt} + \zeta_{op} + r_{ipt}$ . In other words, the simple regression assumes that all random effects are zero, which is rejected using a chi-squared test (see results section). Unlike the simple regression, HLM allows for male wages and the gender wage gap to vary by locality-level variables by relaxing the independence of errors and homoskedasticity assumptions. Specifically, error terms across individuals are not independent, but are related for individuals within each locality. Additionally, error terms with heterogeneous variances ( $\zeta_{op}, \zeta_{1p}$ ) are introduced so that the variances can depend on locality-level voting behavior.

It is worth noting that the parameters of interest in equation (5) can be consistently estimated using OLS since the regressors and error terms are assumed to be uncorrelated. However, the HLM approach employs more efficient estimators by exploiting the assumptions of the variances and covariances of the error terms across the two levels (Cameron and Trivedi, 2005, p. 847). In the present study, the model is fit using maximum likelihood estimation to accommodate the unbalanced design of the study, i.e. the number of residents is unequal across localities (Raudenbush and Bryk, 2002).

### 5.3. Selectivity-Corrected Wage Gap

Similarities across individuals in the same locality can yield inefficient estimates if the nested nature of the data is not modeled appropriately. Yet, HLM does not address the possibility that individuals self-select into their locality of residence, potentially leading to an omitted variable bias problem. For example, if we suppose the sorting process is largely based on education such

that highly educated women choose to live in localities that are considered ‘liberal’, (those with a relatively large percentage of Category 1 voters), then we should expect the gender wage gap to be lower in liberal localities despite the socio-political views on gender equality held by the majority. Specifically, the key econometric issue is that for each wage-earner, the econometrician observes only one wage, which an individual earns in her locality of residence. The wage earned if she were to reside in a different locality, i.e. a counterfactual wage, is not observed.

To address selectivity bias, let

$$Y_{ilt}^* = \vartheta_l z_{ilt} + \eta_{ilt} \quad (6)$$

where  $Y_{ilt}^*$  is the utility individual  $i$  attaches to living in locality type  $l$  in year  $t$ , and  $l$  is a categorical variable consisting of four locality types. For Jewish localities, the first locality type consists of localities where the percentage of Category 1 voters exceeds one standard deviation above the mean percentage of Category 1 voters across localities. The second and third locality types are constructed in the corresponding manner for Category 2 and Category 3 voters. The fourth locality type consists of localities whose voter distribution across categories does not fit the first three locality types; in other words, residents of these localities do not have a strong preference towards any category of political parties, relative to the mean. The same methodology applies to Arab localities where locality types are defined by the percentage of votes that exceeded one standard deviation above the mean for the following: 1.) Hadash, 2.) Balad, 3.) United Arab List, and 4.) Mainstream Jewish Parties. There are only four localities, one Jewish and three Arab, that simultaneously fit two locality\_types. In these cases, the locality type chosen was based on which of the two dominant categories of political parties, in a particular locality, had a higher percentage of votes relative to the mean, or a higher number of standard deviations above the mean, calculated by taking the percentage of votes for a particular category divided by the corresponding mean across localities.

In equation (6),  $z_{ilt}$  represents the characteristics that influence individual  $i$ 's choice of locality type for those residing in locality type  $l$  during year  $t$ . The econometrician observes the wage for those residing in locality type  $l$  only when locality type  $l$  provides individual  $i$  with a higher utility than any other locality type:

$$Y_{ilt}^* > \max_{l' \neq l} (Y_{il't}^*) \quad (7)$$

McFadden(1973) shows that this model can be estimated using a multinomial logit if the error terms ( $\eta_{it}$ ) are iid and Gumbel distributed. We follow the method of Bourguignon, Fourier and Gurgand (2007) to correct for selectivity bias in the outcome equation (equation 1), where self-selection into a locality type is based on equation 6. This procedure is an extension of Heckman's (1979) selection model but applies to polytomous cases where the dependent variable in the selection equation has more than one category. Since the sample size for the selection equation is not limited to wage earners but to the general population, ages 15-64, individual characteristics in the selection equation (results are available upon request) include: age and its square, 5 marital status dummies, 7 education dummies, number of children that are 17 or under, origin dummies (9 for Jewish-Israelis and 2 for Arab-Israelis, as shown in Tables 5 and Table 6), interaction terms between origin dummies and number of children, and interaction terms between being married and origin dummies. As in Heckman's selection model, in order for the model to be identified, the exclusion restriction must be met so that some variables in the selection equation are excluded from the wage equation. In other words, we must identify observable characteristics that influence an individual's locality type without directly affecting the individual's wage. Given the high level of residential segregation in Israel along ethnic/national origin (Okun, 2004; Mizrachi and Herzog, 2012), especially among families, we believe that the interaction terms between origin dummies and family variables meet this requirement.

## 6. Results

### 6.1. Preliminary Results

Columns (1) and (2) of Table 2 display the Oaxaca-Blinder decomposition of the gender wage gap among Jewish-Israelis and Arab-Israelis respectively. The salient feature of the gender wage gap among Jewish-Israelis is that only 0.04 of 0.22 log points can be explained by differences in individual attributes. Thus, over 80% of the gap is unexplained, which is unusually high, even when compared to the US where the corresponding figures are 38% in 2010 and 48% in 1980 (Blau and Kahn, 2016). Our results hold even when the sample is limited to earners who work at least 30 hours a week<sup>31</sup>. The gender wage gap among Jewish-Israelis is higher for skilled

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<sup>31</sup> The ethnic wage gap between Jewish and Arab males was also unaffected. The only decompositions that were slightly altered were the gender wage gap for Arabs and the cross ethnic-gender wage gap between Jewish males and Arab females. In both decompositions, the changes were mainly driven by Arab females, about a third of whom worked less than 30 hours a week. Unexpectedly, Arab women who worked less than 30 hours a week on average

subgroups, but the percentage attributed to the explained portion increases steadily, rising to over 30% for college graduates, (Panel A of Table A2; Figure A1)<sup>32</sup>. It is possible that linked employer-employee data is required to examine the gender wage gap more closely in Israel, especially in view of Navon and Tojerow (2013), who show that in 1995, a substantial portion of the gender pay gap in Israel's private manufacturing sector was attributable to the lower incidence of female employment in profitable firms.

Unlike Jewish women, who earn less than Jewish men, Arab women earn more than Arab men, by approximately 0.06 log points. However, given Arab women's competitive advantage in education, industry and advanced occupations, female earnings should surpass Arab male earnings by 0.27 log points (Table 2, col 2). Arab women have a strong lead, over Arab men, in terms of acquiring higher levels of education and accessing better-paid occupations in (more) productive industries, although these advantages are less pronounced for wage-earners at the low and high ends of the education distribution, (Panel B of Table A2). Furthermore, in contrast to the case of Jewish-Israelis, the unexplained part of the Arab gender wage gap grows rapidly as the quantiles increase (Figure A2).

Columns (3) and (4) of Table 2 display the contribution of each covariate to the ethnic wage gap for males and to the cross ethnic-gender wage gap. The ethnic wage gap is 0.40 log points, over 85% of which can be attributed to differences in observable characteristics. Specifically, differences in occupational status and educational attainment explain a substantial portion of the gap. However, a more detailed analysis, (Panel A of Table A3), reveals that among high school dropouts, differences in potential experience explains more than half of the ethnic wage gap<sup>33</sup>, whereas for college graduates, the most influential factor is the lack of access to high-wage industries. Quantile decomposition analysis also shows that the effect of observable characteristics falls sharply across quantiles, reflecting the increased role of the unexplained effect for high-skilled groups (Figure A3). Meanwhile, the decomposition of the cross ethnic-gender

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had higher hourly wages. That said, limiting our sample to those who worked at least 30 hours increased the Arab gender wage gap and the cross ethnic-gender wage gap but did not affect the relative size of the explained portion.

<sup>32</sup> Differences in industry affiliation (and to a lesser extent experience) play a key role in accounting for the explained portion of the gender pay gap for all groups, except the least educated, where differences in occupational structure have a considerable effect.

<sup>33</sup>This is consistent with the notion that Arab males who earn low wages retire early for health reasons, implying that high school dropouts largely consist of older Jews and relatively young Arabs.

wage gap between Jewish-Israeli males and Arab-Israeli females in col 4 of Table 2 is 0.35 log points, and the key factors involved here are differences in industry affiliation and years of potential experience, except for the least educated, where differences in occupations take the lead role, (Panel B of Table A3). Moreover, whereas only 40-50% of the pay gap between Jewish-Israeli men and Arab-Israeli women is accounted for, 70-80% of the male ethnic wage gap can be explained, (Figures A3 and A4). It is worthy of note that the ethnic and cross-ethnic wage gaps, and the unexplained effect associated with each gap, all increase when the Arab enclave is excluded, (col 2 of Table A3, Panels A and B). This finding is consistent with previous arguments that Arabs residing in mixed localities are subjected to more labor market discrimination than those in the enclave (Lewin-Epstein and Semyonov, 1994).

### *6.2. Main Results: Voting Behavior and the Gender-wage Gap*

The preliminary results show that gender wage gaps, within and across ethnicities, are persistent and are largely unexplained, implying that barriers to upward mobility are subtler for women. This paper investigates whether voting behavior can contribute to our understanding of these persistent gaps in the Israeli context.<sup>34</sup> Table 3 shows the effect of voting patterns on log hourly wages in 2010 \$US for Jewish-Israelis residing in Jewish or mixed localities. Voting patterns are also interacted with a female dummy to reveal the level of gender disparity associated with each category of political parties. Differences across average voting patterns at the locality level, as measured by the extent to which residents favor Category 1, 2, or 3 political parties, may be associated with wages and/or the gender wage gap due to locality characteristics, (e.g. economic activity and culture), that encourage particular social norms and behaviors. That said, we begin our analysis with the results in Panel A of Table 3, which do not include controls.

