Breaking Barriers: Cultural Transmission and Women's Economic Empowerment*

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Abstract

This paper provides causal evidence on the horizontal cultural transmission of gender norms and women's long-term socio-economic outcomes. We explore the forced migration of ethnic Turks from Bulgaria to Türkiye after the fall of the Iron Curtain as a natural experiment. Despite shared linguistic and religious heritage, ethnic Turkish women from Bulgaria exhibited more progressive gender norms and stronger labor market attachment compared to the traditional roles typically held by native Turkish women. We investigate whether the influx of these progressive women influenced labor market participation, sector of employment, educational attainment, and fertility behavior among native Turkish women over the following decade. Using difference-in-differences analyses, in which we instrument the refugee settlement patterns with those of earlier refugees, we find a significant increase in labor market participation among native Turkish women. Moreover, this increase is particularly pronounced in the male-dominated manufacturing sector where refugee women were concentrated. These effects are also gender-specific, with no parallel changes among native men. Additionally, fertility rates among native women decreased, aligning more closely with those of migrants. However, we observe no significant changes in educational outcomes for either gender. Our findings suggest that exposure to progressive gender norms spurred a cultural shift, reshaping native women's roles both in the workplace and at home.

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1 Introduction

Over the past century, increased education, significant technological advancements, and family-friendly policies have greatly increased labor force participation among married women and women with children (Goldin, 2006; Greenwood et al., 2005; Olivetti and Petrongolo, 2017). Yet, in regions such as the Middle East and South Asia, female labor market participation remains low despite strides in female emancipation and broader economic progress (Bertrand, 2020; Giuliano, 2020). These persistent disparities in female labor market engagement are largely shaped by cultural and gender norms, which influence both women's employment choices and their identities concerning work (Giuliano, 2020; Jayachandran, 2015; Akerlof and Kranton, 2000). Despite this, the role of cultural transmission and social learning in shaping gender norms and women's labor market and fertility behavior and education remains underexplored, particularly in traditionally conservative societies where women are often confined to domestic roles (Fernandez, 2013; Alesina et al., 2013).

This paper provides causal evidence on the horizontal cultural transmission of gender norms and its impact on women's labor market outcomes, fertility behavior, and educational attainment.[1] We explore the mass influx of ethnic Turkish refugees from Bulgaria to Türkiye in 1989 as a natural experiment to explore how horizontal cultural transmission of gender norms and attitudes among neighbors and friends influences women's socioeconomic outcomes a decade later.

Following the fall of the Iron Curtain, nearly half a million ethnic Turks were forced to migrate to Türkiye by the Bulgarian government, leading to one of the most rapid demographic transitions in late 20th-century Europe (Vasileva, 1992; Neuburger, 2004). Ethnic Turkish refugees, sharing linguistic, religious, and ethnic heritage with the local population, were perceived as natives in Türkiye. However, having lived in Bulgaria for over five centuries, these immigrant women brought deeply ingrained progressive gender norms, a legacy of Bulgaria's socialist period. During this era, women's participation in the labor force was not just encouraged; it was

[1] In their seminal work, Bisin and Verdier (2001) identify three forms of cultural transmission: vertical, horizontal, and oblique. Vertical transmission refers to the intergenerational transmission of values and beliefs from parents to children. Horizontal transmission occurs among peers, while oblique transmission focuses on the influence of role models such as teachers outside the family and peer group (Giuliano, 2020).

mandatory, reflecting broader industrial ambitions and ideals of gender equality. This experience contrasted sharply with Türkiye's traditional 'male breadwinner' model, which confined women to domestic and caregiving roles.

The impact of these divergent gender norms between refugees and native Turkish women was reflected in the significant differences in their labor force participation, fertility rates, educational attainment, employment in male-dominated industries, and attitudes toward gender roles. For instance, in our primary empirical analysis sample of the 1990 Turkish census in this study, 72% of ethnic Turkish women participated in the labor force compared to just 20% of native Turkish women. Similarly, 66% of the ethnic Turkish women worked in the manufacturing sector, a sharp contrast to only 23% of their native counterparts.[2] Thereby, this sudden influx of ethnic Turks into Türkiye precipitated an exogenous shock to the social and economic environments where native Turkish women socialize, providing a unique opportunity to study the malleability of gender norms and their effects on women's economic behavior in the long run (Fogli and Veldkamp, 2011; Fernández and Fogli, 2009; Alesina et al., 2013).

In our main analysis, we use data from the 1990 and 2000 censuses of Türkiye. To identify the impact of the 1989 refugee shock, we use a difference-in-differences (DiD) estimation across the 623 district centers in Türkiye. We examine the link between changes in the labor market and socioeconomic outcomes between 1990 and 2000 and the settlement patterns of 1989 refugees. To address potential biases in the settlement choices of the 1989 refugees, we employ an instrumental-variable strategy based on the population share of earlier ethnic Turks who arrived from Bulgaria before 1985 in several waves throughout the 20th century. The government settled these earlier waves of ethnic Turks and supported them through state-led housing campaigns. Our data show that recent refugees were significantly more likely to settle in districts with a higher concentration of earlier Bulgarian migrants. In line with state-led settlement programs, we also find that the concentration of earlier Bulgarian migrants does not correlate with internal migration flows or labor market dynamics, fertility behavior, and educational attainment of the native population. Moreover, most of these migrants remained in their initial settlement

[2]The World Value Surveys from the early 1990s also show that while only 29% of Bulgarian women felt that men have greater employment rights, 57% of Turkish women held this belief.

provinces, as confirmed by a strong correlation between settlement and residence in the 1985 census.[3]

A critical feature of our empirical analysis is that our data at the district level allow us to compare districts within the same province using province-level fixed effects (which allow for differential time trends across provinces in our time-differenced equation). This is empirically possible because significant variation exists in the earlier refugee density across districts of a given province (our instrument) due to the heavy involvement of the Turkish government in their settlement patterns. For instance, in the Tekirdağ province of northwestern Turkey, which is about 6,000 km square, the fraction of earlier refugees to natives is 0.18 in one district center, between 0.1 and 0.15 in two district centers, but less than 0.02 in four districts (out of the 9 district centers). Therefore, we compare highly similar district centers except for the refugee density—especially when we further restrict the sample by population size.

We find that the mass influx of ethnic Turkish women significantly improved the labor market attachment of native women a decade later both in absolute terms and relative to men residing in the same districts. Specifically, our results indicate that when the refugee-to-native ratio increases by one percentage point, the employment rate of native women increases by 0.6 percentage points and their labor force participation rate by 0.7 percentage points. Importantly, the effects on employment are much larger in the tradable male-dominated manufacturing sector, where ethnic Turkish women have a significantly stronger presence. In addition, the positive employment effects are also stronger for native women with similar educational attainment to refugees, namely those with middle or high school degrees; in fact, almost 85% of refugee women have these degrees. These positive labor market effects among native women contrast with the expected labor supply effects of mass migration, which would typically increase competition and potentially reduce demand for native women.

In contrast, our analysis reveals that the concentration of ethnic Turkish women has no discernible effect on the employment outcomes or sectoral distribution of native men a decade later. We confirm this gendered impact of the 1989 refugee shock by conducting a triple-difference anal-

[3]For robustness, we also employ a triple-difference specification, comparing changes in labor market, fertility, and schooling outcomes between 1990 and 2000 for males and females residing in the same district.

ysis where we take differences across both time and gender dimensions. Our analysis of other socioeconomic outcomes indicates a significant decline in fertility rates among native Turkish women a decade later, bringing their fertility levels closer to those of the refugee women. However, we find no evidence of an impact on schooling outcomes for either gender. Finally, the robustness of our findings is further supported by placebo tests conducted for the period between 1985 and 1990, which yield economically and statistically insignificant estimates, providing supportive evidence that pre-migration trends do not explain our results.

These findings, particularly the gender-specific effects on female labor market outcomes and fertility, suggest that social dynamics beyond traditional labor market mechanisms are at play. We posit that factors such as social learning, peer influence, and the formation of new gender norms are potential mediators explaining our results. To explore these underlying mechanisms, we turn to data from the World Value Surveys conducted in the 1990s. Our results indicate that native women in districts with a higher concentration of ethnic Turkish women tend to adopt more progressive attitudes towards female employment and autonomy within a decade. Specifically, they place greater importance on work as a part of life and are less likely to support male priority during times of scarcity. Moreover, native women in these districts report higher autonomy scores. These findings suggest that the transmission of gender norms, facilitated by social learning between groups that share a common language and religion but differ in gender norms, plays an important role in shaping the observed labor market outcomes.

Native women's rising employment levels could have other potential reasons. First, the refugee influx may have stimulated overall production and job creation through increased demand in the product market; however, such effects are generally less evident in tradeable sectors like manufacturing. (In contrast, a rise in native women's employment in services could be due to higher local demand resulting from the arrival of ethnic Turks.) Hence, the rise in native women's manufacturing employment is unlikely due to increased product demand. Second, refugees who are, on average, more educated than natives and have significant labor market experience in sectors such as manufacturing could increase productivity. Moreover, if the increased productivity is more pronounced in traditionally female sectors, such as textiles, we could observe a

more positive impact on women's employment. However, comparing the aggregate growth in employment in different manufacturing sub-sectors, we find no evidence of higher growth in traditionally female sectors. Finally, we show that changing internal migration patterns due to the arrival of refugees are unlikely to explain our results.

Our paper broadly relates to the studies on social learning across generations, peers, and diverse groups sharing common labor market environments. Prior research shows that exposure to diverse gender norms through migration, media, or policy changes can transform deep-seated societal attitudes. These shifts often lead to more equitable gender norms and increased female labor force participation as individuals revise their beliefs in response to new information, thereby challenging traditional societal norms through local social learning (Fernández, Fogli, and Olivetti 2004; Fernández and Fogli, 2009; Fogli and Veldkamp, 2011; Jensen and Oster, 2009). Our work extends this body of research by examining a unique exogenous shock in cultural norms brought about by the sudden influx of ethnic Turks from Bulgaria to Türkiye, who introduced more progressive gender norms than those of the local population. This historical episode presents a particularly compelling empirical setting to estimate the causal impact of these shifting norms via horizontal cultural transmission on women's socioeconomic outcomes a decade later.

Our study also closely relates to a growing body of research investigating the horizontal transmission of gender norms and attitudes amidst exogenous population movements. Miho et al. (2024) examine the horizontal transmission of cultural norms between groups during Stalin's ethnicity-based deportations in WWII, finding that regions with a higher influx of Protestant expellees, who held more egalitarian gender norms compared to their Muslim counterparts, now exhibit stronger female labor market attachment, higher rates of female business leadership, and higher educational achievements for both genders. Similarly, Boelmann et al. (2020) and Jessen et al. (2024) analyze the effects of East German women migrating to West Germany after reunification. Both studies find that the migration of more progressive East German women to West Germany after reunification significantly improved work hours, maternal employment, and shortened parental leave duration among West German women. Further, related to our study,

the literature on horizontal cultural transmission suggests that cultural transmission between groups is likely higher when the groups are culturally similar (Miho et al., 2024; Giuliano and Tabellini, 2020). This increased transmission occurs because culturally similar groups tend to have greater inter-group trust and more frequent communications and interactions (Guiso, Sapienza, and Zingales, 2009).[4]

Our first contribution to this literature is substantive. Our analysis shows the malleability of gender norms and their effects on women's labor market engagement and emancipation in a socially conservative country in the Middle East, characterized by deeply entrenched gender roles and conservative religious beliefs—as evidenced by the low female labor market participation rate. Despite its economic progress and advances in female education, the Middle East region remains an outlier with persistently weak female labor market attachment and limited visibility of women in the professional and public spheres (Bertrand, 2020).

The other key substantive finding of this study is that the impact on employment of native women is particularly significant in the manufacturing sector, where a large percentage of ethnic Turkish immigrant women (66%) found work upon arriving. This finding is noteworthy because men have traditionally dominated the sector. While this result might be surprising at first, it must be noted that the shared language and religion between ethnic Turkish and native Turkish women facilitate trust and cultural exchange, enhancing the impact of cultural transmission (Miho et al., 2024; Giuliano and Tabellini, 2020).

