



Regular Article

Female employment and intimate partner violence: Evidence from Syrian Refugee inflows to Turkey[☆]

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ABSTRACT

We investigate the impact of female employment on intimate partner violence by exploiting the differential arrivals of Syrian refugees across Turkish provinces as an exogenous labor market shock. By employing a distance-based instrument, we find that refugee inflows caused a decline in female employment with no significant impact on male employment. This decline led to a reduction in intimate partner violence, without changes in partner characteristics, gender attitudes, co-residence patterns, or division of labor. Our results are consistent with instrumental theories of violence: a decline in female earning opportunities reduces the incentives of men to use violence for rent extraction.

1. Introduction

Intimate partner violence is widely recognized as a major social problem that is associated with poor health and economic outcomes for women and their children. Around the world, 30 percent of women aged 15 or older have experienced physical or sexual violence from their partners during their lifetime (Devries et al., 2013).¹ In the United States alone, the lifetime economic costs of intimate partner violence amount to \$3.6 trillion, with \$1.3 trillion attributed to productivity losses (Peterson et al., 2018). Despite these high social costs of domestic

violence, no clear consensus has emerged on the underlying causes of intimate partner violence (Garcia-Moreno et al., 2005). Answering this question is not only central to the design of policies for reducing violence against women but can also shed light on how some interventions might unintentionally generate adverse incentives for men, i.e., induce them to use violence as an instrument to gain control of newly obtained household resources. For instance, while economic empowerment of women through increased access to financial resources has long been considered an important way to reduce domestic violence, a growing body of literature has shown that empowering women economically

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¹ While domestic violence is considered the primary cause of homicide deaths for women in both developed and developing countries (Stöckl et al., 2013), even less extreme forms of violence may have crucial health consequences (World Health Organization, 2013). Women in violent relationships are more likely to report physical, mental, and reproductive health problems (Campbell, 2002), and their children are more likely to suffer from socio-emotional and cognitive problems (Carlson, 2000; Huth-Bocks et al., 2001; Aizer, 2011).

may trigger such backlash effects from men.²

In this paper, we investigate the causal effect of a particular economic empowerment mechanism—an exogenous shock to female employment—on the probability of experiencing domestic violence. We focus on a developing country, Turkey, which has a high prevalence of domestic violence and relatively low levels of women's empowerment. In particular, we exploit the differential inflow of refugees after the outbreak of the Syrian civil war in March 2011 across Turkish provinces as an exogenous supply shock to female employment. Currently, Turkey hosts the largest number of refugees worldwide: 3.4 million Syrians had fled to Turkey to escape the conflict as of 2017 (UNHCR, 2017). These large refugee flows have had significant impacts on the employment of native workers in Turkey (Del Carpio and Wagner, 2016; Aksu et al., 2018). The Syrian refugee influx to Turkey is expected to differentially displace Turkish workers by gender. This follows from two facts. First, the Syrian refugees in Turkey have been predominantly employed in the informal sector because they were not issued work permits until 2016 (Kaygısız, 2017). Second, women have been traditionally more likely to be employed in industries with high degrees of informality in the Turkish economy, such as agriculture and domestic services (Acar and Tansel, 2014).

Although the Syrian civil war and the ensuing refugee crisis were completely exogenous for our purposes, it is possible that refugees were not located at random. Following Del Carpio and Wagner (2016), we use a weighted average of the travel distance between 13 origin governorates in Syria and 81 Turkish provinces (1053 origin-destination pairs) as an instrument to predict the location choice of the refugees in the first stage of an instrumental variable (IV) model. Our results show that the Syrian refugee inflows negatively affected the labor market outcomes of women. In contrast, we find no evidence of a significant impact for male labor market outcomes. Our findings also reveal a significant decline in intimate partner violence in the provinces that received a higher share of Syrian refugees. We provide some suggestive evidence that changes related to both employment and domestic violence are concentrated among women with lower levels of educational attainment. These results are consistent with instrumental theories of violence, whereby a decline in a woman's earning opportunities reduces the incentives of her male partners to use violence as a means of rent extraction or gaining control over household decision-making. In the same vein, they are also consistent with men having a preference against their partner's employment, which implies that men reduce their violent behaviors once women comply with men's preferences. In an examination of alternative channels, we are able to rule out other potential explanations, including changes in partner characteristics, gender attitudes, cohabitation patterns, or the division of labor within the household. Since we assess the effects of Syrian refugee inflows on a large number of outcomes, we adjust standard errors for multiple hypothesis testing following Simes (1986). Most of our findings survive this adjustment for multiple hypothesis testing.

Our paper contributes to several strands of literature. First, a body of empirical work focuses on the relationship between domestic violence and women's employment. Several of these studies do not account for

reverse causality or omitted variable bias, and they focus on documenting a descriptive relationship (Tauchen et al., 1991; Vyas and Watts, 2009; Heath, 2014). Most relevant to our study, Aizer (2010) in the US and Anderberg et al. (2015) in the UK investigate the effects of the relative labor market conditions of women on domestic violence and find strong evidence in support of bargaining theories. Specifically, in her seminal work, Aizer (2010) shows that a reduction in gender wage gaps across California counties improves women's bargaining power, resulting in decreased domestic violence. In a similar vein, Anderberg et al. (2015) finds that an increase in female unemployment increases the incidence of domestic violence while an increase in male unemployment decreases this incidence. Our main contribution is that we investigate the effects of a well-identified supply shock to female employment on domestic violence in a developing country context with low levels of female labor force participation and a high prevalence of domestic violence.