Col(1) estimates model parameters using OLS and standard errors are clustered at the locality level to account for serial correlation in the error terms for individuals residing in the same locality. Living in a locality with a higher percentage of Category 1 voters increases mean wages and the effect is economically and statistically significant. Moreover, such localities are not only more associated with high-earning individuals, but also produce a gender wage gap. Given the

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<sup>34</sup> Note that the sample sizes drop from Tables 1 and 2 to the remaining tables in the main section. This is because localities with fewer than 20,000 inhabitants are excluded from the analysis since the IHIS data does not specify a locality code for these localities, which means we cannot merge them with our data on voting patterns. If we remove these localities and repeat the exercises in Tables 1 and 2, our results were (slightly) altered only for Arab females.

nested nature of the data, an HLM model is estimated in col (2) to account for the possibility that the intercept and female coefficient vary across localities. Indeed, the results show a significant gender wage gap in all localities despite voting behavior, although women in localities with a higher percentage of Category 1 voters continue to suffer the largest penalty. The chi-squared test rejects the null hypothesis that random effects are zero and favors HLM as a better fit for the data relative to OLS. Furthermore, the share of votes allocated to Category 2 parties is now a significant predictor of wages.

To assess these effects further, quantile regressions (QR), which have the benefit of not being affected by outliers or extreme data, are estimated at the 10<sup>th</sup>, 50<sup>th</sup> and 90<sup>th</sup> percentile. A high share of Category 1 voters in a given locality is associated with a sizeable premium that increases with quantile. Furthermore, in localities where almost everyone is a Category 1 voter, the gender wage gap starts out as negligible in the 10<sup>th</sup> percentile, grows to 0.16 log points at the median and rapidly rises to 0.44 in the 90<sup>th</sup> percentile. Despite these gender gaps, women in these localities earn considerably more than their counterparts who live in localities where almost everyone is a Category 2 or Category 3 voter. This is consistent with the previous evidence (Goldin, 2014; see literature review) on wage penalties for women at the high end of the wage distribution and is reflective of competitive pressures in local labor markets. At the 50<sup>th</sup> percentile of the wage distribution, the findings are in many ways qualitatively consistent with the locality-level median wage regressions in Figures 1-3. First, residents of localities with a high percentage of Category 1 or Category 2 voters exhibit a significant gender pay gap, but unlike the case of women residing in predominantly Category 1 localities, those in localities with a high share of Category 2 voters do not enjoy a premium. Additionally, residents of localities with a high percentage of Category 3 voters earn the lowest wages but, with the exception of wages at the 10<sup>th</sup> percentile, there is barely a gender wage gap, which may reflect the lack of economic development required to produce social gaps at higher points of the wage distribution. These differences suggest that the mechanisms by which the gender pay gap evolves differ substantially among localities.

These trends may not imply one's voting preference directly affects one's wage but that voting patterns at the locality level are associated with locality-level characteristics—including income, own and parental educational attainment, racial and ethnic characteristics, budget allocation to municipality, level of urbanization and local facilities—which in turn are likely to

influence labor market outcomes. Furthermore, cultural or social norms that may vary across localities, include those relating to family size, living arrangements, and social obligations to the community, can influence how much time and effort women dedicate to work. To further isolate the effect of locality-level voting preferences on gender differences in wages, we include a host of controls, including years of potential experience and its square, 7 education categories, 14 industry dummies, 9 occupation categories, a binary nativity variable, 9 origin dummies, 16 district controls, 6 year fixed effects and a mixed locality dummy.

Panel B of Table 3 shows that after including individual level socio-economic and demographic controls, the effect of an increase in voter share for Category 1 in a given locality, on individual wages, diminishes for all model specifications relative to the results in Panel A, while the corresponding effect for Category 2 rises for all model specifications (except in the HLM specification) and becomes statistically significant. This implies that a higher share of Category 1 voters in a given locality is associated with individual and district-level attributes that are positively associated with earnings (more educated workers and urbanized districts), whereas the opposite is true for a locality with a high share of Category 2 voters (less human capital and rural localities with fewer facilities and low budget allocation). Note that now, the HLM and simple linear regression, (estimated by OLS), results are quite similar, which suggests that the inclusion of controls plays a crucial role in mitigating the strict assumption that localities within each category have the same intercept and female coefficient. Individuals who reside in localities with a large share of Category 3 voters lag behind in terms of wages earned, relative to those in other localities. At the 90<sup>th</sup> percentile, however, there is a divergence between the earnings accumulated by residents of localities with a high share of Category 1 voters relative to Category 2 voters.

There is also a uniform gender wage gap of approximately 0.15 log points at the 90<sup>th</sup> percentile, suggestive of a glass ceiling that is equally prominent in all localities. In the remaining specifications, localities with a high share of Category 1 and Category 3 voters do not exhibit a gender wage gap, except in the HLM specification and the estimate is marginally significant. Thus, socio-economic factors and district controls were sufficient in explaining the gender pay differences noted in Panel A for localities that have a relatively high share of Category 1 or Category 3 voters. By contrast, female residents in localities with a relatively high share of Category 2 voters experience a considerable penalty. These results imply that there are

mechanisms influencing the wage gap in some communities that cannot be captured by conventional variables.

In some ways, the trends for the Arab minority strongly resemble those for the Jewish majority. As shown in Table 4, the effect of an increase in the share of votes cast for Balad, a nationalist Category 2 political party, increases individual earnings at the mean, median and bottom decile of the wage distribution. However, the gender gap is considerable when the data is limited to the Arab enclave (col 5). In fact, women in these localities experienced such a large penalty that the gains realized by living in a locality with a high share of Arab nationalists are reversed. The share of voters per locality in favor of the United Arab List, (UAL), Islamist party, a Category 3 political party, and/or Hadash (the reference group and a Category 1 political party), are associated with the lowest gender wage gaps. Meanwhile, individuals in localities with a high share of loyalist voters in favor of Mainstream Jewish parties were more likely to earn higher wages at all points of the distribution, but at the 50<sup>th</sup> percentile, women experienced a significant wage penalty so that only a portion of the gains were realized<sup>35</sup>. Finally, as with Jewish-Israelis, there is a uniform gender wage gap across all locality types at the 90<sup>th</sup> percentile of the wage distribution. As discussed earlier, in the presence of greater economic opportunities and increased competition, women may experience disproportionately larger wage penalties, than their male counterparts, in less competitive environments, possibly due to the differences in the level of commitment required in the labor market.

For completeness, the relationship between voting patterns and the gender wage gap is estimated at the locality level in Figures 6-8. The gender wage gap at the locality level is computed using (the negative of) regression coefficients of the HLM specification with controls (Table 3, Panel B, col 2 for Jewish-Israelis and Table 4, col 3 for Arab-Israelis). The gap is then regressed on voting behavior at the locality level, where OLS coefficients are estimated using analytical weights and statistical significance is based on robust standard errors. Figures 6-8 reveal that 1.) an increase in the percentage of votes allocated to Category 1 (or Hadash) parties has no effect on the adjusted gender wage gap at the locality level, 2.) there is evidence that localities with a higher share of nationalist voters (i.e. Category 2, Balad) produce a larger gender wage gap, and 3.) there

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<sup>35</sup> It is possible that localities with a high percentage of loyalists are likely to receive better infrastructure through the allocation of local budgets. Loyalists here refer to Arabs who vote for Mainstream Jewish parties.

is weak evidence that, despite the lack of concern about the gender wage gap shown by Category 3 parties, localities with a higher share of votes for community/religious parties, (i.e. Category 3, UAL), have a lower gender wage gap, which is also consistent with Figure 3.

### *6.3. Robustness Check (Selectivity-Corrected Wage Gap Decomposition)*

To ensure our results are not driven by selection bias, we estimate the OLS and QR specifications using a correction procedure proposed by Bourguignon, Fournier and Gurgand (2007), where the first step is a multinomial logit regression (unreported). Tables 5 and 6 display the results of the second step regression for Jewish and Arab-Israelis, using the same set of controls as in Tables 3 and 4 respectively. Note that the results in Table 5, using the selection correction, are similar to those in Table 3, except that the point estimate for the female coefficient is statistically significant across more specifications, which allows us to infer that selection effects do not alter the main results for Jewish-Israelis. Similarly, for Arab-Israelis, the results in Tables 4 and 6 are comparable apart from the QR regression at the 50<sup>th</sup> percentile (Table 6, column 3) where a high share of Balad or UAL voters has a statistically and economically significant effect on increasing the gender wage gap in those localities. It is worth noting that the point estimates in Tables 4 (column 4) and Table 6 (column 3) are almost identical but in the absence of selection correction, the estimates were not significantly different from zero.

## **7. Conclusion**

Our preliminary results show that 1.) the gender-wage gap among Jewish-Israelis is largely unexplained, 2.) the male ethnic-wage gap can be largely ascribed to differences in individual attributes, and 3.) the cross ethnic-gender-wage gap can only be partially attributed to differences in personal qualifications. There is evidence of a glass ceiling for Jewish and Arab women who experience a persistent and growing wage gap, that is particularly high in the upper half of the distribution, and which is mostly unaccounted for, potentially requiring richer data permit further investigation. For Arab men, the glass door effect is more prominent since the majority of the ethnic-wage gap can be linked to occupational segregation. The lack of integration of the Arab enclave into Israel's economy may exacerbate the glass door effect, due to the enclave's meager infrastructure, substandard educational services, and limited job opportunities. The analysis sheds light on the areas that should be targeted by future policymakers to ensure that women and Arabs are more fully integrated in the Israeli labor market.