Compared to the previous literature, our identification framework has several strong features. While certain individual papers share some of these features, all these features in our study make a strong case for internal validity. First, we examine the impact of a rapid and large forced migration episode, which occurred over just three months and was unrelated to native women's outcomes. Second, we use a plausibly exogenous instrumental variable to account for the potential endogeneity of the settlement patterns of the 1989 refugees. Third, we use gender- and time-differenced outcomes (triple DiD), as well as time-differenced outcomes (DiD), so that we can better identify the gendered impact of the refugee shock. Fourth, we conduct

[4]Other research on horizontal cultural transmission includes studies by Clingingsmith, Khwaja, and Kremer (2009), Bisin and Verdier (2010), Spolaore and Wacziarg (2013), Alesina and Giuliano (2015), Tuccio and Wahba (2018), and Giuliano and Tabellini (2020).

several placebo checks that support our identification assumptions. Fifth, we examine cultural transmission about 11 years after the refugee shock, which is shorter than most similar studies, allowing us to bypass concerns about other confounding events occurring in longer periods. Finally, our findings rule out other potential explanations, such as gender-specific labor demand shifts and internal migration, for the observed changes in socioeconomic outcomes.

Our study also builds on research into the economic effects of mass cross-border migrations, which often focus on labor market outcomes and show mixed results depending on the migrants' skills, ages, and education levels (Card, 1990; Aydemir and Borjas, 2007; Ottaviano and Peri, 2012). For instance, Aydemir and Kirdar (2017) examine the immediate labor market effects of the same migration shock we study, finding an increase in male unemployment by 1990 in regions with a high influx of migrants, while there were no significant impacts on female unemployment or labor force participation for either gender. The lack of significant changes in women's labor market outcomes shortly after ethnic Turkish immigrants arrived suggests that direct labor market competition from ethnic Turkish women is unlikely. However, given the positive impact, we observed on native women's employment a decade later, we note that any competitive effects could underestimate the true influence of ethnic Turkish women on native women's labor market outcomes. Further, our study diverges from earlier work by focusing on the diffusion of cultural norms and peer social learning across groups with distinct gender norms, processes that naturally require time and sustained interaction and socialization. Therefore, our analysis examines the outcomes of native women a decade after the arrival of ethnic Turkish women, allowing ample time for socialization and the adoption of new gender norms and attitudes.

The rest of the paper proceeds as follows. Section 2 provides a brief historical background on the ethnic Turkish in Bulgaria and mass migration to Türkiye. Section 3 describes the data used in the analyses, and the identification strategy is discussed in detail in Section 4. We present the main results and robustness checks in Section 6, followed by a discussion of mechanisms and related empirical evidence. Section 7 concludes the paper.

2 Background on Migration of Ethnic Turks from Bulgaria to Türkiye and Gender Norms

2.1 Migration of Ethnic Turks from Bulgaria to Türkiye

The Ottoman Empire, which extended across the Balkans, was home to a significant ethnic Turkish population. The empire's decline in the late 19th century, along with geopolitical upheavals, led to substantial migrations from the region to Türkiye (Karpat, 2001). These migrations intensified following World War I and the establishment of the Republic of Türkiye, resulting in four major episodes of population movement between Türkiye and Balkan states, particularly Bulgaria, driven by treaties and forced migration (Clark, 2006).

The first significant wave of migration from Bulgaria to Türkiye occurred in 1925, with approximately 219,000 individuals relocating under a bilateral agreement (Kandiyoti, 2002). A second wave took place between 1950 and 1951, during which 154,393 ethnic Turks migrated to Türkiye due to Bulgaria's shift to communism. However, this migration was abruptly interrupted by a border closure that left many families separated (Poulton, 1997; Kirisci, 2000). In response to the situation, the "Close Relative Migration Agreement" was instituted in 1968, facilitating the migration of 116,521 ethnic Turks to Türkiye (Doganay, 1996). However, starting in the early 1970s, Bulgaria's communist regime implemented strict emigration controls, halting further migration for nearly two decades.

Bulgaria's migration restrictions remained in place until 1989 when the largest migration wave to Türkiye was spurred by the aggressive "Revival Process" assimilation policy that began in 1984. This policy involved renaming ethnic Turks with Slavic names, banning the Turkish language, closing mosques, and eliminating Turkish customs, with severe penalties for dissenters (Amnesty International, 1986; Poulton, 1997). In the summer of 1989, the situation escalated, resulting in the forced transportation of ethnic Turks to the Turkish border and a massive exodus. From May 26 to August 21, 1989, approximately 320,000 to 370,000 ethnic Turks sought asylum in Türkiye, marking one of the most rapid demographic shifts in late 20th-century Europe (Vasileva, 1992; Eminov, 1997; Neuburger, 2004). Türkiye responded by opening its

borders and implementing supportive measures such as expediting citizenship processes, enabling currency conversion from Bulgarian funds to Turkish lira, and initiating a housing campaign to aid resettlement (Kirisci, 2000).[5]

Historically, state policies have significantly shaped the migration and settlement patterns, particularly affecting the distribution of ethnic Turkish migrants from Bulgaria, which aids our identification. Figure 1 illustrates that from 1934 to 1937, the state settled 86% of these migrants, which rose to 100% during the 1950-1951 period (Geray, 1962). The 1968 wave, aimed at family reunification, also led migrants to choose settlements near their relatives (DPT, 1990). Further, ethnic Turkish migrants were predominantly settled by the state in northwestern and western parts of Türkiye, particularly in the Marmara region, due to similar climate and terrain, and its proximity to the Bulgarian border. This settlement strategy also aligned with the broader state objective of demographic balancing in specific areas. Government-funded housing and land allocations under Settlement Law number 2510 further supported this process. Figure 2 illustrates the distribution of ethnic Turks across Turkish districts and provincial centers in the 1990 census, confirming that the majority of these migrants settled in Western Türkiye, consistent with historical migration patterns from Bulgaria.

2.2 Gender Norms in Bulgaria and Türkiye

Turkish women in both Bulgaria and Anatolia shared common institutions until the dissolution of the Ottoman Empire in 1922, and they maintained close linguistic and religious ties. However, the influence of Bulgaria's socialist era from 1944 to 1989 shaped distinctly progressive gender norms among Bulgarian Turkish women. Under Bulgaria's socialist regime, women were mandated to participate in the labor force, supporting industrial and gender parity goals. By the 1980s, this policy led to an 87% female labor force participation rate, among the highest globally, bolstered by significant advancements in women's education, especially in STEM fields, and comprehensive legislative support including improved workplace rights, maternity benefits,

[5]The 1990 Turkish Census, conducted after the 1989 migration wave, recorded 460,560 Bulgarian-born individuals. This represents a significant increase from the 291,960 reported in the 1985 Census. As Bulgarian migration activity had been minimal since the late 1960s, the 1989 surge marked a significant shift, resulting in approximately 60% increase in the Bulgarian-born population in Türkiye (Kirisci, 2000).

and universal childcare (ILO, 2001). Legal reforms in the 1970s further fortified women's rights in Bulgaria regarding divorce and reproductive autonomy.

In contrast, during the same period, Türkiye adhered to a "male breadwinner" model, where men were the primary earners and women primarily engaged in domestic and caregiving duties. The 1990 Turkish census, as summarized in Table 1, shows that female labor force participation in Türkiye was just 20% at the time. The descriptive statistics in Table 1 also demonstrate how significant institutional differences in gender roles translate into disparities in labor force participation, sectoral employment, fertility, and education between the two groups of women. Specifically, a notable gap in sectoral employment shows that 66% of ethnic Turkish women worked in manufacturing upon their arrival to Turkiye in 1989, in stark contrast to just 23% of native women. Additionally, our data indicates that ethnic Turkish women generally have fewer children and higher educational attainment, particularly in terms of middle and high school completion, though their college completion rates are similar to those of native women.

This significant contrast in gender norms is further illustrated by the early 1990s World Value Survey, which reveals substantial cultural differences between Bulgarian and Turkish societies, especially in attitudes towards maternal employment and traditional gender norms. For instance, while 76% of the Bulgarian respondents believe that working mothers can maintain nurturing relationships with their children, only 48% of the Turkish women agree. Additionally, whereas only 29% of Bulgarian married women think that men should have priority in job opportunities, 57% of Turkish women hold this traditional view. Taken together, these substantial contrasts in gender norms, labor force engagement, and other demographic outcomes highlight the profound differences between the two groups of women, providing a unique framework for exploring the effects of horizontal cultural transmission triggered by the forced migration of ethnic Turks to Türkiye and subsequent change in women's socioeconomic outcomes and gender attitudes a decade later.

3 Data and Descriptive Statistics

The primary data sources for our analysis are the 1985, 1990, and 2000 Turkish Censuses. We also use the 1990 and 1996 World Value Surveys for complementary analysis of gender norms and attitudes. The Turkish Statistical Institute provides 5% random samples of the population in each census. These samples include information on demographic indicators such as the number of live births and educational attainment as well as labor market outcomes, including employment status, labor force participation, and sector of employment. Importantly, the census data also provides detailed information on individuals' place of birth and current district of residence, which is crucial for our identification framework.

Our analysis in this paper is based on labor markets defined by the 1985 classification of districts. In 1985, Türkiye was administratively divided into 67 provinces, each comprising several districts. Additional districts were created between 1985 and 2000 by subdividing existing ones, thereby, enabling us to match the districts from the 1990 and 2000 censuses with the 1985 boundaries. The census data report the location of residence of all individuals. This information first identifies the province and its district. Second, it elicits whether the area of residence is a district center (a provincial center is also a district center), a town that is not a county center, or a rural area. Using this information, we identify whether each person in a given district lives in the district center or elsewhere in that district.

The unit of analysis in our study is district centers, as in Aydemir and Kirdar (2017).[6] This choice of the unit of analysis has several reasons. First, in most districts, the population not living in the district center is mostly engaged in agriculture and, therefore, does not have exposure to the same labor market as the dwellers of the district center. In addition, some districts include other towns that are quite far away from the district center, and the residents of these other towns within the same district are not part of the same labor market as the residents of the district center because commuting to a different town for work was very unlikely in Türkiye in 1985.[7] Moreover, most ethnic Turkish immigrants settled in urban rather than rural areas.

[6] Major cities that house more than one county center are treated as unified metropolitan areas. In 1985, there were three such cities (Istanbul, Ankara, and Izmir) with a population above one million.

[7] In fact, 44% of the total country population in 1985 lived in either villages or towns that were not county centers, which we exclude.

Crucial to our identification, the censuses also report the place of residence five years ago in the form of the province of residence for internal migrants and non-migrants and in the form of the country of residence for those who moved internationally. Using the 1990 Census, the "recent ethnic Turkish immigrants" are defined as individuals who lived in Bulgaria in 1985 but were in Türkiye in 1990—who are virtually all 1989 repatriates. In addition, census data includes place of birth information, enabling the identification of ethnic Turkish migrants from Bulgaria who were already residing in Turkey five years prior to the census. We refer to this group as "earlier ethnic Turkish migrants."

In our analysis, we focus on the economic and social outcomes of native women and examine the changes in these outcomes over time using data from the 1990 and 2000 Turkish censuses. The latter census was conducted more than a decade after the arrival of ethnic Turkish immigrants in 1989. Given our focus on native Turkish women, we exclude individuals born in Bulgaria. Our primary variable of interest is the ratio of 1989 ethnic Turkish migrant women to native women, excluding those born in Bulgaria, in a given district.