This paper also relates to the growing literature investigating the labor markets effects of politically driven migrant inflows in the host countries. Mostly using quasi-experiments, some of these studies find larger displacement impacts for native workers than do papers documenting the effects of voluntary and gradual movements of labor across country borders (Carrington and De Lima, 1996; Mansour, 2010; Glitz, 2012; Braun and Mahmoud, 2014; Aydemir and Kırdar, 2017; Borjas and Monras, 2017; Clemens and Hunt, 2017). Most directly, our work contributes to the recent literature focusing on the arrival of Syrian refugees in Turkey following the Syrian civil war. Using different datasets and alternative econometric methods, these papers document that the Syrian refugee inflows negatively affected overall female employment (Del Carpio and Wagner, 2016; Aksu et al., 2018). Our results in this paper reinforce their findings.

More generally, our paper contributes to the expanding literature on the causes and consequences of domestic violence, ranging from analyses of service delivery (Farmer and Tiefenthaler, 1996) and changes in divorce laws (Stevenson and Wolfers, 2006) to the effects of conditional cash transfer programs (Hidrobo and Fernald, 2013; Bobonis et al., 2013) and compulsory schooling laws (Erten and Keskin, 2018, 2020). Providing evidence from the Syrian refugee inflows to Turkey, our paper contributes to this body of literature by examining how exogenous changes in female employment opportunities affect the prevalence of intimate partner violence in a developing country context.

The remainder of this article is organized as follows. In Section 2, we provide background information on the Syrian refugee inflows to Turkey. Section 3 discusses the data and the identification strategy we employ in our analysis. Section 4 presents the empirical results, and Section 5 concludes the paper.

2. Background

The civil war in Syria began in March 2011 with the violent response of the Bashar Al-Assad regime to peaceful civil protests. The violent conflict spread rapidly across Syria, resulting in a total of 12.5 million displaced individuals by 2017. Approximately 6.3 million of them migrated to neighboring countries, while the rest were internally displaced (UNHCR, 2017). As Fig. 1 illustrates, the total number of refugees that fled to Turkey rose from approximately 8000 in 2011 to 1.6 million in 2014. As the primary destination of resettlement (followed by Lebanon and Jordan), as of 2017, Turkey has hosted a total of 3.4 million Syrian refugees since the beginning of Syrian civil war.

Fig. 2 shows that the Syrian refugees come predominantly from the northwest of Syria, where the conflict began and spread. The origin governorates with the largest shares of refugee outflows were Aleppo (36%), Idleb (21%), al-Raqqa (11%), Latakia (9%), and Hamah (8%). According to a survey conducted by the Directorate General of Migration Management of Turkey (DGMM), 80% of the refugees reported that they chose to migrate into Turkey, instead of another country, because

² The effects of female empowerment on domestic violence are a priori ambiguous. On the one hand, increases in resources available to women may increase their bargaining power within the household by improving their outside options. In turn, this enhanced bargaining position is likely to reduce their exposure to domestic violence (Farmer and Tiefenthaler, 1996; Stevenson and Wolfers, 2006; Aizer, 2010; Hidrobo and Fernald, 2013). On the other hand, instrumental theories of violence predict that an increase in female resources, e.g., through improved employment opportunities, may increase the incentives of men to use violence or threats of violence as a means of extracting resources from women (Bloch and Rao, 2002; Eswaran and Malhotra, 2011; Bobonis et al., 2013; Erten and Keskin, 2018). In addition, an increase in women's bargaining power through better employment opportunities may trigger backlash from their partners, who may prefer that women do not work (Field et al., 2016).

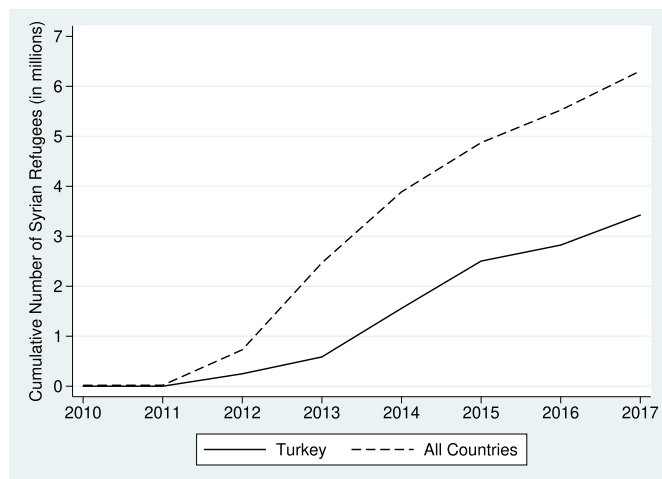


Fig. 1. Number of Syrian refugee inflows. Note: The data comes from the official number of Syrian refugees reported by the UNHCR online database.

reaching it entailed lower transportation costs (DGMM, 2013).