Our main results examine the effect of voter preferences, at the locality level, on wages and the gender wage gap for Jewish and Arab Israelis. Jewish and Arab political parties were categorized based on the language used in party platforms: Category 1 parties prioritize gender equity in many spheres, Category 2 parties focus on a nationalistic agenda and references to women's rights are largely limited to human rights, whereas Category 3 parties do not mention women in their platforms. A high share of Category 1 voters in a given locality is associated with both a sizeable premium and a gender-wage gap that increases with quantile. Furthermore, the premium is reduced and the gap is eliminated when controls are included. Localities with a high percentage of Category 3 voters earn the lowest wages, but with the exception of the 10<sup>th</sup> percentile, there is barely a gender-wage gap. This may reflect a lack of economic development in these localities, which would explain why they have not yet experienced the emergence of social gaps at higher points of the wage distribution. In these Category 3 voting municipalities the inclusion of controls eliminates the wage gap at the bottom decile.

By contrast, Jewish and Arab females living in any type of municipality, with a high share of Category 2 voters, experience a considerable penalty that is persistent in all specifications and quantiles of the distribution. This points to the existence of social/cultural norms that are not conducive to promoting greater gender equality in the workplace. One way of interpreting these results is that nationalism, both Arab and Jewish, runs counter to female economic empowerment, an issue that should be part of our political and public discourse. Future research should examine more deeply why it is that those localities, in which nationalism is a prominent part of the local culture, are more likely to produce a gender wage gap, and possibly other inequities. Of course, we find that a glass ceiling effect remains in all localities and this most probably evolves from the particular competitive environments in high wage employment and the time constraints faced by women generally. It is thus likely that government policies that are family-friendly, such as subsidized childcare, or employer-focused policies, such as more flexible work schedules, would benefit women in all parts of Israel.

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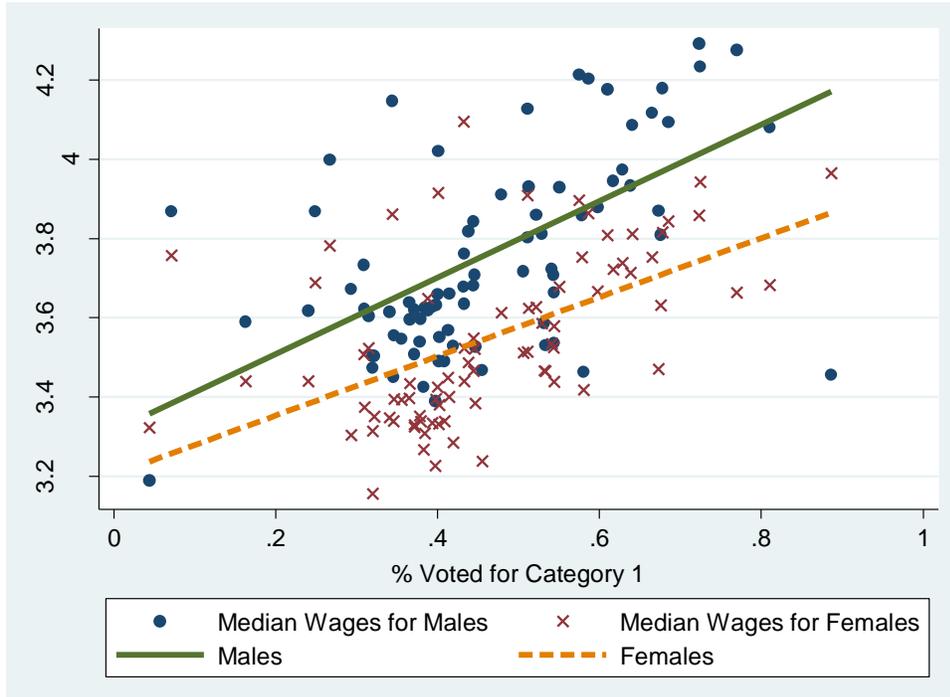
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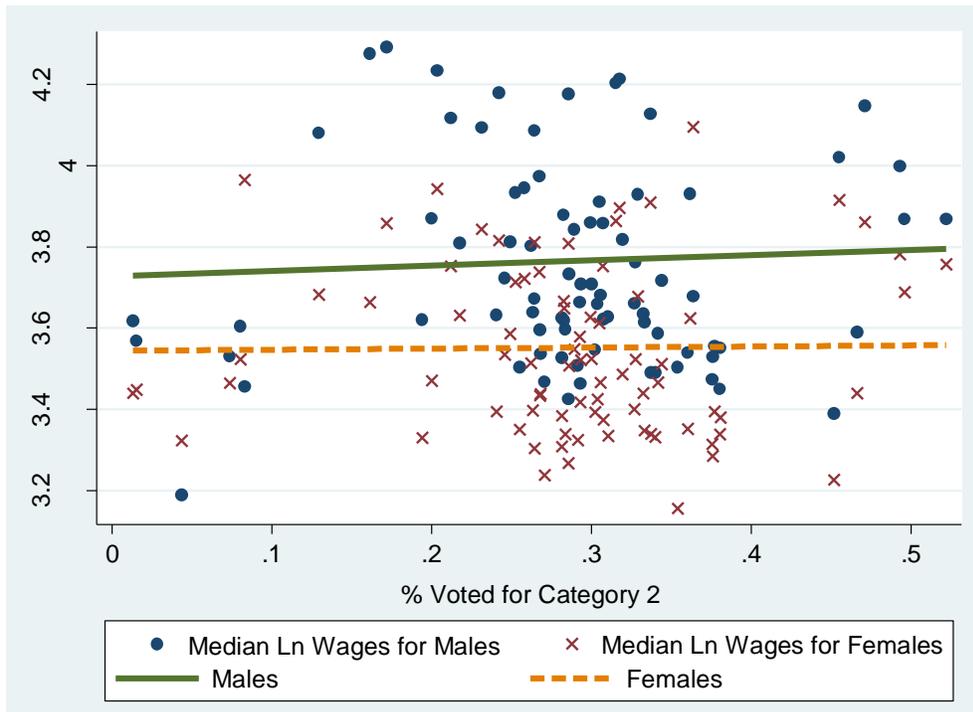
## Figures and Tables

**FIGURE 1: VOTING BEHAVIOR AND MEDIAN WAGES FOR JEWISH-ISRAELIS (CATEGORY 1)**



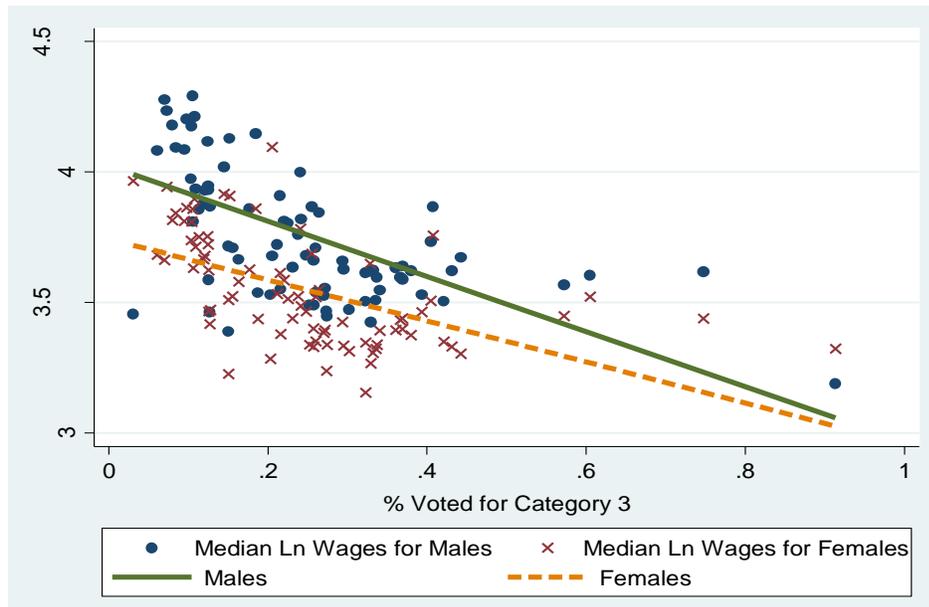
Source: Israeli Household Income Surveys (2004-2009) and Israeli Social Sciences Data Center (ISDC) for 2009 Knesset elections. Note: The two lines in Figure 1 represent linear prediction plots after regressing median wages, for males and females, on the share of voters who voted for Category 1; the unit of analysis is the locality. See text for which parties are in each category.

**FIGURE 2: VOTING BEHAVIOR/ AND MEDIAN WAGES FOR JEWISH-ISRAELIS (CATEGORY 2)**



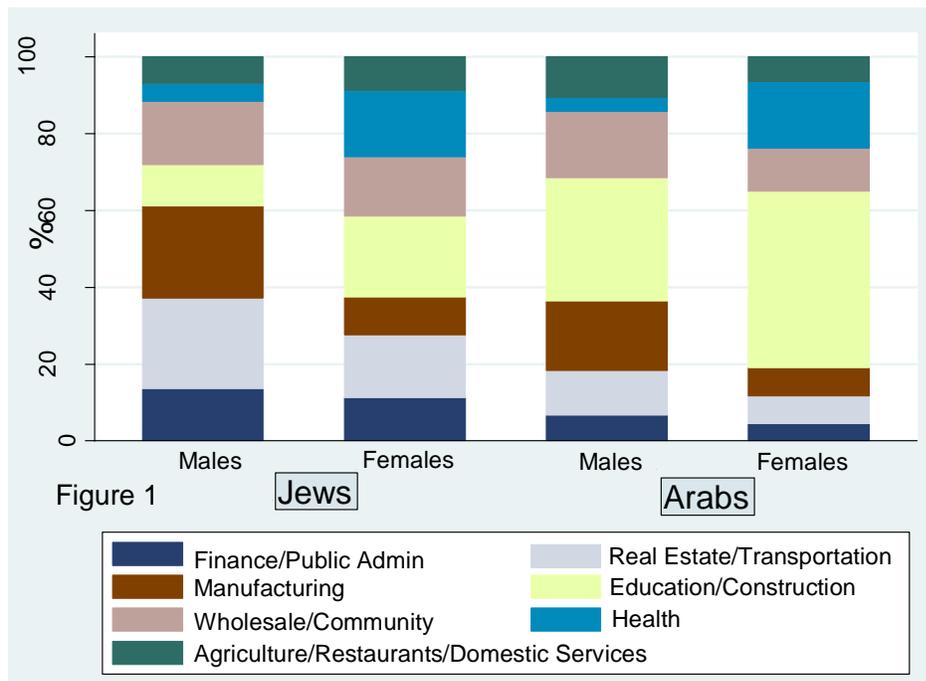
Notes: Figure 1 notes for source and estimation apply with the exception that the political parties here are in Category 2.