We generate the variables for labor market outcomes using two questions in the censuses on labor market activity. The first one elicits whether an individual has worked during the reference week (the week preceding the Census date). According to this information, we define employed individuals as i) those with positive hours of work in the reference week, either paid in cash or in-kind and ii) those who did not work in the reference week but whose attachment to their job continues. The second question identifies individuals actively seeking employment. We use this information, as well as the information on employment status, to establish individuals' labor force participation status. When we compare the labor force participation and employment rates calculated from the 2000 Census with the corresponding official rates calculated from the 2000 Household Labor Force Survey (HLFS) (both conducted by the Turkish Statistical Institute) for the urban sample, we find that the employment rates match quite well in the two data sets.[8] In addition to overall female labor force participation, we also generate an indicator

[8]The employment rates for women aged 15-64 are 16.5% in the census and 16% in the Household Labor Force Survey (HLFS), while for men, the rates are 64% and 68%, respectively. However, unemployment and labor force participation rates show greater discrepancies; participation is higher in the census for both genders (78.5% for men and 23.9% for women) compared to the HLFS (74.0% for men and 18.4% for women). This variation is due to different unemployment definitions: the census simply asks if a person is looking for a job, whereas the HLFS requires a job search within the last three months using certain channels, resulting in

for employment in the manufacturing sector, where ethnic Turkish women predominately start working upon arriving at Türkiye. This variable takes a value of 1 if the native woman is employed in manufacturing and 0 otherwise.

For fertility, we use the total number of births a woman has had by the time of the census, based on the question about the number of children she has given birth to. We focus on this measure rather than marital status or an indicator for ever giving birth because nearly all Turkish women marry and 98% have at least one child, with the first birth typically occurring about 1.6 years after marriage (Kırdar et al., 2018). Table 1 illustrates that ethnic Turkish immigrant women have significantly higher completion rates of middle and high school than native women, while differences in primary school completion and college graduation are minimal. Thus, for educational attainment, we focus on three levels: middle school, high school, and college graduation.

Our analysis focuses on native women aged 18 to 39 when our focus is female labor market outcomes to capture both the adult population and account for early retirement trends of the 1990s, during which many women in their early 40s chose early retirement schemes (Tunali et al., 2021). Similarly, in examining fertility outcomes, we focus on the same age group, aligning with the peak reproductive years during the 2000s in Türkiye. Finally, for educational outcomes, we adjust the age range according to the specific educational level being assessed. For middle school degree attainment, we include individuals aged 15 to 19. The lower age limit of 15 ensures that individuals are old enough to have completed middle school by the census date. The upper age limit of 19 restricts the sample to those who were at most ten years old in 1989. This ensures that they are influenced by the arrival of the immigrants for pursuing middle school, given that the middle school start age is typically 11. With similar considerations, we focus on 20 to 24-year-olds for assessing high school completion and 25 to 29-year-olds for college completion, matching the typical ages for completing these educational levels.

lower unemployment rates reported in the HLFS.

3.1 Descriptive Statistics

Table 1 presents the descriptive statistics for our outcomes of interest for the 1989 ethnic immigrant women (men) and native population using the 1990 census data conducted shortly after their arrival. We observe in Table 1 that 72% of ethnic Turkish women participated in the labor force upon their arrival to Turkiye, compared to just 20% of native Turkish women. Further, the employment sectors also display sharp differences across two groups of women, especially with manufacturing standing out. Table 1 shows that 66% of the immigrant women worked in the manufacturing sector upon their arrival in 1989, a sharp contrast to only 23% of their native counterparts. Native women, in contrast, have a much larger share in services and agriculture. Importantly, we observe no differences across native and ethnic Turkish men in the labor market outcomes, and there are no stark disparities in their employment sector. In essence, Table 1 illustrates that ethnic Turkish immigrant women have much higher employment and labor force participation rates, lower fertility, and higher educational attainment compared to native women upon their arrival to Türkiye, reflecting their pre-arrival gender norms regarding labor market behavior, family, and education precipitated by their prolonged exposure to the socialist regime in Bulgaria.

Table 2 presents descriptive statistics for our census sample, separately for the 1990 and 2000 waves. The fraction of women in the labor market increased from 19.6 to 28.7 percent from 1990 to 2000. Similarly, the fraction of women employed rose from 16.9 to 18.7 percent and the fraction of women employed in manufacturing increased from 3.9 to 4.3 percent. On the other hand, the fraction of men in the labor market remained quite similar, around 90% in both censuses. Consistent with these findings, the gender gap in the labor market within our sample narrows over time. Specifically, the gap in labor market participation rate decreases from 72 to 62 percentage points, the employment rate gap declines from 65 to 53 percentage points, and the gap in manufacturing employment rate reduces from 15 to 13 percentage points, respectively.[9] Notably, Table 2 shows a positive trend in education, with significant increases in high school and college graduation rates, rising from 28% to 44% and from 6% to 12%, respectively, over

[9]We note that these figures are for 18- to 39-year-old women and men in district centers. Therefore, they might be influenced by changes in the secular trends in education and rural-to-urban migration.

the decade. Additionally, Table 2 indicates a secular decline in fertility; the number of children per woman falls from 1.83 in 1990 to 1.46 in 2000.

4 Identification Method and Estimation

To assess the long-term effects of forced migration, resulting cultural shock, and horizontal cultural transmission between ethnic Turkish immigrant women and native women, we first estimate a difference-in-differences analysis. This method exploits the spatial distribution of ethnic Turkish immigrants at their time of arrival and the changes in economic and social outcomes of native women over two census periods. Since we use two waves of census data, we present our analysis as changes in the outcomes of interest from 1990 to 2000 as follows:

$$\Delta(Native\ Outcome)_{idt} = \alpha + \beta(Ethnic\ Turkish\ Immigrant/Native)_{id,90} + X_{id,90}\Gamma + \mu_i + u_{idt} \tag{1}$$

The unit of analysis in equation (1) is the 623 province and district centers according to the administrative classification in 1985. For each district d in province i in census year t, we compute the share among native women (men) who are a) employed, b) in the labor force, and c) employed in manufacturing for the sample of 18 to 39-year-olds, excluding all individuals born in Bulgaria. Each outcome is measured as the change in a given outcome between the 1990 and 2000 censuses. The control variables, $X_{id,90}$, include district-level controls including the shares of five age groups (18–19, 20–24, 25–29, 30–34, 35–39), six education groups (illiterate, less than primary, primary, junior high, high school, university graduates), and 9 sectors of employment in the labor force, as well as, log population in 1990. In equation (1), μ_i stands for province-fixed effects and u_{idt} is the error term.

As aforementioned, summary statistics in Table 2 show the time trends in our key outcomes. The province-level fixed effects in equation (1) account for province-specific time trends in outcomes between 1990 and 2000; therefore, the identifying variation in outcomes comes from district-center level changes within the same province between the two periods. The key param-

eter of interest in equation (1), β, quantifies the impact of the concentration of ethnic Turkish immigrant women among native women in 1990 on the changes in outcomes for native women from 1990 to 2000 across district centers in Türkiye. Since the 1989 flow accounts for all the ethnic Turkish immigrants who arrived in Türkiye within the last 5 years in the 1990 Census, our key parameter of interest essentially measures the effect of the 1989 forced migration of the ethnic Turkish women from Bulgaria and its impacts on native's socioeconomic outcomes a decade after their arrival.

We estimate equation (1) for the sample of native women and men separately. We also estimate equation (1) using a triple-difference specification where we define the outcome as the difference in mean outcomes of native women and men in district d in province i in year t. In this specification, the dependent variable is the change between 1990 and 2000 in the difference between the share of native Turkish women and the share of native men who are: a) employed, b) in the labor force, and c) employed in the manufacturing sector. We weight the district-level observations by $[1/(1/pop1990+1/pop2000)]$, where pop1990 and pop2000 refer to the population size in 1990 and 2000, respectively.[10] Standard errors are clustered at the level of the district to account for correlation in outcomes across census years.

The ethnic Turks arriving with the 1989 wave could have chosen the locations to settle based on some unobserved factors correlated with both our key variable of interest and the outcomes of interest. For example, they could have chosen locations with better labor market prospects conducive to labor force participation and employment growth of both men and women. Although our specification accounts for province-fixed effects, utilizing multiple waves of census data, we also use an instrumental-variable strategy to account for the potential endogeneity in the settlement of the 1989 ethnic Turkish immigrants. The instrument is defined as the ratio of ethnic Turkish immigrants in 1985 (those born in Bulgaria but residing in Türkiye in 1985) to natives (excluding all born in Bulgaria) in the adult sample (individuals 18 and above). Hence, the instrument captures the settlement patterns of earlier ethnic Turkish who arrived in Türkiye with the 1968 wave or earlier.

[10] Census data for 1990 and 2000 use different weights due to population changes. We, therefore, use a weighted average of the weights in the two survey years.

Our proposed instrument is motivated by historical settlement patterns of ethnic Turkish migrants from Bulgaria and state-led settlement policies. As discussed in Section 2.1, due to strict border control by the communist state in Bulgaria, the latest migration wave from Bulgaria was in 1968, and there was almost no migration from Bulgaria starting in the early 1970s for the next two decades until the massive migration of 1989, which is also corroborated by data from the 1985 census. Moreover, the Turkish government had a significant role in the settlement of earlier flows of ethnic Turkish migrants from Bulgaria. Hence, the initial location of the vast majority of immigrants from Bulgaria before 1989 was determined by the government and not by the decisions of immigrants.

Although some of the ethnic Turkish migrants arriving with the earlier waves might have resettled following their initial arrival, two aspects of these migration waves enhance the credibility of our instrument. First, we find a strong correlation between the settlement provinces of those who arrived in 1950-51 and their places of residence in 1985. The regression of the provincial shares of earlier ethnic Turkish migrants in 1985 on the provincial shares of earlier ethnic Turkish migrants who arrived during the 1950-51 wave yields an R2 of 0.72 in the sample of provinces with a share of ethnic Turkish migrants in 1985 greater than 0.01. This implies that most of the earlier ethnic Turkish immigrants stayed in their original settlement provinces, consequently shaping the settlement patterns of future migration flows from Bulgaria. This is not surprising given the state-led integration policies and housing campaigns. Second, the geographic dispersion of earlier or most recent ethnic Turkish migrants is not a strong predictor of internal migration in Türkiye, as shown in Table 11 later in the paper. Taken together, we use an instrument based on the historical settlement of the ethnic Turkish migrants that the government largely determined and persisted until the forced migration in 1989.

Aligned with historical records, the first-stage findings summarized in Appendix Table A1 show a strong and positive effect of the share of earlier ethnic Turkish immigrants in 1985 on the share of the most recent ethnic Turkish immigrant women in 1989 in a given district center. These strong first-stage results also hold for all sub-samples we focus on in our analysis. This finding that the 1989 ethnic Turkish migrants were significantly more likely to settle in districts

where prior waves of Bulgarian immigrants had settled as a result of state-led policies strongly supports the relevance of our instrument.

The assumption for the validity of our instrument is that, in the absence of the refugee shock, the trends in women's socioeconomic outcomes in district centers with high and low values of the instrument would have been the same, conditional on province-fixed effects and a set of covariates. In other words, the residual trends in the outcomes must be uncorrelated with the instrument. We provide evidence regarding the validity of this assumption by conducting placebo tests. In these tests, we treat the 1985 and 1990 census years as pre-shock periods and estimate the baseline specification using these censuses. It is comforting that the placebo exercises for all outcomes we study are economically and statistically insignificant (as discussed in more detail later), lending credence to the validity of our estimations.

5 Estimation Results

5.1 Labor Market Outcomes

Table 3 presents the OLS and 2SLS estimates regarding the impacts of the 1989 refugee shock on native women's and men's labor market outcomes a decade after their arrival. Panels (A) and (B) do it for the full sample of district centers, whereas panels (C) and (D) cover only urban district centers, defined as locations with a population above 20,000 by TurkStat. This restriction to urban district centers is crucial in our analysis of labor market outcomes because rural district centers are mostly agricultural. In addition, the female labor force participation rate is much higher in rural areas due to family farming. For instance, according to the 1989 Turkish Household Labor Force Survey, the female labor force participation rate was 55% in rural areas compared to only 18% in urban areas for the working-age population (15+). The urban restriction limits our analysis to 225 district centers, areas where the 1989 ethnic Turkish migrants are also more likely to reside.

For the full sample, Panel (A) of Table 3 reports the results for native women, while the results for native men are summarized in Panel B. Both the OLS and 2SLS estimates indicate

that a higher concentration of ethnic Turkish migrant women led to a significant improvement in the labor market outcomes of native women a decade later, while the estimated effects on native men are much smaller and statistically insignificant. Specifically, focusing on Panel A, our 2SLS estimates indicate that a one percentage point increase in the share of the recent ethnic Turkish migrant women in a given district brings about roughly a 0.6 percentage point increase in the employment rate of native women, 0.7 percentage point increase in their labor force participation rate, and 0.9 percentage point increase in the manufacturing employment rate of local women a decade later. The results from the sample of urban district centers presented in Panels C and D of Table 3 indicate that our findings are quantitatively and statistically comparable to the full sample.