The Turkish government responded to the early waves of refugee inflows by enacting a Temporary Protection Regime in October 2011. Under this policy, the Syrian immigrants were assured no forced return, which implied that refugees did not have to use illegal means to cross the Turkish border. The Temporary Protection Regime also guaranteed a range of rights and services to the Syrians in Turkey, including access to education, health services, social assistance and freedom of movement within Turkey. However, the temporary protection status did not provide them with work authorization until January 2016.³ Hence, until this date, the Syrian refugees had predominantly worked in the informal sector.

The Syrian refugees were initially located in 25 refugee camps in the southeast region of the country near the Turkish-Syrian border. However, as the civil war became a humanitarian crisis, the number of individuals seeking refuge in Turkey rapidly exceeded the capacity of these camps, which now host approximately 8% of the refugee population, as the majority of refugees have moved and resettled across the provinces of Turkey (European Commission, 2017).

Despite the absence of representative survey data on the refugee labor force, aggregate figures from the United Nations High Commissioner for Refugees (UNHCR) indicate that the sex ratio of the refugee population is close to one and that the average level of education is relatively low. A large share of the refugees are young, with 45% of them being under the age of 18. Descriptive evidence also suggests that they are more likely to be employed in the informal sector with a relatively larger presence in agriculture and low-wage services (Erdoğan and Ünver, 2015).

³ The work authorization to Syrian refugees was announced through the publication of the Regulation on Work Permits of Refugees Under Temporary Protection in the Official Gazette in January 2016. This new regulation granted Syrian immigrants the ability to apply for work permits jointly with their employer, under certain conditions: The immigrant must have temporary protection, no more than 10 percent of an employer's workers can be refugees, and in jointly submitting the permit, the employer must contribute to social security and file tax reports. Because of these barriers, only 14,000 permits had been issued as of February 2018. The New Law No. 6735 International Labor Force also created the *Turquoise Card*, which allows foreigners with a certain educational level or professional experience or who have made a contribution to science and technology to obtain an indefinite work permit and grants the right to reside in Turkey for a holder's spouse and children (İçduygu and Şimşek, 2016).

3. Data and empirical methodology

3.1. Data

We combine two main sources of data in our empirical analysis: (i) province-level data on refugee inflows to Turkey and (ii) individual-level data on domestic violence and other socioeconomic outcomes.

3.1.1. Data on refugee inflows to Turkey

The data on refugee inflows to Turkey come from two sources. First, the UNHCR provides data on the number of total refugee inflows from Syria to Turkey on an annual basis from 2011 to 2014. Second, the DGMM—the Turkish migration authority—provides data on the number of registered refugees at the province level in 2014. For all 81 provinces in Turkey, we obtain the share of refugees in a given province by dividing the number of registered refugees by total province population. Since refugees may move into other provinces or out of the country after their registration, the official figures released by the DGMM reflecting the number of registered refugees in each province are likely to have some degree of measurement error. Hence, it is important to note that this measurement error may create an attenuation bias in estimates that do not instrument for the refugee inflow intensity.

Fig. 3 illustrates the geographical distribution of Syrian refugees using the share of refugee inflows in province population across Turkey in 2014. The provinces with the highest shares are Hatay, Kilis, and Sanliurfa, which are all located on the Turkish-Syrian border. Provinces farther from the border have generally received fewer refugees relative to their population. The average share of refugee inflows in province population was 2 percent in 2014.

We use two additional sources of data to construct our instrument. First, we use data on the share of Syrian population in each governorate in 2011 (prior to the beginning of the civil war). Second, we utilize Google Maps to calculate the travel distance between each governorate in Syria and each province in Turkey. Note that there are six border crossings between Turkey and Syria: 2 in Hatay and 1 each in Gaziantep, Kilis, Mardin and Sanliurfa. Depending on the home governorates and their destination provinces in Turkey, Syrian refugees were likely to use different border crossings. To calculate our distance measure, we take the shortest travel path between two locations. As a result of the open-door policy in Turkey toward Syrian refugees, there was no reason for the Syrian refugees to use illegal pathways to enter the country.

Finally, we use data on the trade volume between each Syrian governorate and 81 Turkish provinces provided by the Turkish Statistical Agency to control for economic linkages between these regions.

3.1.2. Data on domestic violence and related outcomes

We use two rounds of Turkey's National Survey of Domestic Violence against Women (NSDVW) conducted in 2008 and 2014. These are nationally representative household surveys that contain information on the respondents' experience of domestic violence and their labor market outcomes, demographics, partner characteristics, marriage market outcomes, gender attitudes, and other socioeconomic indicators.⁴

⁴ The administrative data on domestic violence—such as hospital or police reports—could be useful as more objective measures of violence without being subject to reporting bias. However, in developing country contexts, this information is likely to be flawed since only a select group of women has access to hospitals and police stations after experiencing violence. In our data covering both 2008 and 2014, only 5 percent of victims visited a hospital after a violent incident and only 6 percent filed a police report. It is also not possible to capture the extent of psychological violence that women suffer using administrative reports. Hence, we use a rare dataset that has information on self-reported physical, sexual, and psychological violence against women that are otherwise impossible to observe.