**FIGURE 3: VOTING BEHAVIOR AND MEDIAN WAGES FOR JEWISH-ISRAELIS (CATEGORY 3)**



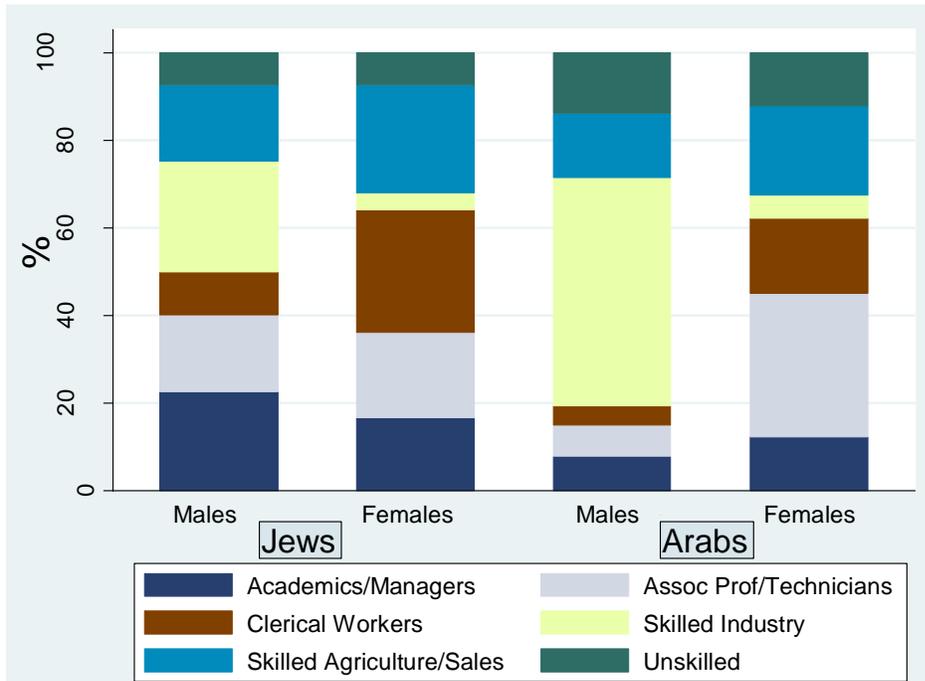
Notes: Figure 1 notes for estimation apply with the exception that the political parties here are in Category 3.

**FIGURE 4: INDUSTRY AFFILIATION BY ETHNICITY AND GENDER**



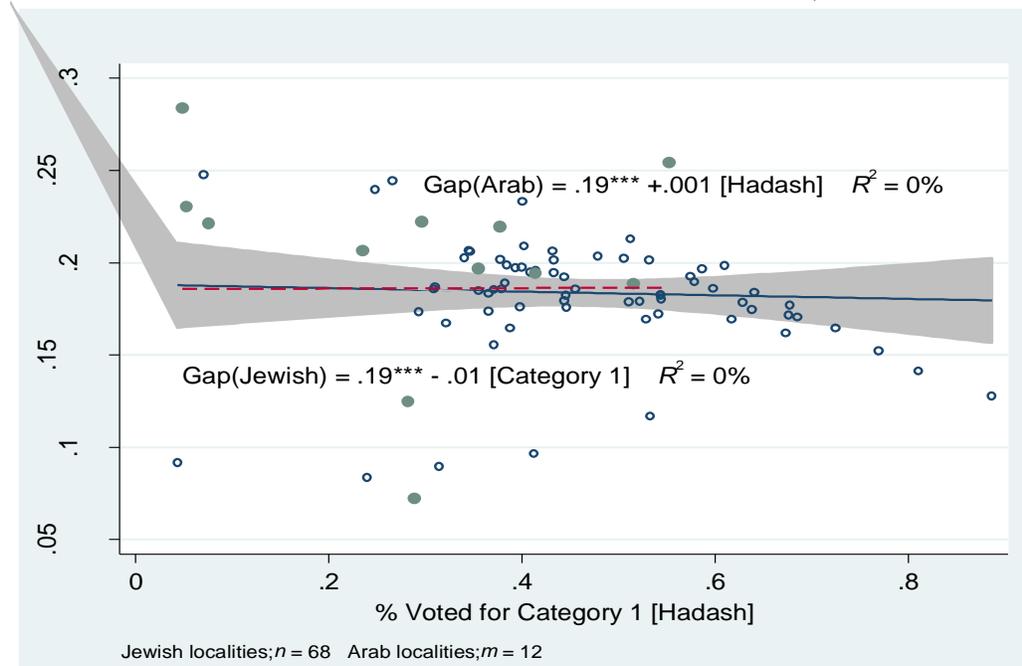
Source: Israeli Income Surveys (2004-2009). Figure 4 is a bar graph that depicts the percentage of wage-earners affiliated with each industry group, separately for each ethnicity-gender subgroup. Industry groups are ranked and graphically displayed (from the bottom of the bar to the top) in ascending order from those that have the highest (Finance/Public Admin) to the lowest (Agriculture/Restaurants/Domestic) premiums. Industry groups were constructed by first calculating the industry wage premiums for all 14 single digit industries. This was done by regressing the logarithm of the hourly wage on 7 education categories, potential experience and its square, and 14 industry dummies. The 14 industries were then ranked (based on their premiums) and grouped into 7 categories; military personnel are included in Public Administration/Finance.

**FIGURE 5: OCCUPATIONAL STATUS BY ETHNICITY AND GENDER**



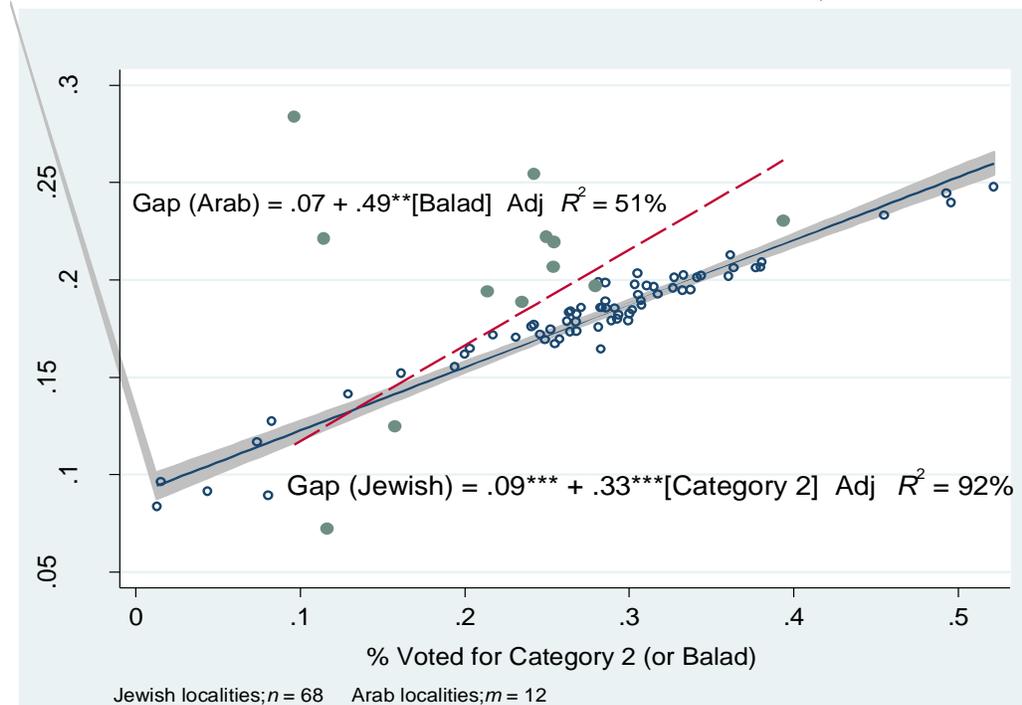
Source: Israeli Household Income Surveys (2004-2009). Figure 5 is a bar graph that depicts the percentage of wage-earners affiliated with each occupation group, separately for each ethnicity-gender subgroup. Occupation groups are ranked and graphically displayed (from the bottom of the bar to the top) in ascending order from those that have the highest (Academics/Managers) to the lowest (Unskilled) premiums. Industry groups were constructed by first calculating occupation premiums for all 9 single digit occupations. This was done by regressing the logarithm of the hourly wage on 7 education categories, potential experience and its square, and 9 occupation dummies. The 9 occupation dummies were then ranked (based on their premiums) and grouped into six categories; military personnel are included with Associate Professionals/Technicians.