Table 4 uses a triple-difference specification that takes gender- and time-differenced dependent variables (women—men) rather than only time-differenced ones (as in Table 3). The findings presented in Table 4 for the full sample demonstrate significant improvements in the labor force participation and employment rates for native women compared to native men in the same locality a decade after the arrival of refugees in 1989. According to the 2SLS estimates, a one-percentage-point increase in the refugee-to-native ratio increases women's employment rate by 0.6 percentage points more than men's and women's labor force participation rate by 0.75 percentage points more than men's. While the improvement in employment in manufacturing for native women relative to native men is also sizable, it is marginally statistically insignificant.

However, the improvement in women's employment in manufacturing vis-a-vis men becomes statistically significant when we take the sample of urban district centers—where the manufacturing sector constitutes a more integral part of the overall economy. As seen in the second panel of Table 4, a one-percentage-point increase in the refugee-to-native ratio increases women's employment in manufacturing by more than 0.4 percentage points and labor force participation rate by 0.75 percentage points more than men's. The increase in women's overall employment relative to men's is similar to the change in manufacturing employment but marginally statistically insignificant.

Next, we focus our analysis on regions of the country predominantly settled by ethnic Turkish

migrants. Panel (C) of Table 4 excludes eastern Türkiye (NUTS-1 regions 10 to 12), where a very small percentage of migrants settled, and panel (D) further restricts the geographical area to the western half of the country (NUTS-1 regions 1 to 6). In panels (C) and (D), the restriction on urban district centers is maintained due to the reasons discussed at the beginning of this section. Through these restrictions, we zoom into regions with a higher concentration of the 1989 ethnic Turkish migrants and locations where manufacturing is more important.

Our findings regarding the impact on manufacturing employment become even stronger when we make these regional restrictions. According to the 2SLS estimates, a one-percentage-point increase in the refugee-to-native ratio increases women's employment in manufacturing by 0.47 percentage points more than men's in panel (C) and by almost 0.6 percentage points more than men's in panel (D) with the most restricted sample. The 2SLS estimates regarding the impact on labor force participation and employment for the regionally restricted samples in panels (C) and (D) are similar to those for the total urban district center sample in panel (B), except for the estimate about the impact on employment in panel (D).

Overall, the findings in Table 3 and Table 4 show that a decade after the influx of ethnic Turkish migrants, exposure to ethnic Turkish women led to increased labor market engagement and higher employment rates among local women. This effect is particularly evident in the manufacturing sector, where many ethnic Turkish women began working upon their arrival. Further, these gender-specific labor market impacts are most pronounced in western Türkiye, where manufacturing is the dominant industry but traditionally employs fewer women.

These estimated gender-specific impacts on the labor market engagement of native women, particularly their increased employment in manufacturing a decade after ethnic Turks arrived, may be arising because of the nature of the manufacturing jobs and the characteristics of local women on the margin. Manufacturing jobs typically require mid-level skills. Therefore, local women who are attracted to the labor market through their exposure to ethnic Turkish migrant women's labor market behavior are also expected to possess mid-level education but were not previously active in the labor market.[11] The heterogeneity results presented later in Table 12

[11] Dayioglu and Kirdar (2010) show that women with higher education already participated in the labor market before the refugee shock.

indeed demonstrate that the estimated labor market effects are mostly driven by the changes in the labor market behavior of native women with at least a middle school diploma. This reinforces the notion that native women who have completed compulsory education and acquired the necessary skills for manufacturing jobs are also more likely to be influenced by the traditional "male breadwinner model" and related gender norms, which often view the labor market, particularly manufacturing jobs, as a predominantly male domain. Thus, through social learning and the horizontal transmission of more progressive gender norms from interacting with their ethnic Turkish neighbors, local native women likely saw an increase in employment in male-dominated sectors like manufacturing, as these evolving norms aligned with their skill levels.

5.1.1 Demand Shocks in the Product Market Potentially Favoring Women

An alternative explanation to our findings regarding women's improved employment outcomes is a potential demand-side effect. The refugee shock increases the product demand locally. For instance, we would expect the local demand for products in the services sector to increase in the refugee-dense regions. This positive demand shock in the product market would translate into higher production and, hence, job creation. If this job creation favors women more than men, the resulting outcome would be consistent with our findings. However, our key finding that makes this mechanism unlikely is the positive employment effects in the manufacturing sector for women. Since the manufacturing sector is tradable, we would not expect an increase in locally produced manufacturing products.

5.1.2 Labor Demand Shocks Potentially Favoring Women

Another alternative to the cultural transmission explanation could be a shift in the labor demand curve that is more favorable to women than men in districts where the ethnic Turkish settled in 1989. The arrival of ethnic Turkish women in 1989 could have pushed firms to adjust in several ways. First, it could have changed production costs as the relative abundance of different factors of production and their prices change. This could also change firms' production scale and encourage new firms' establishment. The ethnic Turkish refugees also bring a different set of skills, which could increase productivity more in certain sectors than others. For instance, Table

1 shows that ethnic Turkish women and men are much more likely to work in manufacturing than natives after arriving in Türkiye. Suppose that within the manufacturing sector, the influx of ethnic Turkish in 1989 increased productivity more in sectors that typically employ more female workers, such as textiles. Among natives in 1990, 30% of textile workers were female compared to 8% in other sectors. In addition, the fraction working in textiles among manufacturing workers was slightly higher for ethnic Turkish compared to natives in 1990 (31.2% vs. 28.7% for men and 71.1% vs. 66.0% for women). The higher propensity to work in textiles for ethnic Turkish might imply a higher productivity shift in this sector. Furthermore, exposure to ethnic Turkish women in the workplace and observing their productivity may have significantly altered perceptions of female productivity, leading firms to hire more women, particularly in sectors with a higher female presence before the arrival of ethnic Turks in 1989.

We, therefore, investigate whether the influx of semi-skilled ethnic Turkish women in 1989 indeed boosted the production of textiles more than other sectors by separately estimating the impact of the refugee shock on total employment (men and women) in textiles and other manufacturing sectors, respectively. Table 5 presents the impact of the 1989 ethnic Turkish concentration on total employment in the aggregate manufacturing sector (which aggregates all sub-sectors categorized under manufacturing), textiles, and manufacturing other than textiles. We find that the magnitudes of the positive impacts on textiles and manufacturing other than textiles are similar. Moreover, for the full sample, while the coefficient for manufacturing other than textiles is statistically significant at the 5 percent level, it ceases to be statistically significant at conventional levels when we exclusively focus on textiles. Essentially, these results indicate that the influx of ethnic Turkish in 1989 did not boost the textile sector—which employs relatively more women—more than the other manufacturing sectors, thereby suggesting that the differential increase in female labor demand following the arrival of ethnic Turkish women is unlikely the factor explaining our results. This result supports that the shifts in gender norms and attitudes related to work and family are potential mediators of improvements in native women's employment outcomes, which we will investigate later in the paper.

5.2 Fertility Outcomes

The effect of ethnic Turkish migrant women on native women may extend beyond its labor market impact. To investigate this possibility, we first estimate the effects on the fertility behavior of native women. In this analysis, we focus on the total number of births a woman has experienced by the time of the census. This is motivated by the fact that almost all women marry in Türkiye and approximately 98% have at least one child (Kirdar et al., 2018). The arrival of ethnic Turkish women may influence the fertility of locals through two channels. First, the significant increase in the labor market attachment and employment among local native women following the influx of refugees raises the opportunity cost of children. In addition, as summarized in Table 2, ethnic Turkish women also have lower fertility, which may have also changed the desired number of children among native women through their interaction and socialization with their ethnic Turkish neighbors.

Table 6 estimates these fertility effects for the sample of 18- to 39-year-old native women, where the dependent variable is the change between 1990 and 2000 in the number of live births per woman. The table reports results for the full sample and subsamples based on the geographic restrictions described earlier. The results indicate a significant and sizable reduction in fertility a decade after the refugee shock. Specifically, the 2SLS estimates in column (2) for the full sample reveal that when the refugee-to-native ratio increases by ten percentage points, the number of births per native woman declines by about 0.1 a decade later. These findings suggest that the arrival of progressive ethnic Turkish women had an impact on the fertility behavior of native women, extending their effects beyond labor market outcomes.

5.3 Schooling Outcomes

In addition to fertility behavior, the influx of ethnic Turkish women could also potentially influence the educational choices of native women. For instance, the presence of more educated ethnic Turkish women within their communities might inspire younger native women to pursue higher levels of education, reflecting evolving societal norms. Conversely, aspirations for increased education may diminish as local women find greater acceptance of employment in

manufacturing, which may not necessitate advanced educational qualifications. To assess the impacts on schooling outcomes, we define the dependent variable as the change between 1990 and 2000 in the share of native women in each district who are: a) middle school graduates, b) high school graduates, and c) college graduates. Table 7 presents the OLS and 2SLS results for these schooling levels, for the full sample and subsamples based on geographical restrictions.[12] There is no evidence of an impact of the 1989 refugee shock on native women's educational attainment at any level. In fact, the estimated coefficients for middle school and college completion are close to zero. These findings imply that the contrasting mechanisms through which ethnic Turkish women might influence the educational attainment of native women potentially counterbalance each other.

5.4 Identification Checks

5.4.1 Placebo Tests of the Key Identification Assumption

The validity of our instrument relies on the assumption that conditional on province-fixed effects and a set of covariates, the trends in the outcome variables (labor market, fertility, and schooling outcomes) in district centers with high and low values of the instrument would have been the same in the absence of the refugee shock. In this section, we conduct several placebo exercises to provide supporting evidence on our identification assumption. Given that the 1989 refugee flow occurred toward the latter part of the same year, primarily during the period from May 26 to August 21, 1989, we do not anticipate any discernible influence on the outcomes of native Turkish women resulting from evolving societal norms within a single year by 1990. Thus, by employing micro-level data from the 1985 and 1990 Turkish censuses and treating both as pre-periods, we redefine our dependent variable as the change in outcomes between 1985 and 1990, as opposed to the period between 1990 and 2000. The core definition of the key independent variable, the 1989 ethnic Turkish women share, remains unchanged, representing the magnitude of the actual shock experienced, and our analytical specifications remain consistent with the baseline specification. In the absence of any pre-trends in outcomes that are correlated with the

[12]The analysis limits the sample to 15- to 19-year-olds when examining middle school completion, 20- to 24-year-olds for high school graduation, and 25- to 29-year-olds for college degrees.

1989 refugee shock, we expect these placebo experiments to yield null effects for our outcomes of interest.

Table 8 performs a placebo test on the impact of labor market outcomes for both the full and urban samples, as previously analyzed in Table 3. For Panel A (B), the dependent variable measures the change from 1985 to 1990 in the share of native Turkish women (men) in each district who are a) employed, b) in the labor force, and c) employed in manufacturing. The analysis is similarly conducted for the urban sample in the bottom two panels. The 2SLS estimates in all panels are much smaller than the corresponding estimates in Table 3, and all of them are statistically insignificant.

The placebo triple-difference analysis presented in Table 9 further supports these null findings. Similar to previous placebo checks, in the placebo exercise summarized in Table 9, we define the dependent variable as the change between 1985 and 1990 in the difference between the share of native women and the share of native men who are: a) employed, b) in the labor force, and c) employed in manufacturing. The results continue to show similar null effects, reinforcing our confidence in the validity of our estimations and confirming that our findings are not driven by differential pre-trends in outcomes.

In addition, we perform several placebo tests for fertility outcomes. In the first placebo experiment, we focus on 40- to 59-year-old native women as the treated group. We do not expect any fertility effect of ethnic Turkish exposure on this age group because most native women in this age range are expected to have completed their fertility. The 2SLS coefficients presented in the top panel of Table 10 indicate no reduction in fertility; in fact, compared to Table 6, the coefficients switch signs and turn insignificant. In Panel B of Table 10, we conducted another robustness check for fertility using data from the 1985 and 1990 Censuses. In this placebo analysis, the dependent variable is now defined as the change between 1985 and 1990 in the number of live births per woman among 18- to 39-year-old native women. This placebo exercise reveals no evidence of an impact, and all point estimates are very close to zero.