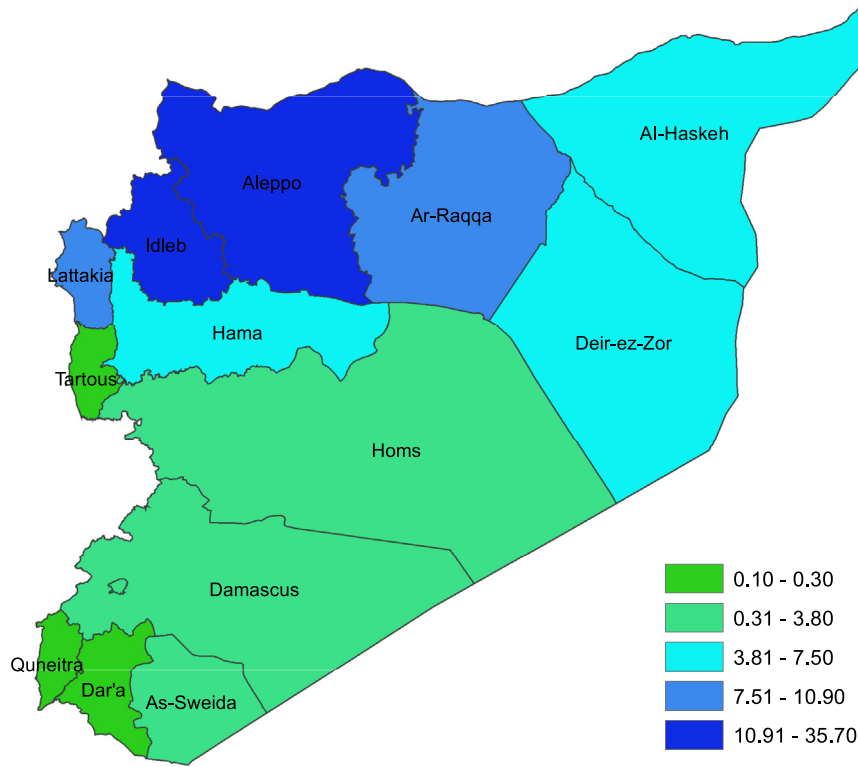


Fig. 2. Origin of Syrian refugees (in %). Note: The data comes from the DGMM (2013).

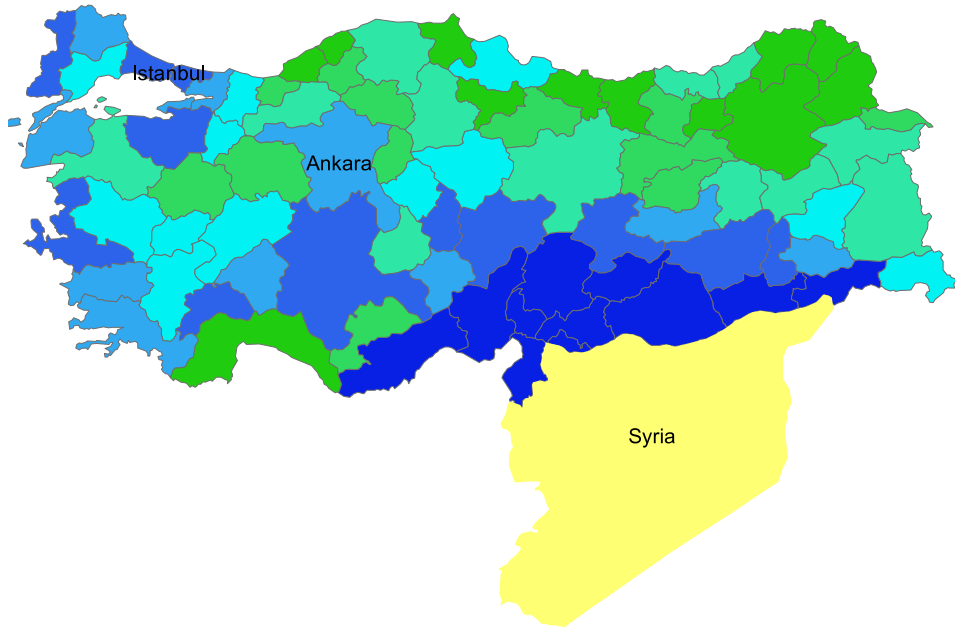


Fig. 3. Share of Syrian refugees in Turkish population (in %), 2014. Note: The data comes from the Directorate General of Migration Management in Turkey.

Table 1
Summary statistics for currently married women.