**FIGURE 6: THE GENDER WAGE GAP AND VOTING BEHAVIOR (CATEGORY 1/HADASH)**



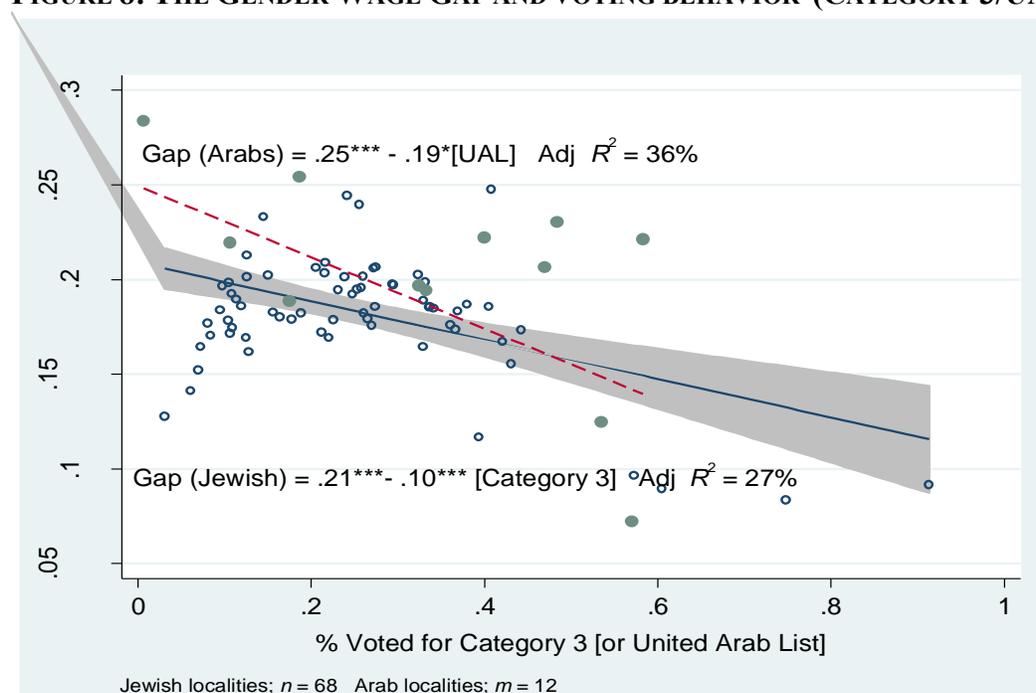
Notes: Gender Wage Gap at locality level is computed based on HLM regressions using controls (Table 3, Panel B, col 2 for Jewish-Israelis and Table 4, col 3 for Arab-Israelis). The gap is then regressed on the percentage who voted for Category 1 parties (or Hadash in Arab localities) in Jewish localities, using OLS where coefficients are estimated using analytical weights and statistical significance is based on robust standard errors. 95% Confidence Intervals are shown in grey for the Jewish regression only and of the 68 Jewish localities, 8 are mixed localities, where at least 10% are Arab-Israelis.

**FIGURE 7: THE GENDER WAGE GAP AND VOTING BEHAVIOR (CATEGORY 2/BALAD)**



Notes: Figure 6 notes for estimation apply with the exception that the political parties here are in Category 2 or Balad.

**FIGURE 8: THE GENDER WAGE GAP AND VOTING BEHAVIOR (CATEGORY 3/UAL)**



Notes: Figure 6 notes for estimation apply with the exception that the political parties here are in Category 3 or UAL.

**TABLE 1: SUMMARY STATISTICS BY ETHNICITY AND GENDER IN ISRAEL (2004-2009)**

	Jewish-Israelis		Arab-Israelis	
	Males	Females	Males	Females
Not Working	0.35	0.38	0.44	0.83
Self-Employed	0.10	0.05	0.09	0.01
Salaried Workers	0.55	0.57	0.47	0.16
Arab Area or Enclave	-----	-----	0.79	0.76
Age	40	39	34	34
Years of Schooling				
<11	0.10	0.07	0.38	0.15
11-12	0.34	0.32	0.40	0.30
13-15	0.27	0.30	0.10	0.23
16+	0.29	0.31	0.12	0.32
Hourly Wage (\$US 2010)	\$15.77	\$12.31	\$9.57	\$10.26
<b>Observations</b>	38,949	44,041	7,604	2,567

Source: Israeli Household Income Surveys (2004-2009).

Notes: Summary Statistics are reported above separately for Jewish-Israeli males and females. The working age population (18-64 years) is categorized into three labor force categories (not working, self-employed and workers who earn monthly salaries) and four educational attainment categories. Hourly wages are in \$2010 US Dollars.

**TABLE 2: DECOMPOSITION OF THE ETHNIC AND GENDER WAGE GAP IN ISRAEL (2004-2009)**

Oaxaca-Blinder Decompositions	Gender Wage Gap (Jews)	Gender Wage Gap (Arab)	Ethnic Wage Gap (Males)	Cross Ethnic- Gender Gap
	(1)	(2)	(3)	(4)
Ln Wage (Group 1)*	3.81*** (0.00)	3.41*** (0.01)	3.81*** (0.00)	3.81*** (0.00)
Ln Wage (Group 2)	3.60*** (0.00)	3.47*** (0.01)	3.41*** (0.01)	3.47*** (0.01)
Wage Gap (in Log points)	0.22*** (0.00)	-0.06*** (0.01)	0.40*** (0.01)	0.35*** (0.01)
<b>Explained</b>	0.04*** (0.00)	-0.27*** (0.01)	0.35*** (0.01)	0.19*** (0.01)
<i>Experience</i>	0.02***	0.03***	0.04***	0.08***
<i>Education</i>	-0.01***	-0.11***	0.11***	-0.00
<i>Industry</i>	0.04***	-0.10***	0.03***	0.08***
<i>Occupation</i>	-0.01***	-0.09***	0.14***	-0.01
<i>District FE</i>	< 0.001	< 0.001	0.03***	0.03***
<b>Unexplained</b>	0.18*** (0.00)	0.21*** (0.01)	0.05*** (0.01)	0.16*** (0.01)
<b>Observations</b>	82,990	10,171	46,553	41,516

Source: Israeli Household Income Surveys (2004-2009).

Notes: Group 1 is Jewish males in all specifications except in column (2) where Group 1 is Arab males. Group 2 in columns (1) - (4) are respectively Jewish females, Arab females, Arab males, and Arab females. The dependent variable is the logarithm of the hourly wage in 2010 US Dollars. Differences between the log hourly wage of Group 1 and Group 2 are decomposed into an explained and unexplained portion using the Oaxaca-Blinder decomposition method. The reference coefficients are from a pooled regression over both groups (see Neumark, 1988). Controls include years of potential experience and its square, 7 education categories, 14 industry categories, 9 occupation categories, and 16 district fixed effects. Year fixed effects are also included in all specifications, but their contribution to the wage gap is lower than |0.001| in all specifications (unreported). Survey weights are used as probability weights and robust standard errors are reported in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . See Table A1 and text for the definitions of independent variables.

**TABLE 3: VOTING BEHAVIOR AND WAGES AMONG JEWISH-ISRAELIS**

	OLS	HLM	Q(0.5)	Q(0.1)	Q(0.9)
	(1)	(2)	(3)	(4)	(5)
<b>Jewish-Israelis</b>					
<b>Panel A: No Controls</b>					
% Category 1	1.04*** (0.16)	1.09*** (0.13)	1.08*** (0.18)	0.34*** (0.09)	1.48*** (0.19)
% Category 2	0.30 (0.29)	0.65*** (0.21)	0.39 (0.33)	0.22 (0.18)	0.43 (0.33)
Female	-0.09 (0.08)	-0.13** (0.06)	-0.03 (0.07)	-0.32*** (0.08)	0.07 (0.11)
% Category 1 x Female	-0.14* (0.08)	-0.13* (0.07)	-0.16* (0.09)	0.29*** (0.09)	-0.44*** (0.11)
% Category 2 x Female	-0.22 (0.16)	-0.13 (0.13)	-0.34** (0.13)	0.01 (0.18)	-0.41 (0.25)
Constant	3.21*** (0.14)	3.07*** (0.10)	3.13*** (0.14)	2.84*** (0.08)	3.84*** (0.16)
$\chi^2(2): H_0$ (Random Effects are 0)		1282 (p value $\approx$ 0)			
<b>Panel B: Regressions using Controls</b>					
% Category 1	0.54*** (0.05)	0.51*** (0.06)	0.59*** (0.05)	0.46*** (0.07)	0.57*** (0.09)
% Category 2	0.46*** (0.12)	0.59*** (0.09)	0.43*** (0.11)	0.42*** (0.10)	0.33* (0.17)
Female	-0.07 (0.08)	-0.08* (0.04)	-0.03 (0.09)	-0.05 (0.08)	-0.15** (0.08)
% Category 1 x Female	-0.04 (0.07)	-0.03 (0.05)	-0.10 (0.08)	0.02 (0.09)	-0.04 (0.07)
% Category 2 x Female	-0.35** (0.16)	-0.33*** (0.10)	-0.32* (0.18)	-0.41** (0.17)	-0.21 (0.15)
Controls	YES	YES	YES	YES	YES
Constant	1.80*** (0.12)	1.74*** (0.10)	2.09*** (0.16)	0.64*** (0.21)	2.55*** (0.16)
<b>Observations</b>	69,177	69,177	69,177	69,177	69,177
<b>R-squared</b>	0.36	---	0.36	0.34	0.35
$\chi^2(2): H_0$ (Random Effects are 0)		39 (p value $\approx$ 0)			

Source: Israeli Household Income Surveys (2004-2009).