Finally, Appendix Table A2 reports the results of placebo tests for native women's schooling outcomes using the 1985 and 1990 censuses. Similarly, we find no statistically significant impact

on any schooling outcomes for either the full sample or any of the subsamples in this table. Overall, the results of the placebo tests in Tables 8 to 10 and Appendix Table A2 provide strong support for our identification assumption and validity of our instrument.

5.4.2 The Critical Role of Identification via Variation within Provinces

In our analysis, we include the province-level fixed effects; thereby, our estimations account for province-level changes in outcomes between 1990 and 2000. Hence, the identifying variation both in difference-in-differences and IV specification comes from comparing districts (within a province) with similar socioeconomic conditions; thereby accounting for common province-level trends in outcomes of interest between two censuses. Nevertheless, careful consideration of the potential time trends in our outcome variables over time is still important in our setting. For an outcome with national time trends, we could also expect regional time trends to differ markedly.[13] Appendix Tables A3 to A6 show the results of the placebo tests from Tables 8 to 10 and Appendix Table A2 without including province-fixed effects. Comparing these results with those in Tables 8 to 10 highlights the importance of accounting for differential time trends across provinces by controlling for province dummies in our analysis.

Further, there may be concerns about a potential lack of variation in the concentration of ethnic Turks across districts within a given province. However, state-led settlement policies for ethnic Turks from Bulgaria have created significant variation in their presence across districts within the same province, addressing this concern. For instance, among the 8 district centers of Tekirdağ province in northwestern Türkiye, the fraction of repatriates in the population is above 15 percent for one, between 10 and 15 for two, between 5 and 10 for one, between 1 and 5 for two, and under 1 for the last two.

[13] For instance, for the fertility outcome with a national downward trend, the downward trend in Eastern Türkiye (where the initial levels are higher) is stronger. In fact, from 1990 to 2000, the number of live births per woman declined by 0.25 in the district centers of NUTS-1 region 2 (northwestern Türkiye, which houses many ethnic Turkish migrants) but by more than 0.5 in each of the district centers of NUTS-1 regions 10 to 12 (eastern Türkiye). Similar regional differences also exist in labor force participation trends. For instance, from 1990 to 2000, the female labor force participation rate increased by 11.5 percentage points (53 percent) in the district centers of western Türkiye (NUTS-1 regions 1 to 4) compared to 6.3 percentage points (29 percent) in northern Türkiye (NUTS-1 regions 8 and 9).

5.4.3 Internal Migration

Internal migration in Türkiye has some significance; in 1990, 19.9% of 18–39-year-old individuals living in the district centers in our sample did not reside in the same district center five years ago. Hence, a potential concern is that the influx of the recent ethnic Turks might have discouraged other potential migrants from relocating, leading to higher overall employment and increased participation in manufacturing jobs among native women ten years later.

We, therefore, investigate whether the arrival of ethnic Turks in 1989 influenced the migration decisions of natives in other areas. This analysis defines movers as those who did not reside in the same district center five years ago. Therefore, these movers encompass both internal and international migrants, although international migration was relatively limited during this period. Table 11 shows the effect of the 1989 refugee shock on the change in the fraction of movers from 1990 to 2000 in a given district, using the same specification as in the previous tables. The results indicate a positive but marginally significant (at the 10 percent level) 2SLS coefficient for the full sample. However, for the urban sample and for the sample restricted to the western half of the country (where the majority of the ethnic Turkish settled), the point estimates cease to be economically and statistically significant. In essence, we find weak evidence, if any, of an increase in other migrants to the areas populated by the influx of ethnic Turkish migrants in 1989. While, as aforementioned, we might have expected the refugee shock to discourage internal migration to these areas, our findings suggest the opposite.

Further, we note that differential internal migration based on ethnic Turkish concentration in a district would only be a concern for our findings if other migrants were more likely to substitute local men rather than local women, potentially narrowing the gender gaps in labor market outcomes. However, this is unlikely since internal migrants, on average, are less-skilled individuals, for whom it is easier to substitute young and female workers than prime-aged men. In fact, in the context of recent Syrian migrants in Türkiye, Aksu et al. (2022) find that the impact of Syrian refugees on native employment is much more negative for women than for men. If internal migration were driving women out of the labor force by replacing them with young migrant men, we would expect to see a decline in female labor participation. However, our

results suggest the opposite, with a significant increase in female labor market participation and employment in manufacturing. Therefore, it is unlikely that internal migration poses a threat to the causal interpretation of our results.

5.5 Heterogeneity by Schooling Level

In this section, we examine the impact of the arrival of ethnic Turkish women in 1989 on native women's employment, labor force participation, and employment in manufacturing separately for three educational groups: i) primary school degree or lower education, ii) middle school or high school degree, and iii) college degree. Educational attainment figures in Table 1 indicate that while almost 70 percent of native women are in the first group, only 8 percent of ethnic Turkish women are. A substantial share of ethnic Turkish women (almost 85 percent) belong to the second group compared to a quarter of native women. Finally, the share of college graduates is more comparable across ethnic Turkish women (7.3%) and native women (6.1%).

Table 12 replicates the main results of the 1989 refugee shock on the labor market outcomes for native women by education level.[14] We find that the impact is significantly more pronounced for native women with middle school or high school degrees. This is the education group that most ethnic Turkish women also belong to (almost 85 percent, as stated above). Therefore, the estimation results are highly consistent with our argument of horizontal cultural transmission, in which native women can strongly associate with their ethnic Turkish neighbors and friends who have similar educational attainment. For native women who are college graduates, the results are more mixed. While the impact on employment is large and positive, it is not statistically significant at conventional levels. Similarly, there is no evidence of an impact on labor market participation of college-educated women, which is not a surprise because the participation rate of this group is already quite high (Dayioglu and Kirdar, 2010). However, we also observe a significant and positive impact on employment in manufacturing for this group. This suggests that the substantial presence of ethnic Turkish women in the male-dominated manufacturing sector may have had extensive effects on gender representation across various educational levels

[14]Here, we provide the results based on the urban sample because when we divide the sample by educational attainment, few observations remain for some education groups (particularly for college graduates) in small district centers.

in these industries.

In contrast, we find no evidence suggesting any labor market impacts among native women with primary or lower levels of education. This group likely has much fewer role models of the same education group to interact with and lacks the skills needed for employment in manufacturing, both of which may hinder social learning. Taken together, the heterogeneity results in Table 12 demonstrate that the arrival of ethnic Turkish women, who are strongly attached to the labor market and predominantly employed in male-dominated manufacturing, has encouraged similarly educated native women to join the workforce, particularly in manufacturing.

6 Mechanisms

Several factors may explain the significant increase in labor supply and employment in manufacturing and reduced fertility rates among native Turkish women a decade after the influx of ethnic Turkish refugees. Social learning and horizontal cultural transmission between groups with a similar language and religion but with different cultural and gender norms could be one of the potential mediators that explain our results. Alternatively, there might have been a shift in the labor demand favoring women over men after the arrival of the ethnic Turkish women in the regions ethnic Turkish migrants settled in 1989. However, as shown earlier in Table 5, we find no evidence of increased labor demand or differential female employment in sectors predominantly employing women in districts with a higher concentration of ethnic Turkish women. Therefore, in the remainder of this section, we focus on shifts in gender norms as a potential channel for explaining our results.

Earlier work by Fogli and Veldkamp (2011) and Miho et al. (2024) suggest that interactions between groups sharing language and religion but differing in cultural norms can build trust and facilitate the transmission of cultural attitudes over time. In our context, ongoing interactions between ethnic Turkish and native women as neighbors and friends could expose native women to the more progressive labor market behaviors and employment sectors typical of ethnic Turkish women. Our findings also indicate a significant shift in fertility behavior among native women in regions with a higher influx of ethnic Turkish immigrants, pointing to broader changes in

marriage age, family planning decisions, and attitudes toward female autonomy.

This exposure may lead to social learning, reducing the stigma associated with breaking traditional gender roles. For example, observing their ethnic Turkish neighbors' labor market behavior could have altered native women's perceptions of safety concerns related to working and reduced uncertainty about the employment environment. Additionally, witnessing the autonomy and economic freedom gained by working ethnic Turkish women may have further encouraged native women to enter the workforce following the arrival of the ethnic Turkish community in their neighborhoods. Over time, these shifts could lead to increased workforce participation among native women and changes in their roles at home, aligning more closely with the progressive norms observed among ethnic Turkish women, as postulated by Akerlof and Kranton (2000).

We examine how the presence of ethnic Turkish migrant women might influence gender norms in these regions using detailed data from the World Value Survey (WVS) conducted in Türkiye in 1990 and 1996. The WVS provides comprehensive insights into attitudes toward work and job priority for men, as well as indices such as the Autonomy Index, which assesses perceptions of personal autonomy, and the Equality Index, which measures attitudes toward gender equality. These factors are closely linked to women's labor market participation and fertility decisions, particularly in traditional and religiously conservative societies (Bertrand, 2020; Fortin, 2015; Fernandez, 2013).

Table 13 presents the estimation results for changes in cultural values, beliefs, and societal norms among native women, using the same specification as the previous analysis. Results summarized in Panel A indicate that native women in districts with a higher presence of ethnic Turkish women are more likely to view work as important and are less supportive of male job priority after the arrival of ethnic Turkish women. Specifically, a 1 percentage point increase in the share of ethnic Turkish women in a province results in an 8 percentage point rise in the importance placed on work and a 10 percentage point decline in the support for male job priority among women. A larger share of recent ethnic Turkish women also increases the autonomy index score among native women. However, the data does not show a statistically significant result

regarding whether working mothers' relationships with their children can be as warm and secure as those of non-working mothers.

Panel B repeats the same analysis for men and demonstrates that the arrival of ethnic Turkish women does not significantly impact native men's perceptions of the importance of work, their support for male job priority, or their scores on the equality and autonomy indices. However, we find that native men are less likely to agree that a working mother can establish a warm and secure relationship with her children as much as a non-working mother. These findings suggest that the improvement in local native women's labor market outcomes and fertility behavior is primarily driven by changes in women's attitudes rather than shifts in men's perceptions of working women. Overall, the results in Table 13 suggest that social learning and cultural transmission from ethnic Turkish women have led to changes in native women's beliefs and societal norms. These shifts have contributed to increased labor market participation, greater employment in the male-dominated manufacturing sector, and reduced fertility—illustrating how cultural changes can interact with economic forces to reshape traditional and conservative societies.

7 Conclusion

This paper provides causal evidence on how horizontal cultural transmission of gender norms influences women's labor market participation, fertility behaviors, and educational attainment. We explore the forced migration of nearly half a million ethnic Turks from Bulgaria to Türkiye in 1989, following the collapse of the Iron Curtain, which led to one of the most rapid demographic shifts in late 20th-century Europe. This sudden influx exposed a traditionally conservative Turkish society to refugees who shared the same language and religious heritage but brought markedly progressive gender norms and had significantly higher labor force participation and employment rates compared to native women, particularly in the male-dominated manufacturing sector.

We exploit the plausibly exogenous settlement patterns of earlier ethnic Turkish migrants from Bulgaria, determined by the Turkish government and supported by state-led housing cam-

paigns, to identify the causal effects of the 1989 refugee shock on native women's socioeconomic outcomes a decade later. Our results reveal a significant increase in labor force participation and employment among native women in regions with a higher share of ethnic Turkish migrant women a decade later, both in absolute terms and relative to men in the same districts. These employment effects are particularly strong in the tradable manufacturing sector, where ethnic Turkish immigrant women had a notable presence upon arrival. Additionally, we find a significant reduction in fertility among native women exposed to these migrants, reflecting the fertility behavior of ethnic Turkish migrants. Our findings indicate no significant impact on labor market attachment or sectoral choices among men, nor do they suggest any effect on schooling for either gender.