	Mean	S.D.	Min	Max	N
Panel A: Female demographics and employment outcomes					
Years of schooling	6.02	3.96	0.00	21.00	15924
Non-Turkish speaker	0.02	0.15	0.00	1.00	15904
Lives in a rural area	0.24	0.43	0.00	1.00	15929
Age	37.26	10.60	15.00	59.00	15929
Has a personal income	0.11	0.32	0.00	1.00	15929
Worked last week	0.17	0.38	0.00	1.00	15926
Public employment	0.03	0.16	0.00	1.00	15929
Private employment	0.15	0.35	0.00	1.00	15929
Agricultural employment	0.06	0.23	0.00	1.00	15929
Industrial employment	0.02	0.12	0.00	1.00	15929
Service employment	0.10	0.30	0.00	1.00	15929
Forced to drop out of labor market by husband	0.10	0.30	0.00	1.00	15909
Panel B: Male employment outcomes					
Worked last week	0.75	0.43	0.00	1.00	15917
Public employment	0.11	0.31	0.00	1.00	15917
Private employment	0.65	0.48	0.00	1.00	15917
Agricultural employment	0.08	0.27	0.00	1.00	15917
Industrial employment	0.15	0.36	0.00	1.00	15917
Service employment	0.52	0.50	0.00	1.00	15917
Panel C: Gender attitudes outcomes					
A woman should not argue with her partner if she disagrees with him.	0.47	0.50	0.00	1.00	15800
Men can beat their partners in certain situations.	0.23	0.42	0.00	1.00	15551
A woman should be able to spend her money as she wills.	0.67	0.47	0.00	1.00	15739
It may be necessary to beat children for discipline.	0.33	0.47	0.00	1.00	15863
Panel D: Marriage market outcomes					
Husband engaged in a polygamous relationship	0.01	0.12	0.00	1.00	15926
Husband engages in a polygamous relationship	0.01	0.08	0.00	1.00	15929
Husband's schooling	7.93	3.63	0.00	22.00	15383
Husband's age	40.16	10.94	15.00	94.00	15390
Husband's religiosity index	0.04	0.50	-7.44	0.52	15929
Marriage decision	0.44	0.50	0.00	1.00	15923
Marriage age	21.41	4.24	8.00	58.00	15434
Number of children	2.36	1.59	0.00	20.00	15918
Panel E: Co-residence outcomes					
Co-residing with parent in-laws	0.12	0.32	0.00	1.00	15929
Co-residing with any parent	0.14	0.35	0.00	1.00	15929

Notes: The table presents the means, standard deviations, minimum and maximum values, and the number of observations from the 2008 and 2014 National Surveys on Domestic Violence against Women in Turkey. The sample includes currently married women. The variables are described in [Appendix A](#).

The 2008 and 2014 surveys were conducted during the months of July and September 2008 and between April and July 2014, respectively.⁵

The surveys targeted women between 15 and 59 years old, including those who were ever married, those who were in a relationship (who had a boyfriend or were engaged), and those who had never been in a relationship. One woman per household was randomly selected for an interview. No one else was in the room when the interviews were conducted, and the respondents were informed that their answers would be kept confidential.

[Table 1](#) presents summary statistics for major indicators of currently married women using the 2008 and 2014 NSDVW surveys. Panel A indicates that the average length of female schooling was 6.57 years. The average age of women was 37 years, and 24 percent of them lived in a rural area. Only 17 percent of women in our sample had worked last week, and only 11 percent had a personal income. While 3 percent of the women were employed in the public sector, 15 percent were employed in the private sector. Approximately 6 percent of them worked in the agricultural sector, 2 percent worked in the industrial

sector, and 10 percent worked in the service sector.⁶ In addition, 10 percent of women had been forced to drop out of the labor market by their husbands in the past 12 months.

Panel B provides descriptive statistics for male employment outcomes. On average, 75 percent of men in the sample had worked last week: 11 percent worked in the public sector, while 65 percent worked in the private sector. Moreover, 8 percent were employed in the agriculture sector, 15 percent were employed in the industrial sector, and 52 percent were employed in the service sector. The relative distribution shows that among the labor force, a higher percentage of female workers are in the agricultural sector, while a higher percentage of male workers are in the industrial and service sectors.

Our survey data include several binary variables on whether a woman had ever experienced different forms of physical, sexual, or psychological violence from her intimate partner. To capture each dimension of domestic violence, we follow [Kling et al. \(2007\)](#) and [Erten and Keskin \(2018\)](#) and construct three indices by averaging the z-scores of

⁵ We also use multiple rounds of the Household Labor Force Survey (from 2006 to 2014) and three rounds of the Turkish Demographic Health Surveys (2003, 2008, and 2013) for our robustness checks and appendix tables.

⁶ In [Table A1](#), we provide the means of outcomes used in the analysis by year and education level of women. We observe that more educated women—those with more than 8 years of schooling—have a higher propensity to work in both pre- and post-refugee-shock samples than less educated women with equal or less than 8 years of schooling.

the underlying domestic violence indicators over the past 12 months.⁷ The physical violence index is constructed by averaging the z-scores of six underlying dummy variables indicating whether the respondent was subject to the following spousal acts of violence: slapping or throwing an object that would hurt; pushing, shoving, or pulling hair; hitting with the partner's fist or in a way that hurts; kicking, pushing on the ground, or beating; and choking or burning. The sexual violence index is a z-score constructed by averaging the z-scores from the following indicator variables: forced sexual acts, forced sexual relations because of a fear of what the partner would do otherwise, and humiliating sexual acts. The psychological violence index is a z-score constructed by averaging the z-scores from each of the following indicator variables: insulting, humiliating, and scaring or threatening. We create these indices to have a mean of 0 and a standard deviation of 1, following Anderson (2008). Higher index values represent higher incidence of violence.

Panel C reports descriptive statistics on women's gender attitudes: 47 percent of the women agree with the statement that a woman should not argue with her partner if she disagrees with him; 23 percent of women agree with the statement that men can beat their partners in certain situations. Moreover, 67 percent of women agree with the statement that a woman should be able to spend her money as she desires, and 33 percent agree with the statement that it may be necessary to beat children for disciplinary reasons.