Note: Regressions are estimated using OLS, Hierarchical Linear Modeling (Multilevel Models) and Quantile Regression (QR) models. In all specifications, the reference variable is the percentage of voters that voted for political parties in Category 3. The dependent variable is the logarithm of the hourly wage in 2010 US dollars. The sample consists of Jewish-Israelis who either reside in a Jewish locality (60 localities) or a mixed locality (8 localities); localities with less than 20,000 inhabitants are excluded because their code could not be identified in the IHIS data. Controls include years of potential experience and its square, 7 education categories, 14 industry dummies, 9 occupation categories, a binary nativity variable, 9 origin dummies, 16 district dummies, year fixed effects and a binary mixed locality variable. See Table A1 and text for the definitions of the independent variables. Robust standard errors are clustered at the locality level and reported in parentheses for all models and specifications except HLM. The HLM model is fit using maximum likelihood and standard errors are computed using the standard observed information matrix. (Standard errors in parentheses\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ )

**TABLE 4: VOTING BEHAVIOR AND WAGES AMONG ARAB-ISRAELIS**

Arab-Israelis	OLS	OLS	HLM	Q(50 <sup>th</sup> )	Q(50 <sup>th</sup> )	Q(10 <sup>th</sup> )	Q(90 <sup>th</sup> )
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% Balad (Pan-Arab)	0.71*** (0.25)	0.38*** (0.13)	0.40* (0.21)	0.30*** (0.11)	0.40* (0.21)	0.69*** (0.21)	-0.11 (0.18)
% Mainstream (Right)	0.15* (0.09)	0.45*** (0.15)	0.48*** (0.12)	0.45*** (0.15)	0.74*** (0.22)	0.35 (0.25)	0.32*** (0.11)
% United Arab List (UAL Islamic Parties)	0.03 (0.08)	0.06 (0.10)	0.03 (0.11)	0.17* (0.09)	0.22* (0.12)	-0.08 (0.21)	0.00 (0.08)
Female	-0.07 (0.13)	-0.08 (0.13)	-0.11 (0.18)	0.06 (0.13)	0.03 (0.12)	-0.12 (0.18)	-0.23* (0.13)
% Balad x Female	-0.46 (0.32)	-0.41 (0.32)	-0.41 (0.48)	-0.51 (0.35)	-0.74** (0.34)	-0.31 (0.35)	-0.09 (0.44)
% Mainstream x Female	-0.15 (0.14)	-0.18 (0.14)	-0.11 (0.18)	-0.33*** (0.14)	-0.39* (0.20)	-0.17 (0.17)	-0.01 (0.12)
% UAL x Female	0.02 (0.17)	0.01 (0.16)	0.05 (0.21)	-0.22 (0.15)	-0.19 (0.13)	0.05 (0.23)	0.20 (0.13)
Constant	2.72*** (0.14)	2.52*** (0.18)	2.49*** (0.16)	2.65*** (0.16)	2.28*** (0.27)	1.77*** (0.25)	3.12*** (0.16)
District Dummies		YES	YES	YES	YES	YES	YES
Enclave Dummy/2 Origin Dummies		YES	YES	YES		YES	YES
Residents of Arab Enclave					YES		
<b>Observations</b>	4,720	4,720	4,720	4,720	2,663	4,720	4,720
<b>R-squared</b>	0.32	0.33	-----	0.32	0.41	0.28	0.31
<b><math>\chi^2(2): H_0</math> (Random Effects are 0)</b>		12 (p value $\approx$ 0)					

Source: Israeli Income Surveys (2004-2009).

Note: Regressions are estimated using OLS and Quantile Regression (QR) models. In all specifications, the reference variable is the percentage of voters that voted for the Hadash party. The dependent variable is the logarithm of the hourly wage in 2010 US dollars. The sample consists of Arab-Israelis who either reside in the Arab enclave or in a mixed locality (approx 97% of those in sample), except in col(4) where the sample is limited to those residing in the Arab enclave. There are 8 mixed localities and 12 Arab localities; localities with less than 20,000 inhabitants are excluded because their code could not be identified in IHIS data. All specifications include the following controls: years of potential experience and its square, 7 education categories, 14 industry dummies, 9 occupation categories, and year fixed effects. See Table A1 and text for the definitions of the independent variables. Standard errors are clustered at the locality level and reported in parentheses for all models and specifications except HLM. The HLM model is fit using maximum likelihood and standard errors are computed using the standard observed information matrix. (Standard errors in parentheses\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ )

**TABLE 5: VOTING BEHAVIOR AND WAGES AMONG JEWISH-ISRAELIS  
(SELECTIVITY-CORRECTED REGRESSIONS USING BFG METHOD)**

Second Step Regression	OLS	Q(0.5)	Q(0.1)	Q(0.9)
<b>Jewish-Israelis</b>	(1)	(2)	(3)	(4)
% Category 1	0.55*** (0.05)	0.61*** (0.05)	0.47*** (0.07)	0.56*** (0.09)
% Category 2	0.52*** (0.12)	0.51*** (0.10)	0.49*** (0.11)	0.34** (0.16)
Female	-0.11* (0.07)	-0.05 (0.07)	-0.16** (0.07)	-0.20*** (0.07)
% Category 1 x Female	-0.00 (0.06)	-0.08 (0.06)	0.12 (0.08)	-0.00 (0.07)
% Category 2 x Female	-0.30** (0.13)	-0.32** (0.14)	-0.25* (0.14)	-0.15 (0.15)
Controls	YES	YES	YES	YES
Constant	2.47*** (0.20)	2.06*** (0.19)	1.86*** (0.58)	2.57*** (0.26)
<b>Observations</b>	69,177	69,177	69,177	69,177
<b>R-squared</b>	0.37	0.36	0.34	0.36

Source: Israeli Income Surveys (2004-2009).

Note: Regressions are estimated using a selection correction method proposed by Bourguignon, Fournier and Gurgand (2007) where the first step is a multinomial logit regression. The multinomial logit regresses the type of locality by voting distribution (see text) on 7 education categories, age and its square, 5 marital status dummies (married, separated, divorced, widowed and single), 9 origin dummies, the number of children under18, interaction terms between origin dummies and number of children, and interaction terms between being married and origin dummies. Second step regressions are estimated using OLS and Quantile Regression (QR) models, where selection is corrected for by using the inverse mills ratios from the multinomial logit as regressors. In all specifications, the reference variable is the percentage of voters that voted for political parties in Category 3. The dependent variable is the logarithm of the hourly wage in 2010 US dollars. The sample consists of Jewish-Israelis who either reside in a Jewish locality (60 localities) or a mixed locality (8 localities); localities with less than 20,000 inhabitants are excluded because their code could not be identified in the IHIS data. Controls include years of potential experience and its square, 7 education categories, 14 industry dummies, 9 occupation categories, a binary nativity variable, 9 origin dummies, 16 district controls, year fixed effects and a binary mixed locality variable. See Table A1 and text for the definitions of the independent variables. Robust standard errors are clustered at the locality level and reported in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ )

**TABLE 6: VOTING BEHAVIOR AND WAGES AMONG ARAB-ISRAELIS  
(SELECTIVITY-CORRECTED REGRESSIONS USING BFG METHOD)**

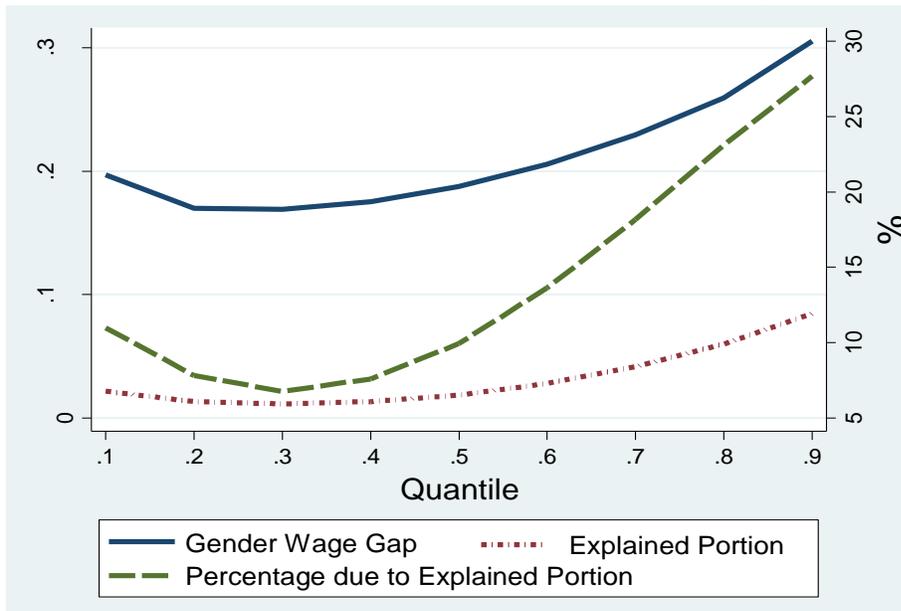
Second Step Regression	OLS	OLS	Q(50 <sup>th</sup> )	Q(50 <sup>th</sup> )	Q(10 <sup>th</sup> )	Q(90 <sup>th</sup> )
<b>Arab-Israelis</b>	(1)	(2)	(3)	(4)	(5)	(6)
% Balad (Pan-Arab)	0.70*** (0.24)	0.40*** (0.12)	0.29*** (0.10)	0.27** (0.13)	0.64** (0.25)	-0.12 (0.15)
% Mainstream (Right)	0.15 (0.09)	0.43*** (0.14)	0.49*** (0.16)	0.68*** (0.17)	0.34 (0.25)	0.39*** (0.12)
% United Arab List (UAL Islamic Parties)	0.01 (0.08)	0.05 (0.09)	0.18** (0.08)	0.18** (0.09)	-0.10 (0.19)	0.07 (0.11)
Female	-0.06 (0.14)	-0.07 (0.13)	0.05 (0.11)	-0.00 (0.12)	-0.11 (0.17)	-0.19 (0.27)
% Balad x Female	-0.52 (0.31)	-0.46 (0.31)	-0.51* (0.27)	-0.62* (0.32)	-0.41 (0.44)	-0.22 (0.88)
% Mainstream x Female	-0.16 (0.14)	-0.18 (0.14)	-0.31*** (0.10)	-0.37* (0.19)	-0.17 (0.15)	-0.08 (0.26)
% UAL x Female	-0.01 (0.17)	-0.02 (0.16)	-0.21* (0.12)	-0.20 (0.13)	0.01 (0.19)	0.15 (0.22)
Constant	2.67*** (0.27)	2.42*** (0.31)	2.38*** (0.30)	1.99*** (0.58)	1.64*** (0.53)	2.86*** (0.32)
District Dummies		YES	YES	YES	YES	YES
Enclave Dummy/2 Origin Dummies		YES	YES		YES	YES
Residents of Arab Enclave				YES		
<b>Observations</b>	4,720	4,720	4,720	2,663	4,720	4,720
<b>R-squared</b>	0.33	0.33	0.33	0.41	0.28	0.31

Source: Israeli Income Surveys (2004-2009).