Our findings regarding the positive employment effects in the manufacturing sector for native women are critical. Although manufacturing has traditionally been a male-dominated sector, ethnic Turkish immigrant women predominantly began working in this sector upon arrival. Importantly, these positive labor market effects demonstrate that as ethnic Turkish migrant women integrated into the Turkish labor market and started working in manufacturing, they boosted native women's labor market attachment as well as employment within the same sector (i.e., manufacturing). In addition, the improvement in native women's labor market attachment was particularly strong for groups with similar educational attainment to ethnic Turkish migrants. The common language and religion between ethnic and native Turkish women, which fosters trust and facilitates cultural exchange, bolstered the social learning and cultural transmission between the two groups. (Miho et al., 2024; Giuliano and Tabellini, 2020).

Our results demonstrate that an external shock to the social and economic environment can facilitate the horizontal cultural transmission of progressive gender norms in a developing country, traditionally characterized by conservative gender values. This transmission has furthered female emancipation, increased female labor market engagement, and reduced fertility among native women. Our findings present one of the first causal evidence in the literature on the malleability of gender norms under exogenous cultural shifts in a context with entrenched cultural norms restricting women's participation in both labor markets and the public sphere.

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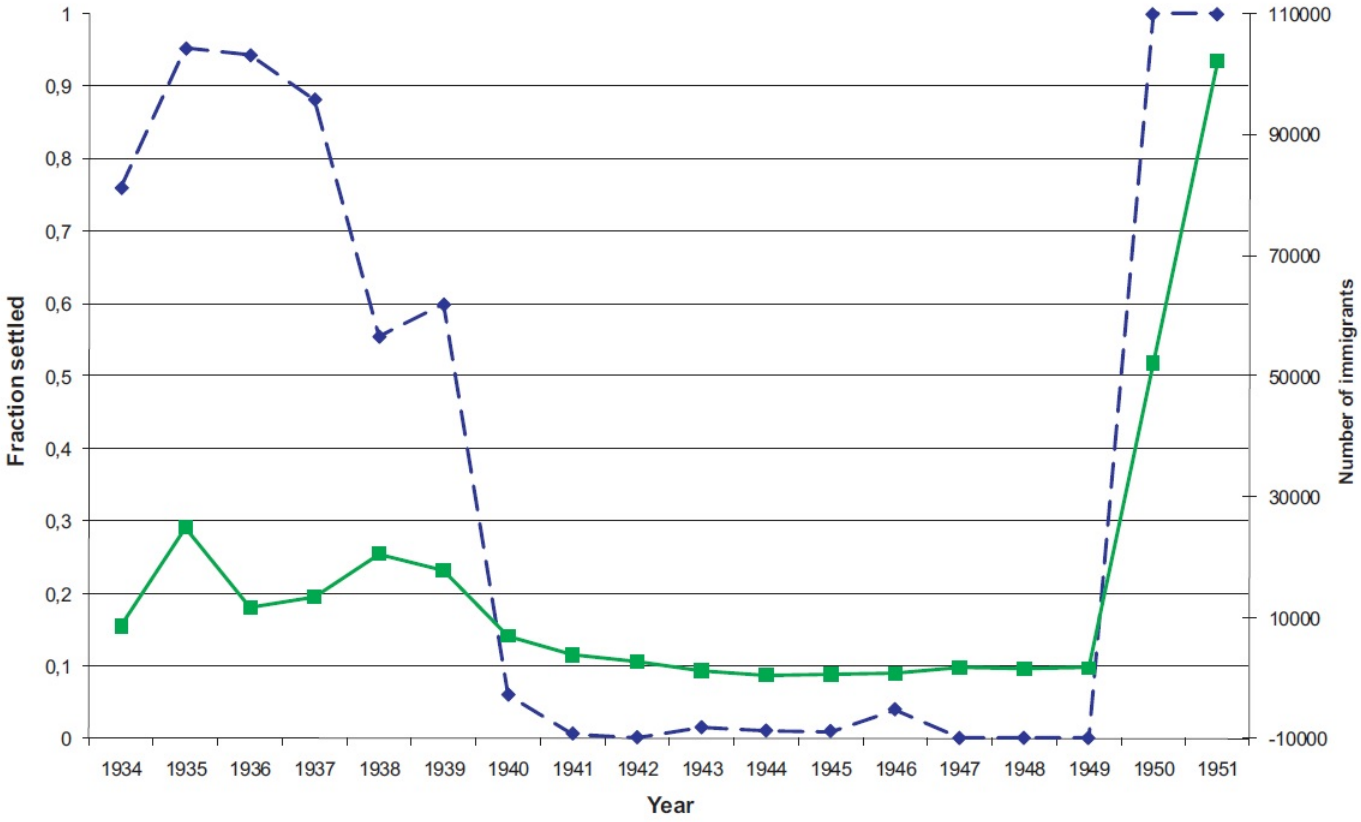
Figure 1: Immigrant flows from Bulgaria 1934–1951.



Notes: The dashed line represents the "Fraction settled" while the solid line corresponds to the "Number of immigrants." Data on the migrants who were settled by the state is accessible for the period between 1934 and 1960. The majority of the 1968 cohort, who arrived as part of the family reunification agreement, were not officially accommodated by the state, although specific figures are unavailable. Similarly, information regarding the settlement of the 1989 cohort is also unknown. Migration from Bulgaria significantly declined after 1951, except for the 1968 and 1989 flows. A small number of migrants may have left the country illegally, but exact numbers are not provided.
Source: Geray (1962), Türkiye'den ve Türkiye'ye Göçler, Ankara.

Figure 2: 1989 Ethnic Turkish to Native Turkish in 1990

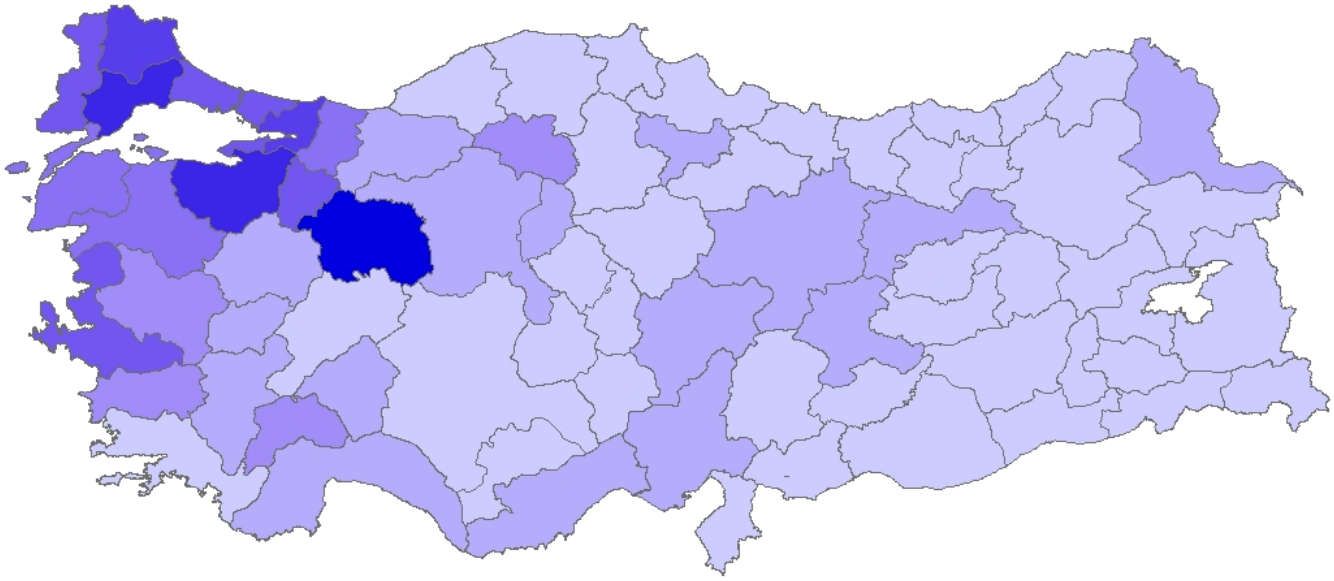
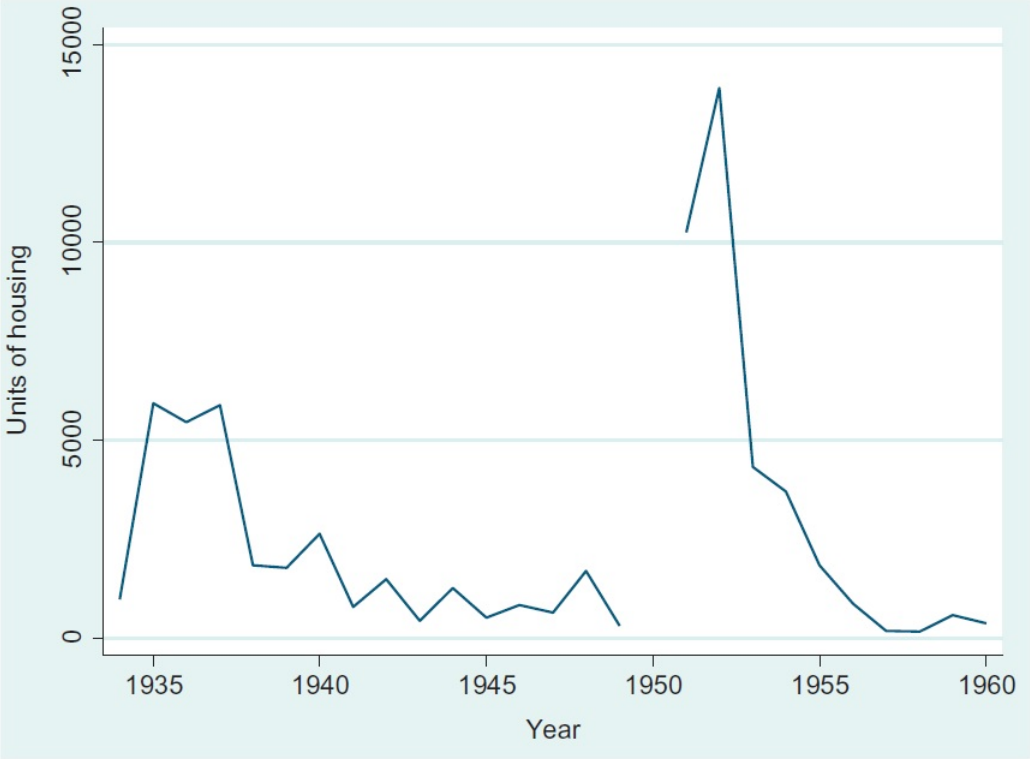


Figure 3: Housing construction for immigrants, 1934–1960.



Notes: Data for 1950 is unavailable. *Source:* Geray (1962), Türkiye'den ve Türkiye'ye Göçler, Ankara.

Table 1: Ethnic Turkish vs Native Turkish Samples

	Women		Men	
	1989 Ethnic Turkish	Natives	1989 Ethnic Turkish	Natives
Share Employed	0.683	0.169	0.875	0.819
Share in Labor Force	0.715	0.196	0.966	0.918
Share Employed in the Labor Force	0.956	0.862	0.906	0.892
Sector of Employment				
Agriculture	0.013	0.100	0.010	0.046
Mining and Quarrying	0.000	0.001	0.004	0.007
Manufacturing	0.663	0.229	0.500	0.223
Electricity, Gas, and Water	0.001	0.004	0.002	0.008
Construction	0.004	0.006	0.149	0.104
Wholesale and Retail Trade, Restaurants, Hotels	0.100	0.085	0.105	0.168
Transportation, Communications, and Storage	0.004	0.031	0.077	0.071
Financial Institutions	0.031	0.127	0.026	0.045
Community, Social, and Personal Services	0.173	0.406	0.115	0.316
Unspecified Activities	0.010	0.012	0.012	0.012
Number of Births	1.488	1.829	–	–
Education				
Share Primary School Degree or more	0.980	0.839	0.976	0.958
Share Middle School Degree or more	0.919	0.308	0.946	0.461
Share High School Degree or more	0.521	0.220	0.705	0.327
Share College Degree or more	0.073	0.061	0.068	0.121

Notes: The sample is restricted to 18- to 39-year-olds living in all 623 district centers (according to the 1985 classification) in the 1990 Türkiye Census, except in the calculations of shares with high school and college degrees. The sample is restricted to 20- to 39-year-olds in the share with a high school degree and to 25- to 39-year-old individuals in the share with a college degree.