Panel D presents summary statistics for marriage market outcomes. Approximately 1 percent of husbands had engaged in a polygamous relationship in the past, and 1 percent of them currently engages in such a relationship. The average years of schooling for husbands is 7.93 years, and their average age is 40. We also construct an index for the husband's religiosity by using indicators that proxy for religiosity.⁸ On average, 44 percent of women had freely chosen to marry their husbands, while the other women had arranged marriages.

Panel E provides descriptive statistics on co-residence outcomes. Approximately 12 percent of women co-reside with parents in law, and 14 percent of them co-reside with any parent (e.g., parents in law or own parents).

Finally, to shed light on the trends in labor market outcomes before and after the Syrian refugee inflows, following Del Carpio and Wagner (2016) we present unemployment and employment as a share of working-age population for regions that received most refugees and the rest of the regions in Fig. A1.⁹ First, in Panel A, we observe that those regions that received most of the refugee inflows have historically had more unemployment (around 6 percent as a share of working-age population) than the rest of Turkey (around 5 percent). In addition, Turkey experienced a short-lived recession in 2009—one year after our baseline survey year of 2008—as the unemployment rose to 7.4 percent of the working-age population, and the regions with subsequent refugee inflows experienced a larger increase in unemployment. Both regions recovered from the recession by 2011 as the unemployment declined to pre-recession levels. After 2012, unemployment followed a steady

trend in control regions while it began to increase in regions with most refugees.

Second, in Panel B of Fig. A1, we observe that the regions with subsequent refugee inflows had a lower employment to working-age population ratio than the control regions. The employment rate followed a steady trend starting in 2006, followed by a small decline in 2009 recession, which was followed by employment growth in all regions after the recession. In the post-2011 period, both regions experienced a steady and parallel growth in employment.

3.2. Identification

We compare individual outcomes in locations that are exposed to larger refugee inflows with outcomes in locations that are less exposed to such inflows before and after the war in Syria began. However, the resettlement of refugees is a potentially endogenous decision. In particular, refugees may decide to settle in provinces where the labor market opportunities exhibit an upward trend, which would result in a spurious positive correlation between refugee inflows and the employment outcomes of natives. Hence, OLS would overestimate the effects of refugee inflows on the labor market outcomes of natives. It is also possible, however, that the refugees choose to settle in smaller cities where the cost of living is much lower. If employment growth is lower in those provinces, the OLS estimates would be downward biased. Settling decision can also be affected by other factors, including network effects, favorable local policy measures, and potential overcrowding in locations closer to the border. Moreover, the measurement error in the province-level refugee inflows is also likely to bias the OLS estimates downward. To address these issues, we use an IV approach following previous literature (Card, 2001; Del Carpio and Wagner, 2016; Altindag et al., 2020). In particular, we estimate the following specification:

$$Y_{ipt} = \beta(R/Pop)_{pt} + \gamma X_{ipt} + \sigma Z_{pt} + \delta_p + \delta_t + \epsilon_{ipt} \quad (1)$$

where Y_{ipt} is the outcome for individual i in province p in year t ; $(R/Pop)_{pt}$ is the number of refugees as a share of province population in year t ; X_{ipt} represents the individual-level controls, including education, age, type of location, and mother tongue; Z_{pt} represents the province-level, time-varying controls, including the trade volume of each province with Syria and the baseline trade volume interacted with a time indicator (both in logs); δ_p represents the province fixed effects; and δ_t represents the year fixed effects for 2008 and 2014. Since the Syrian civil war began in 2011, the number of Syrian refugees prior to 2011 in any province of Turkey is zero. We cluster standard errors at the province level to account for serial correlation in outcomes within provinces. Following Del Carpio and Wagner (2016), our instrument relies on the fact that the travel distance from the Syrian governorate from which refugees depart to each province in Turkey where they settle is an important predictor of where the refugees settle. The instrument for the refugee inflows at any point in time for each province in Turkey is calculated as follows:

$$IV_{pt} = \sum_s \frac{1}{\tau_{sp}} \pi_s R_t \quad (2)$$

where τ_{sp} is the travel distance from each Syrian governorate s to a Turkish province p , π_s is the share of Syrian population in each governorate s in 2011 (pre-war),¹⁰ and R_t is the number of registered Syrian refugees in Turkey in year t (measured in thousands).¹¹ Since there are

⁷ We construct z-scores for each domestic violence variable using the mean and standard deviation of the variable, and we take the simple average of the z-scores to create three violence indices.

⁸ In particular, we take the simple average of the z-scores of husbands' characteristics, including a dummy variable that takes value one if the husband never drinks alcoholic beverages, a dummy variable that takes value one if the husband never gambles, a dummy variable that takes value one if the husband never uses narcotic drugs, and a dummy variable that takes value one if the husband never had an affair. Since Islam prohibits these behaviors by categorizing them as sins, individuals with high degrees of religious beliefs are very unlikely to exhibit these behaviors.

⁹ Following Del Carpio and Wagner (2016), we divide Turkey into regions that experienced a large refugee inflow of at least 1 percent of the population by 2014 and those that did not. The former is referred in Fig. A1 as "most refugees" and the rest as "control" regions. While Del Carpio and Wagner (2016) focus on private sector employment, we focus on total employment.

¹⁰ The total population by governorate in 2011 according to civil affairs records is released by the Syrian Arab Republic Central Bureau of Statistics.