Note: Regressions are estimated using a selection correction method proposed by Bourguignon, Fournier and Gurgand (2007) where the first step is a multinomial logit regression. The multinomial logit regresses the type of locality by voting distribution (see text) on 7 education categories, age and its square, 5 marital status dummies (married, separated, divorced, widowed and single), 2 origin dummies, the number of children under 18, interaction terms between origin dummies and number of children, and interaction terms between being married and origin dummies. Second step regressions are estimated using OLS and Quantile Regression (QR) models, where selection is corrected for by using the inverse mills ratios from the multinomial logit as regressors. In all specifications, the reference variable is the percentage of voters that voted for the Hadash party. The dependent variable is the logarithm of the hourly wage in 2010 US dollars. The sample consists of Arab-Israelis who either reside in the Arab enclave or in a mixed locality (approx 97% of those in sample), except in col(4) where the sample is limited to those residing in the Arab enclave. There are 8 mixed localities and 12 Arab localities; localities with less than 20,000 inhabitants are excluded because their code could not be identified in IHIS data. All specifications include the following controls: years of potential experience and its square, 7 education categories, 14 industry dummies, 9 occupation categories, and year fixed effects. See Table A1 and text for the definitions of the independent variables. Standard errors are clustered at the locality level and reported in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## Appendix: Additional Figures and Tables

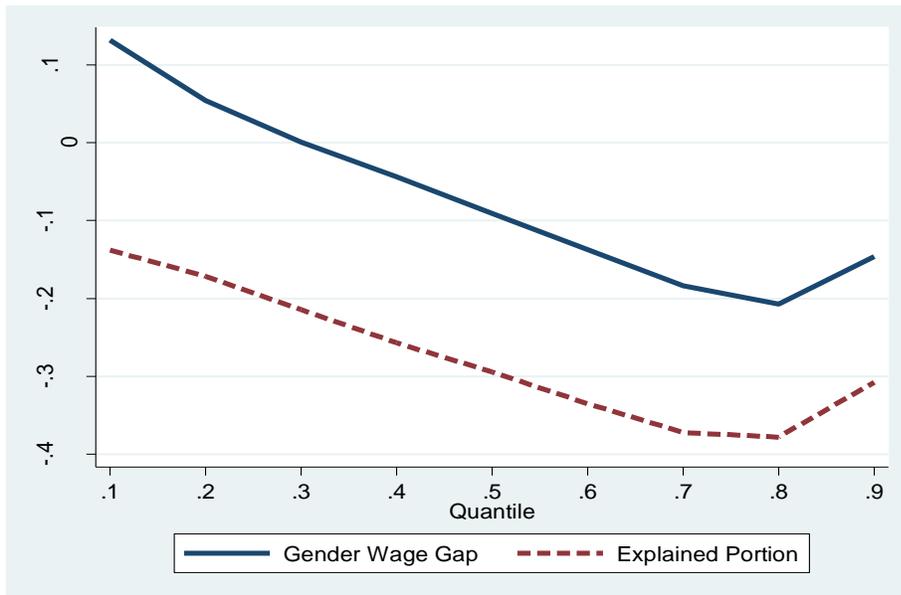
**FIGURE A1: DECOMPOSITION OF THE GENDER WAGE GAP, JEWS**



Source: Israeli Household Income Surveys (2004-2009).

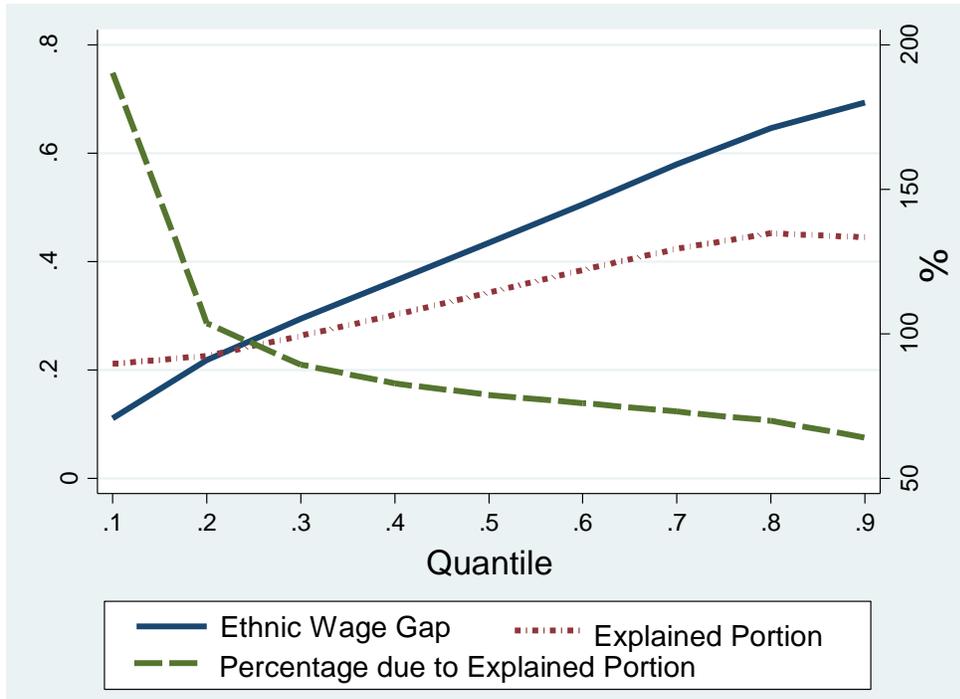
Note: Gender wage gap is decomposed into an explained and unexplained portion (not reported) at various percentiles of the wage distribution using a recent technique by Chernozhukov, Fernández-Val and Melly (2013). The percentage due to the explained effect is also shown. Sample includes only Jewish-Israeli men and women; controls include gender, years of potential experience, its square, 7 education dummies, 14 industry (one digit) and 9 occupation (one digit) dummies, and year fixed effects.

**FIGURE A2: DECOMPOSITION OF THE GENDER WAGE GAP, ARABS**



Note: Sample includes Arab-Israeli men and women. See Figure A1 notes for source and estimation technique. In this figure, the percentage due to the explained effect (2<sup>nd</sup> y-axis) is not shown because the explained portion of the wage gap is always negative.

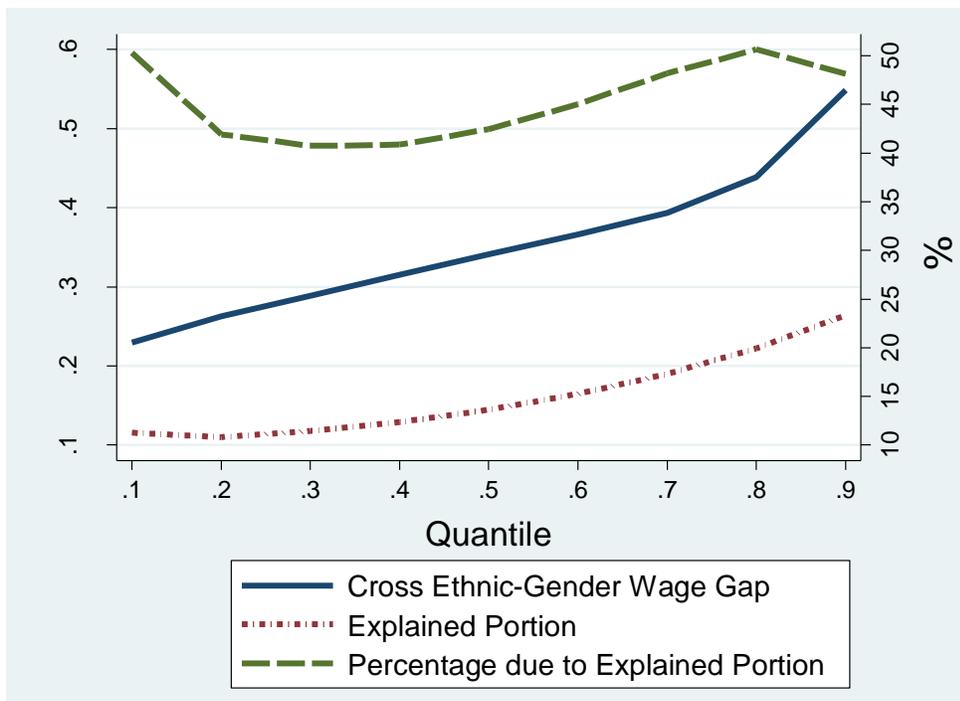
**FIGURE A3: DECOMPOSITION OF THE ETHNIC WAGE GAP, MALES**



Source: Israeli Income Surveys (2004-2009).

Note: Sample includes only Jewish-Israeli and Arab-Israeli men; see Figure A1 notes for estimation technique and the controls included.

**FIGURE A4: DECOMPOSITION OF THE CROSS ETHNIC-GENDER WAGE GAP**



Source: Israeli Income Surveys (2004-2009).

Note: Sample includes only Jewish-Israeli men and Arab-Israeli women; see Figure A1 notes for estimation technique and the controls included.