Table 2: Descriptive Statistics

	1990 Census				2000 Census			
	Mean	SD	Min	Max	Mean	SD	Min	Max
A) Labor Market Outcomes								
Share Women Employed	0.169	0.065	0.000	0.646	0.187	0.082	0.000	0.482
Share Women in the Labor Market	0.196	0.067	0.000	0.677	0.287	0.090	0.026	0.643
Share Women in Manufacturing	0.039	0.030	0.000	0.432	0.043	0.038	0.000	0.266
Share Men Employed	0.817	0.063	0.504	1.000	0.718	0.105	0.253	0.946
Share Men in the Labor Market	0.917	0.031	0.609	1.000	0.902	0.042	0.473	1.000
Share Men in Manufacturing	0.185	0.096	0.000	0.505	0.173	0.097	0.000	0.464
(Share Women - Share Men) Employed	-0.648	0.071	-0.972	-0.137	-0.531	0.074	-0.866	-0.131
(Share Women - Share Men) in Labor Market	-0.721	0.077	-1.000	-0.275	-0.615	0.085	-0.900	-0.236
(Share Women - Share Men) in Manufacturing	-0.146	0.079	-0.433	0.238	-0.131	0.071	-0.383	0.167
B) Fertility Outcomes								
Number of Children	1.834	0.379	1.032	3.755	1.459	0.295	0.825	3.156
C) Schooling Outcomes								
Middle School Degree	0.426	0.135	0.000	1.000	0.543	0.136	0.000	1.000
High School Degree	0.276	0.098	0.000	0.800	0.442	0.124	0.000	1.000
College Degree	0.057	0.033	0.000	0.286	0.122	0.051	0.000	0.500

Notes: The data come from the 1990 and 2000 censuses. The samples in panels (B) and (C) include only women. The sample is restricted to 18- to 39-year-olds in panels (A) and (B). In panel (C), the sample is restricted to 15- to 19-year-olds for the middle school degree variable, 20- to 24-year-olds for the high school degree variable, and 25- to 29-year-olds for the college degree variable. The sample is further restricted to individuals living in district centers, and the individual-level data are aggregated to district center-level data. The unit of observation is the district center, and the number of observations is 623. District-level observations are weighted by $1/(1/\text{pop}(1990) + 1/\text{pop}(2000))$.

Table 3: The Long-term Labor Market Impact of the 1989 Refugee Shock on Native Population by Gender

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Panel A: Impact on Native Turkish Women aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.459**	0.574**	0.545***	0.713**	0.884***	0.922***
in 1990 among Women aged 18-39	(0.206)	(0.267)	(0.210)	(0.292)	(0.173)	(0.246)
Observations	623	623	623	623	623	623
R^2	0.685	0.684	0.648	0.648	0.637	0.637
Panel B: Impact on Native Turkish Men aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.031	0.185	0.164	0.248	0.842**	0.510
in 1990 among Men aged 18-39	(0.230)	(0.272)	(0.137)	(0.176)	(0.370)	(0.374)
Observations	623	623	623	623	623	623
R^2	0.627	0.627	0.537	0.536	0.555	0.551
Urban Areas (Population above 20,000)						
Panel C: Impact on Native Turkish Women aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.590**	0.616***	0.665**	0.739**	0.850***	0.712***
in 1990 among Women aged 18-39	(0.254)	(0.223)	(0.287)	(0.289)	(0.210)	(0.213)
Observations	225	225	225	225	225	225
R^2	0.846	0.846	0.810	0.810	0.791	0.790
Panel D: Impact on Native Turkish Men aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.281	0.255	0.200	0.228	0.868*	0.318
in 1990 among Men aged 18-39	(0.318)	(0.309)	(0.221)	(0.254)	(0.502)	(0.425)
Observations	225	225	225	225	225	225
R^2	0.79	0.79	0.769	0.769	0.668	0.660

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. The sample is further restricted to women in panel (A) and (C) and to men in panel (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels (A) and (B) and 225 province and district centers with populations above 20,000 in Panels (C) and (D) based on the administrative classification in 1985. b) In panels A and C (B and D), the dependent variable represents the changes from 1990 to 2000 in the proportion of native Turkish women (men) in each district who are: a) employed, b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of Ethnic Turkish migrants who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turks—to native Turks (excluding both the 1989 ethnic Turks and the ethnic Turks arriving in earlier waves) in the sample of 18 to 39-year-old women (men). In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 4: The Long-term Impact of the 1989 Refugee Shock on Gender-Differenced Labor Market Outcomes (Women - Men)

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.419*	0.607**	0.566***	0.750***	-0.113	0.350
	(0.242)	(0.259)	(0.183)	(0.232)	(0.262)	(0.268)
Observations	623	623	623	623	623	623
R^2	0.442	0.442	0.491	0.49	0.402	0.394
Urban Areas (Population above 20,000)						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.331	0.434	0.613**	0.751***	-0.078	0.426*
	(0.359)	(0.286)	(0.277)	(0.249)	(0.316)	(0.250)
Observations	225	225	225	225	225	225
R^2	0.653	0.652	0.656	0.656	0.560	0.551
NUTS1 $\leq$ 9 (Excluding Eastern Türkiye)						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.456	0.507	0.660^{**}	0.827^{***}	-0.064	0.470^{*}
	(0.373)	(0.318)	(0.297)	(0.267)	(0.324)	(0.257)
Observations	176	176	176	176	176	176
R^2	0.565	0.565	0.644	0.643	0.566	0.556
NUTS1 $\leq$ 6 (Western half of Türkiye)						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.192	0.099	0.569^{*}	0.690^{**}	0.115	0.586^{**}
	(0.422)	(0.373)	(0.338)	(0.309)	(0.334)	(0.285)
Observations	120	120	120	120	120	120
R^2	0.589	0.589	0.659	0.659	0.579	0.569

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. The sample is further restricted to women in panels (A) and (C) and to men in panels (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels (A) and (B) and 225 province and district centers with populations above 20,000 in Panels (C) and (D) based on the administrative classification in 1985. b) In panels A and C (B and D), the dependent variable represents the changes from 1990 to 2000 in the proportion of native Turkish women (men) in each district who are: a) employed, b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of Ethnic Turkish migrants who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turks—to native Turks (excluding both the 1989 ethnic Turks and the ethnic Turks arriving in earlier waves) in the sample of 18 to 39-year-old women (men).In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 5: Examining Potential Labor Demand Shifts: The Long-term Impact of the 1989 Refugee Shock on Sector-Specific Total Employment

	Employed in Manufacturing		Employed in Textiles		Employed in Manufacturing other than Textiles	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.759***	0.641**	0.458*	0.344	0.301**	0.296**
	(0.246)	(0.273)	(0.248)	(0.306)	(0.119)	(0.142)
Observations	623	623	623	623	623	623
R^2	0.580	0.579	0.670	0.669	0.437	0.437
Urban Areas						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.812**	0.456	0.475	0.198	0.337**	0.258
	(0.339)	(0.298)	(0.341)	(0.350)	(0.169)	(0.171)
Observations	225	225	225	225	225	225
R^2	0.708	0.701	0.772	0.767	0.598	0.597

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable is the change between 1990 and 2000 in the share of native men and women in each district who are employed in a) manufacturing, b) textiles, and c) manufacturing other than textiles. The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. Both OLS and 2SLS regressions are run. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 6: Impact of the 1989 Refugee Shock on Women's Fertility: Number of Live Births

	Full Sample		NUTS1 $\leq$ 9		NUTS1 $\leq$ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Ethnic Turkish to Natives	-0.995*	-1.138**	-0.930	-1.077*	-0.830	-0.942*
in 1990 among Women aged 18-39	(0.554)	(0.566)	(0.573)	(0.577)	(0.553)	(0.562))
Observations	623	623	465	465	289	289
R^2	0.496	0.496	0.433	0.433	0.419	0.419

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish women. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable is the number of live births per woman. The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to Native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 7: The Long-term Impact of the 1989 Refugee Shock on Women's Schooling Outcomes

	Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Full Sample						
Ratio of 1989 Ethnic Turkish to Natives	-0.576	-0.017	-0.280	-0.503	-0.102	-0.088
in 1990 among Women aged 18-39	(0.548)	(0.511)	(0.446)	(0.441)	(0.236)	(0.236)
Observations	621	621	622	622	623	623
R^2	0.346	0.345	0.341	0.341	0.185	0.185
Panel B: NUTS1 $\leq$ 9 (Excluding Eastern Türkiye)						
Ratio of 1989 Ethnic Turkish to Natives	-0.617	-0.026	-0.336	-0.527	-0.091	-0.096
in 1990 among Women aged 18-39	(0.537)	(0.505)	(0.455)	(0.439)	(0.240)	(0.239)
Observations	463	463	464	464	465	465
R^2	0.338	0.336	0.240	0.240	0.195	0.195
Panel C: NUTS1 $\leq$ 6 (Western half of Türkiye)						
Ratio of 1989 Ethnic Turkish to Natives	-0.739	-0.107	-0.343	-0.439	-0.057	-0.063
in 1990 among Women aged 18-39	(0.511)	(0.493)	(0.464)	(0.442)	(0.245)	(0.241)
Observations	287	287	288	288	289	289
R^2	0.369	0.365	0.215	0.215	0.202	0.202

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to 15- to 19-year-olds in Columns (1) and (2), 20- to 24-year-olds in Columns (3) and (4), and 25- to 29-year-olds in Columns (5) and (6). Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable is the change between 1990 and 2000 in the share of native women in each district who are: a) middle school graduates in Columns (1) and (2), b) high school graduates in Columns (3) and (4), and c) college graduates in Columns (5) and (6). c) The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 8: Placebo Test on the Impact on Labor Market Outcomes: Using the 1985 and 1990 Censuses

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Panel A: Impact on Native Women aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.207	0.152	0.263	0.172	0.275**	0.236
in 1990 among Women aged 18-39	(0.208)	(0.271)	(0.232)	(0.275)	(0.110)	(0.145)
Observations	623	623	623	623	623	623
R^2	0.185	0.185	0.171	0.170	0.267	0.267
Panel B: Impact on Native Men aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	-0.270	-0.013	-0.035	0.152	0.409	0.530
in 1990 among Women aged 18-39	(0.169)	(0.219)	(0.130)	(0.144)	(0.255)	(0.343)
Observations	623	623	623	623	623	623
R^2	0.347	0.345	0.292	0.290	0.503	0.502
Urban Areas						
Panel C: Impact on Native Women aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	-0.112	-0.084	-0.031	0.034	0.134	0.019
in 1990 among Women aged 18-39	(0.283)	(0.239)	(0.362)	(0.301)	(0.123)	(0.134)
Observations	225	225	225	225	225	225
R^2	0.361	0.361	0.362	0.362	0.441	0.438
Panel D: Impact on Native Men aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	-0.338*	-0.273	0.022	0.147	0.312	0.187
in 1990 among Women aged 18-39	(0.195)	(0.179)	(0.135)	(0.107)	(0.382)	(0.388)
Observations	225	225	225	225	225	225
R^2	0.573	0.573	0.493	0.492	0.642	0.642

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. The sample is further restricted to women in panel (A) and (C) and to men in panel (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels (A) and (B) and 225 province and district centers with a population above 20,000 in Panels (C) and (D) according to the administrative classification in 1985. b) The dependent variable in panels A and C (B and D) are the changes between 1985 and 1990 in the share of native women (men) in each district who are: a) employed b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 9: Placebo Test on the Gendered Impact of the 1989 Refugee Shock on Labor Market Outcomes

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Ethnic Turkish to Natives	0.518**	0.310	0.280	0.103	-0.233	-0.377
in 1990 among Women aged 18-39	(0.230)	(0.282)	(0.241)	(0.283)	(0.231)	(0.287)
Observations	623	623	623	623	623	623
R^2	0.218	0.217	0.204	0.204	0.398	0.397
Panel B: Urban Areas						
Ratio of 1989 Ethnic Turkish to Natives	0.230	0.269	-0.033	-0.109	-0.164	-0.190
in 1990 among Women aged 18-39	(0.328)	(0.258)	(0.315)	(0.249)	(0.330)	(0.311)
Observations	225	225	225	225	225	225
R^2	0.454	0.454	0.477	0.477	0.593	0.593