¹¹ The choice of a distance-based instrument is in line with the previous literature focusing on gravity models of migration. These models are based on the intuition that as the distance between two locations increases, the migration flows between them decrease. However, as the overall population size increases in these locations, we observe larger numbers of people moving between them (Anderson, 2011).

Table 2
First-stage regression results.

	Dependent variable: Share of refugees in province population		
	(1)	(2)	(3)
Distance instrument	0.012*** (0.001)	0.013*** (0.001)	0.013*** (0.001)
F-statistic	78.73	105.60	143.89
Observations	15,899	15,899	15,899
Province and year fixed effects	x	x	x
Individual characteristics	x	x	x
Log trade volume		x	x
Baseline trade interacted with time			x

Notes: Data for the instrument and refugee shares come from the DGMM, Syrian Arab Republic Central Bureau of Statistics, Google maps, and UNHCR. These are matched to the 2008 and 2014 NSDVW in Turkey, including currently married women. The regressions report OLS estimates from regressing the distance instrument on the share of Syrian refugee inflows in province population. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Column (2) also controls for province-level trade volume, and column (3) controls for baseline trade volume interacted with time. The variables are described in [Appendix A](#). Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

13 origin governorates in Syria and 81 Turkish provinces, this results in 1053 origin-destination pairs to be used as an instrument to predict the location choices of the refugees in the first stage of our IV model.¹² The fact that we have province-level data on the Turkish side gives us a higher degree of disaggregation to capture cross-border variation in travel distance across regions compared to the earlier studies using similar distance-based instruments in the Turkish context ([Del Carpio and Wagner, 2016](#)).¹³ As we evaluate the effects of Syrian refugee inflows on a large number of outcomes, we adjust standard errors for multiple hypothesis testing following [Simes \(1986\)](#). Thus, for each outcome variable within a family of outcomes, we report results based on both standard p-values and p-values adjusted for multiple-hypotheses testing.

In this empirical framework, province fixed effects control for any time-invariant heterogeneity across regions, while year fixed effects purge any macroeconomic shocks at the national level. Our instrument therefore exploits variation within provinces observed before and after the Syrian civil war began. In addition, the inclusion of trade volumes at the province level controls for the potential disruption of trade linkages between Turkey and Syria resulting from the Syrian civil war. Finally, we use specifications that include the baseline trade volume interacted with time to control for the differential impact of baseline economic linkages between regions over time. This may be important if provinces with initially stronger economic linkages with Syria face a greater or weaker change in their labor market outcomes for reasons that are unrelated to refugee inflows from Syria. Note also that any characteristics of provinces that do not vary over time such as distance to the border or initial economic development are already controlled for by using province fixed effects.

4. Effects of the Syrian Refugee inflows

4.1. Labor market outcomes

We begin by testing the effects of the Syrian refugee inflows on the labor market outcomes of native workers in Turkey.¹⁴ [Table 2](#) provides the first-stage regression results. Column (1) regresses the share of Syrian refugee inflows in province population on our distance instrument while controlling for province and year fixed effects and individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Column (2) adds province-level trade volume to this specification, and column (3) controls for baseline trade volume interacted with time. Across all specifications, we observe a strong positive correlation, implying that the Turkish provinces that are closer to the more populated governorates of Syria received more refugee inflows. The F-statistics range from 79 to 144, implying that the underlying relationship is fairly strong.

[Table 3](#) presents the estimates of the impact of refugee inflows on female and male labor market outcomes.¹⁵ Columns (1)–(3) provide the OLS estimates, while columns (4)–(6) provide the IV estimates. As in [Table 2](#), we first include province fixed effects, year fixed effects, and the individual characteristics in columns (1) and (4) and, consequently, add log trade volume in columns (2) and (5) and baseline trade volume interacted with time in columns (3) and (6). Panel A presents the estimates for having worked last week and having a personal income for women; Panel B reports the estimates for the effects of refugee inflows on male labor market outcomes (i.e., whether the husband worked last

¹⁴ Because all of the intimate partner violence-related questions are relevant only to women who had partners in the previous 12 months, our analysis is based primarily on the sample of women who are currently married. One concern is the extent to which the Syrian refugee influx post-2011 affected the current relationship status of the Turkish respondents and, therefore, selection into the main sample used for analysis. To address this concern, we test whether the refugees' differential arrivals in the Turkish provinces had a significant effect on ever having a relationship, ever being married or being currently married. [Appendix Table A2](#) shows no significant effect of refugee movement on relationship status.

¹⁵ Since there is no information on income of men in the NSDVW surveys, we only analyze the effects of refugee inflows on the personal income of women. However, using the HLFIS data, we examine the income effects for men in the subsequent table, [Table 4](#).

¹² We treat Damascus and Rif-Dimashq as a single governorate.

¹³ Since the number of registered Syrian refugees in Turkey takes the value of zero in 2008, the instrument also takes the value of zero for this year.

Table 3
Effects of refugee inflows on labor market outcomes.