**TABLE A1: DESCRIPTION OF VARIABLES**

<b>Variable</b>	<b>Description</b>
Ln (Wage)	The logarithm of the hourly wage is in 2010 US dollars. To compute the hourly wage in Israeli Shekels, the monthly salary is divided by the number of weekly hours reported times 4 . Then the Israeli CPI is used to deflate all hourly rates from years 2004-2009 to 2010 Israeli Shekels. Next, the hourly wage rate is converted to 2010 US dollars.
Experience	Since actual labor market experience is not reported, experience is proxied for using potential experience, which is constructed as Age-Years of schooling-6.
Education	In most regressions, 7 schooling dummy variables are used. These include the following categories: did not study, 1-4 years of schooling, 5-8, 9-10, 11-12, 13-15, and 16+.
Industry	14 one digit industry dummies are used: agriculture, manufacturing, electricity, construction, wholesale, restaurants, transportation, finance and insurance, real estate, public admin (including military), education, health, community and domestic servants.
Occupation	9 one digit occupation dummies are used: academics, technicians and professionals, managers, clerical workers, sales and service workers, skilled agriculture, skilled industry workers (including operators and trades workers) unskilled workers, and military personnel or armed forces.
Nativity	A dummy variable for whether one is born in Israel or not.
Origin	For Jewish-Israelis, origin has 9 categories. The first four apply when the continent of birth for the individual and father is the same: 1.) America/Australia, 2.) Africa, 3.) Asia, 4.) Europe. The next four categories apply when the country of birth is Israel while father's continent of birth is 5.) America/Australia, 6.) Africa, 7.) Asia, 8.) Europe. The ninth origin category is when both respondent and father are born in Israel. Arab-Israelis have two categories of origin, most of which belong to category 9; the remaining are Bedouins (nomads), who are in the tenth category.
District	16 district dummy variables include Jerusalem, Zefat, Yizreel, Akko, Haifa, Haifa/Hadera, Sharon, Petach-tikva, Ramla, Rehovot, Tel-Aviv, Tel-Aviv/Ramat-gan, Tel-Aviv/Hulon, Ashkelon, Beer Sheva, and Judea Sammaria.
Locality	Localities are municipalities/ towns and there are approximately 1200 localities in Israel. The ones sampled between 2004 and 2009 in the Israeli income survey that have a locality code (and therefore have more than 20,000 inhabitants) are a total of 80 localities, 60 of which are predominantly Jewish localities, 12 are predominantly Arab localities (clustered in the Arab enclave), and 8 are considered mixed localities.
Mixed Locality	Mixed localities are localities that are heterogeneous in religious affiliation, such that at least 10% of population is Jewish and at least 10% is Arab; there are 8 mixed localities.
Arab Enclave	Of the 80 localities sampled in the Israeli income surveys (2004-2009), 12 are predominantly Arab and approximately 80% of the Arab population lives there.
% Category 1	Percentage of votes in a given locality allocated to the following political parties: Labour, Kadima, Meimad, Yisrael Hazaka, Meretz, Ale Yarok, Shas, and Hadash.
% Category 2	Percentage of votes in a given locality allocated to the following political parties: Koah Hakesef, the Jewish Home, HaYisraelim, Man's Rights in the Family Party, Tzomet, the Greens, and Balad.
% Category 3	Percentage of votes in a given locality allocated to the following political parties: Or, United Torah Judaism, Gil, National Union, Holocaust, Yisrael Beiteinu, Ahrayut, Lazuz, Koah LeHashpia, Brit Olam, Tzabar, and the United Arab List.
% Hadash	% of votes allocated to Arab-Jewish political party Hadash, which is also in category 1.
% Balad (Pan-Arab)	% of votes allocated to the Arab nationalist party Balad, which is also in category 2.
% United Arab List (UAL)	% of votes allocated to the Arab Islamist party UAL, which is also in category 3.
% Mainstream (Right)	% of votes allocated to any party that is not Hadash, Balad, or UAL.

**TABLE A2: OAXACA-BLINDER DECOMPOSITION OF THE GENDER WAGE GAP BY ETHNICITY FOR SUBGROUPS OF INTEREST IN ISRAEL**

	All	Not in Enclave	Age<35	Age≥35	<11 years of school	College Graduates
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Gender Wage Gap for Jews</b>						
Jewish Males	3.81***	----	3.55***	3.98***	3.43***	4.27***
Jewish Females	3.60***	----	3.37***	3.74***	3.22***	3.98***
Gender Wage Gap	0.22***	----	0.18***	0.24***	0.21***	0.29***
<b>Explained</b>	0.04***	----	0.03***	0.03***	0.05***	0.10***
<i>Experience</i>	0.02***	----	0.04***	0.00***	-0.02***	0.03***
<i>Education</i>	-0.01***	----	-0.04***	-0.00***	0.01***	----
<i>Industry</i>	0.04***	----	0.05***	0.02***	-0.02*	0.05***
<i>Occupation</i>	-0.01***	----	-0.02***	0.01***	0.08***	0.02***
<b>Unexplained</b>	0.18***	---	0.15***	0.21***	0.16***	0.19***
<b>Observations</b>	82,990	----	31,792	51,198	7,016	21,795
<b>Panel B: Gender Wage Gap for Arab Arab-Israelis</b>						
Arab Males	3.41***	3.38***	3.28***	3.57***	3.29***	4.02***
Arab Females	3.47***	3.40***	3.35***	3.60***	3.14***	3.86***
Gender Wage Gap	-0.06***	-0.02	-0.07***	-0.02	0.15***	0.17***
<b>Explained</b>	-0.26***	-0.16***	-0.25***	-0.26***	-0.06***	-0.02
<i>Experience</i>	0.03***	0.01*	0.02***	0.02***	-0.03***	0.07***
<i>Education</i>	-0.11***	-0.07***	-0.13***	-0.08***	0.01***	----
<i>Industry</i>	-0.09***	-0.05***	-0.08***	-0.10***	-0.06***	-0.08***
<i>Occupation</i>	-0.09***	-0.06***	-0.07***	-0.09***	0.03**	-0.02
<b>Unexplained</b>	0.20***	0.15***	0.23***	0.21***	0.19***	0.18***
<b>Observations</b>	10,171	2,222	5,529	4,642	3,257	1,541

Source: Israeli Income Surveys (2004-2009).

Note: Due to rounding errors, the sum of the components of the wage gap may deviate by one percentage point. The dependent variable is the logarithm of the hourly wage in 2010 US Dollars. Differences between the log hourly wage of Group 1 and Group 2 are decomposed into an explained and unexplained portion using the Oaxaca-Blinder decomposition method. The reference coefficients are from a pooled regression over both groups (see Neumark, 1988). Year fixed effects are included in all specifications, but their contribution to the wage gap is lower than 0.001. Robust standard errors are reported in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . See Table A1 and text for the definitions of independent variable

**TABLE A3: OAXACA-BLINDER DECOMPOSITION OF THE ETHNIC WAGE GAP AND CROSS ETHNIC-GENDER WAGE GAP FOR SUBGROUPS IN ISRAEL**

	All	Not in Enclave	Age<35	Age≥35	<11 years of school	College Graduates
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Ethnic Wage Gap Among Males</b>						
Jewish-Israeli Males	3.81***	3.82***	3.55***	3.98***	3.43***	4.27***
Arab-Israeli Males	3.41***	3.38***	3.28***	3.57***	3.29***	4.02***
Ethnic Wage Gap	0.40***	0.44***	0.27***	0.41***	0.14***	0.25***
<b>Explained</b>	0.33***	0.36***	0.25***	0.29***	0.11***	0.14***
<i>Experience</i>	0.04***	0.05***	-0.01***	0.00***	0.08***	0.05***
<i>Education</i>	0.11***	0.10***	0.13***	0.10***	0.01**	----
<i>Industry</i>	0.03***	0.04***	0.02***	0.04***	0.02***	0.06***
<i>Occupation</i>	0.15***	0.16***	0.12***	0.14***	0.01**	0.03***
<b>Unexplained</b>	0.07***	0.08***	0.02*	0.12***	0.03**	0.10***
<b>Observations</b>	46,553	40,558	18,762	27,791	6,670	10,710
<b>Panel B: Cross Ethnic-Gender Wage Gap</b>						
Jewish-Israeli Males	3.81***	3.82***	3.55***	3.98***	3.43***	4.27***
Arab-Israeli Females	3.47***	3.40***	3.35***	3.60***	3.14***	3.86***
Ethnic Wage Gap	0.35***	0.42***	0.20***	0.38***	0.29***	0.41***
<b>Explained</b>	0.16***	0.17***	0.05***	0.16***	0.15***	0.23***
<i>Experience</i>	0.08***	0.07***	0.02***	0.02***	0.04***	0.13***
<i>Education</i>	-0.00	-0.00	-0.03***	0.03***	0.03***	----
<i>Industry</i>	0.09***	0.09***	0.08***	0.08***	-0.00	0.11***
<i>Occupation</i>	-0.01	0.01	-0.03***	0.03***	0.09***	-0.00
<b>Unexplained</b>	0.19***	0.25***	0.15***	0.22***	0.14***	0.18***
<b>Observations</b>	41,516	39,562	16,003	25,513	4,183	10,595

Source: Israeli Income Surveys (2004-2009).

Note: Due to rounding errors, the sum of the components of the wage gap may deviate by one percentage point. The dependent variable is the logarithm of the hourly wage in 2010 US Dollars. Differences between the log hourly wage of Group 1 and Group 2 are decomposed into an explained and unexplained portion using the Oaxaca-Blinder decomposition method. The reference coefficients are from a pooled regression over both groups (see Neumark, 1988). Year fixed effects are included in all specifications, but their contribution to the wage gap is lower than 0.001. Robust standard errors are reported in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . See Table A1 and text for the definitions of independent variables