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers in Panel A and 225 province and district centers with a population above 20,000 in Panel B. b) The dependent variable is the change between 1985 and 1990 in the difference between the share of native women and the share of native men who are: a) employed b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 10: Placebo Check for Number of Live Births per Woman

	Full Sample		NUTS1 ≤9		NUTS1 ≤6		Urban Areas	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Using 40- to 59-year-old Native Women								
Ratio of 1989 Ethnic Turkish to Natives	0.456	0.522	0.338	0.590	0.560	0.613	0.573	0.733
in 1990 among Women aged 18-39	(1.155)	(1.515)	(1.103)	(1.497)	(1.174)	(1.556)	(1.635)	(1.555)
Observations	623	623	465	465	289	289	225	225
R^2	0.483	0.483	0.541	0.541	0.639	0.639	0.679	0.679
Panel B: Using the 1985 and 1990 Censuses								
Ratio of 1989 Ethnic Turkish to Natives	0.935	0.059	1.220	0.196	1.495	0.990	0.559	-0.207
in 1990 among Women aged 18-39	(1.784)	(2.255)	(1.759)	(2.278)	(1.773)	(2.281)	(2.193)	(1.897)
Observations	623	623	465	465	289	289	225	225
R^2	0.323	0.323	0.380	0.380	0.391	0.391	0.557	0.557

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses in Panel A and 1985 and 1990 Turkish censuses in Panel B. Ethnic Turks are defined as individuals who were born in Bulgaria. In Panel A the sample is restricted to 40-to 59-year-old women who are native Turkish and in Panel B 18-to 39-year-old women who are native Turkish. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable is the number of live births per woman. The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 11: The Impact of 1989 Ethnic Turkish on Internal Migration

	Full Sample		Urban Areas		NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Ethnic Turkish to Natives	-0.157	0.556*	-0.495	0.227	-0.293	0.374
in 1990 among Women aged 18-39	(0.476)	(0.314)	(0.625)	(0.358)	(0.471)	(0.305)
Observations	623	623	225	225	289	289
R^2	0.516	0.511	0.668	0.662	0.540	0.532

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable is the change between 1990 and 2000 in the share of migrants (individuals who did not live in this district center five years ago). The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 12: Heterogeneity by Schooling Level

	Employed		In the Labor Force		Employed in Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Primary School or Lower						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	-0.003 (0.296)	-0.078 (0.246)	-0.007 (0.278)	0.021 (0.280)	0.502** (0.239)	0.328 (0.200)
Observations	225	225	225	225	225	225
R^2	0.611	0.611	0.643	0.643	0.723	0.721
Panel B: Middle School or High School						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	1.579*** (0.453)	1.917*** (0.377)	2.069*** (0.585)	2.538*** (0.473)	1.035*** (0.232)	1.011*** (0.298)
Observations	225	225	225	225	225	225
R^2	0.811	0.811	0.823	0.822	0.795	0.795
Panel C: College Graduate						
Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39	0.966 (1.163)	1.072 (1.132)	0.502 (0.676)	0.167 (0.750)	1.603*** (0.429)	2.010*** (0.509)
Observations	221	221	221	221	221	221
R^2	0.502	0.502	0.587	0.587	0.660	0.656

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish women. Using the individual-level data, the unit of analysis is reduced to 225 province and district centers with a population above 20,000. Panels (A) to (C) present the results for different educational groups. b) The dependent variable is the change between 1990 and 2000 in the share of native women in each district who are a) employed, b) in the labor force, and c) employed in manufacturing. The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially 1989 Ethnic Turkish—to native Turkish (excluding both 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table 13: The Impact of the 1989 Refugee Shock on Turkish Women's Gender Norms and Attitudes

Panel A: World Value Surveys (1990 and 1996): WOMEN

	Work is Important	Approves Men's Priority in Jobs	Working Mother Child Bond	Autonomy Index	Equality Index
Ethnic Turkish to Natives in 1990 among Women aged 18-39	8.057**	-9.989***	-2.785	5.298***	-167.870
	(3.317)	(2.097)	(3.211)	(1.687)	(112.804)
Observations	842	834	872	892	554
R^2	0.084	0.117	0.053	0.043	0.185

Panel B: World Value Surveys (1990 and 1996): MEN

	Work is Important	Approves Men's Priority in Jobs	Working Mother Child Bond	Autonomy Index	Equality Index
Ethnic Turkish to Natives in 1990 among Women aged 18-39	1.119	2.579	-6.615***	0.791	40.488
	(0.864)	(2.297)	(2.564)	(1.804)	(64.500)
Observations	848	804	855	864	541
R^2	0.053	0.123	0.076	0.047	0.184

Notes: The sample includes men and women aged 18-39 from the 1990 and 1996 Turkish World Values Surveys, with results presented separately for women and men in Panels A and B, respectively. Individual level regressions control for age dummies, region, and year-fixed effects. Ethnic Turks are defined as individuals who were born in Bulgaria. The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table A1: First-Stage Regressions

	Full Sample	Urban Areas	NUTS1 ≤ 9	NUTS1 ≤ 6
Ethnic Turkish/Native Turkish in 1985	0.399***	0.451***	0.398***	0.398***
	(0.037)	(0.053)	(0.037)	(0.037)
N	623	225	465	289
R^2	0.923	0.951	0.922	0.922

Notes: Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. In each panel, we make further restrictions as indicated in panel headings. b) The dependent variable is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. The instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table A2: Placebo Test for Women's Schooling Outcomes: Using the 1985 and 1990 Censuses

	Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Ethnic Turkish to Natives	0.009	0.067	-0.445	-0.235	-0.068	0.071
in 1990 among Women aged 18-39	(0.395)	(0.478)	(0.391)	(0.496)	(0.150)	(0.165)
Observations	621	621	622	622	622	622
R^2	0.154	0.154	0.115	0.115	0.230	0.229
Panel B: Urban Areas						
Ratio of 1989 Ethnic Turkish to Natives	0.180	0.032	-0.165	0.341	-0.100	-0.003
in 1990 among Women aged 18-39	(0.442)	(0.431)	(0.506)	(0.398)	(0.170)	(0.168)
Observations	225	225	225	225	225	225
R^2	0.422	0.422	0.291	0.288	0.523	0.522
Panel C: NUTS1 $\leq$ 9						
Ratio of 1989 Ethnic Turkish to Natives	-0.035	-0.039	-0.401	-0.225	-0.072	0.043
in 1990 among Women aged 18-39	(0.406)	(0.489)	(0.401)	(0.504)	(0.152)	(0.168)
Observations	463	463	464	464	464	464
R^2	0.159	0.159	0.115	0.114	0.215	0.214
Panel D: NUTS1 $\leq$ 6						
Ratio of 1989 Ethnic Turkish to Natives	0.072	0.096	-0.301	-0.203	-0.065	0.052
in 1990 among Women aged 18-39	(0.398)	(0.489)	(0.414)	(0.516)	(0.150)	(0.172)
Observations	288	288	288	288	288	288
R^2	0.177	0.177	0.111	0.111	0.206	0.205

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish women. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. In each panel, we make further restrictions as indicated in panel headings. b) The dependent variable is the change between 1985 and 1990 in the share of native women in each district who are: a) middle school graduates in Columns (1)-(2), b) high school graduates in Columns (3)-(4), and c) college graduates in Columns (5)-(6). c) The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table A3: Placebo Check on the Impact on Labor Market Outcomes: Without Province Dummies

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Panel A: Impact on Native Women aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.126	0.074	0.095	0.082	0.228***	0.226***
in 1990 among Women aged 18-39	(0.105)	(0.102)	(0.106)	(0.108)	(0.084)	(0.069))
Observations	623	623	623	623	623	623
R^2	0.053	0.053	0.035	0.035	0.089	0.089
Panel B: Impact on Native Men aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.157*	0.246**	0.173**	0.205***	0.655***	0.812***
in 1990 among Women aged 18-39	(0.093)	(0.114)	(0.068)	(0.068)	(0.136)	(0.151)
Observations	623	623	623	623	623	623
R^2	0.139	0.138	0.115	0.115	0.277	0.274
Urban Areas						
Panel C: Impact on Native Women aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.079	0.112	0.077	0.161	0.156*	0.161**
in 1990 among Women aged 18-39	[0.105)	(0.091)	(0.131)	(0.103)	(0.083)	(0.071)
Observations	225	225	225	225	225	225
R^2	0.089	0.089	0.067	0.066	0.133	0.133
Panel D: Impact on Native Men aged 18-39						
Ratio of 1989 Ethnic Turkish to Natives	0.154	0.225*	0.218***	0.232***	0.471***	0.577***
in 1990 among Women aged 18-39	(0.110)	(0.118)	(0.072)	(0.071)	(0.176)	(0.147)
Observations	225	225	225	225	225	225
R^2	0.243	0.243	0.185	0.185	0.325	0.323

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. The sample is further restricted to women in panels (A) and (C) and to men in panels (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels A and B and 225 in Panels C and D according to the administrative classification in 1985. b) The dependent variable in panels A and C (B and D) is the change between 1985 and 1990 in the share of native women (men) in each district who are: a) employed b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table A4: Placebo Check on the Gender-Specific Impact of the 1989 Refugee Shock on Labor Market Outcomes: Excluding Province Dummies

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
			Panel A: Full Sample			
Ratio of 1989 Ethnic Turkish to Natives	0.131	0.053	-0.009	0.014	-0.483***	-0.601***
in 1990 among Women aged 18-39	(0.098)	(0.108)	(0.113)	(0.118)	(0.116)	(0.159)
Observations	623	623	623	623	623	623
R^2	0.066	0.065	0.040	0.040	0.207	0.205
			Panel B: Urban Areas			
Ratio of 1989 Ethnic Turkish to Natives	-0,004	0,007	-0,153	-0,039	-0.347**	-0.409**
in 1990 among Women aged 18-39	(0.123)	(0.121)	(0.151)	(0.137)	(0.160)	(0.168)
Observations	225	225	225	225	225	225
R^2	0.137	0.137	0.121	0.120	0.273	0.272

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers in Panel A and 225 province and district centers with a population above 20,000. b) The dependent variable is the change between 1985 and 1990 in the difference between the share of native women and the share of native men who are: a) employed b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

Table A5: Placebo Check for Number of Live Births: Excluding Province Dummies

	Full Sample		NUTS1 $\leq$ 9		NUTS1 $\leq$ 6		Urban Areas	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Using 40- to 59-year-old Local Women								
Ratio of 1989 Ethnic Turkish to Natives	2.985**	2.345**	1.052	0.180	0.724	-0.231	3.253**	2.403*
in 1990 among Women aged 18-39	(1.250)	(1.133)	(0.926)	(0.811)	(0.899)	(0.791)	(1.480)	(1.227)
Observations	623	623	465	465	289	289	225	225
R^2	0.142	0.142	0.337	0.336	0.455	0.453	0.233	0.232
Panel B: Using the 1985 and 1990 Censuses								
Ratio of 1989 Ethnic Turkish to Natives	2.738*	3.383**	2.502	3.131*	2.731	3.592**	3.366**	4.270***
in 1990 among Women aged 18-39	(1.620)	(1.453)	(1.747)	(1.608)	(1.755)	(1.485)	(1.596)	(1.188)
Observations	623	623	465	465	289	289	225	225
R^2	0.174	0.174	0.215	0.215	0.217	0.216	0.252	0.251

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses in Panel A and 1985 and 1990 Turkish censuses in Panel B. Ethnic Turks are defined as individuals who were born in Bulgaria. In Panel A the sample is restricted to 40-to 59-year-old women who are native Turkish and in Panel B 18-to 39-year-old women who are native Turkish. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. In each panel, we make further restrictions as indicated in panel headings. b) The dependent variable is the number of live births per woman. The key variable of interest is the ratio of Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by 1/(1/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.