	OLS			IV			Mean
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Female labor market outcomes							
Worked last week	−0.784*** (0.206)†††	−0.807*** (0.235)†††	−0.851*** (0.249)†††	−0.975*** (0.250)†††	−1.091*** (0.341)†††	−0.937*** (0.328)††	0.17
Observations	15,896	15,896	15,896	15,896	15,896	15,896	
Has personal income	−0.594*** (0.202)††	−0.592*** (0.198)†††	−0.609*** (0.211)††	−0.693*** (0.246)††	−0.680*** (0.245)††	−0.622** (0.246)††	0.11
Observations	15,899	15,899	15,899	15,899	15,899	15,899	
Panel B: Male labor market outcomes							
Worked last week	−0.049 (0.141)	0.162 (0.284)	0.093 (0.254)	−0.467 (0.330)	−0.174 (0.327)	0.073 (0.303)	0.75
Observations	14,888	14,888	14,888	14,888	14,888	14,888	
Panel C: Being forced to drop out of the labor market by the husband							
Forced to drop out of labor market	−0.031 (0.237)	−0.032 (0.238)	−0.013 (0.260)	0.180 (0.268)	0.179 (0.257)	0.112 (0.231)	0.23
Observations	15,899	15,899	15,899	15,899	15,899	15,899	
Forced to drop out of labor market in the last 12 months	−0.063 (0.129)	−0.070 (0.128)	−0.075 (0.124)	−0.058 (0.118)	−0.096 (0.114)	−0.078 (0.100)	0.10
Observations	15,879	15,879	15,879	15,879	15,879	15,879	
Province and year fixed effects	x	x	x	x	x	x	
Individual characteristics	x	x	x	x	x	x	
Log trade volume		x	x		x	x	
Baseline trade interacted with time			x			x	

Notes: Data are from the 2008 and 2014 NSDVW in Turkey, including currently married women. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in [Appendix A](#). Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. †††, ††, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

week).¹⁶

The IV estimates reported in Panel A indicate that the refugee inflows had a negative impact on women's probability of having worked last week and having a personal income. The magnitude of the estimated coefficient implies that a one-standard-deviation increase in the refugee share (0.021) results in a 2-percentage-point (ppt) ($0.021 \times 0.937 = 0.020$) decline in female employment, corresponding to an 11.6% decline relative to the mean. However, Panel B shows that there is no evidence that the refugee inflows had a significant effect on whether husbands worked last week.^{17,18}

¹⁶ In these regressions, we control for husband's age, age squared, husband's years of schooling, and type of location (rural/urban). Due to some missing observations in these control variables, these regressions are estimated with a smaller sample. However, the results are consistent with those from the HLFS data, which has complete information on control variables for men.

¹⁷ In [Appendix Tables A3 and A4](#), we also provide the reduced-form estimates, which are entirely consistent with our IV estimates.

¹⁸ In [Appendix Table A6](#), we also analyze the sectors in which the displacement effects were larger for women. The IV estimates in Panel A show that the refugee inflows negatively affected female employment in the private sector, while we find no evidence of a significant impact for female employment in the public sector. This probably follows from the fact that most informal employment takes place in private sector. Finally, the IV estimates in Panel B indicate that the refugee inflows resulted in a decline only in women's employment in the agricultural and service sectors, while we find no evidence of a significant impact for female employment in the industrial sector. [Appendix Table A7](#) shows no evidence that the refugee inflows had a significant effect on whether men were employed in a specific sector.

Moreover, in [Table 3](#) Panel C, we test whether the decreased female employment is an outcome of their husbands' strictness about outside work after refugee arrival. If the husbands of respondents forced them to drop out of the labor market in response to the presence of Syrian refugees in the local labor market, we cannot necessarily conclude that Turkish women were less likely to be employed directly because of the Syrian refugees' replacement of them in their former jobs. The IV estimates presented in Panel C reveal no evidence that men forced their wives to drop out of the labor market.

Finally, in [Table 4](#), we use data from the 2008 and 2014 rounds of the Household Labor Force Survey (HLFS) to corroborate our primary results on the labor market outcomes.¹⁹ The IV estimates in Panel A show that the Syrian refugee inflows had a significant negative impact on female labor market outcomes, including the probability of employment in the previous week, log monthly earnings, and total hours worked last week.²⁰ In contrast, the IV estimates in Panel B provide no evidence of a significant impact of refugee inflows on male labor market outcomes. This evidence is consistent with our main findings on the differential impacts of Syrian refugee inflows by gender.

Overall, the magnitudes of the IV estimates are very close to the OLS estimates for labor market outcomes, suggesting that the role of endogenous sorting of the refugees based on local labor market characteristics is not a significant concern in this context. Indeed, while the IV estimates slightly differ from the OLS estimates, Durbin-Wu-Hausman

¹⁹ Pooling all rounds of HLFS from 2006 to 2014 yields very similar results as shown in [Table A8](#).

²⁰ We focus on the extensive margin, and code the missing values for earnings and hours worked as zero.

Table 4
Effects of refugee inflows on labor market outcomes using HLFS data.

	OLS			IV			Mean
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Female labor market outcomes							
Worked last week	−0.531 (0.311)	−0.728** (0.279)††	−0.825*** (0.296)††	−0.761*** (0.259)† † †	−1.148*** (0.226)† † †	−0.994*** (0.211)† † †	0.22
Observations	225,038	225,038	225,038	225,038	225,038	225,038	
Log monthly earnings	−2.310*** (0.400)† † †	−1.968*** (0.450)† † †	−2.257*** (0.429)† † †	−3.429*** (0.798)† † †	−2.938*** (0.680)† † †	−2.484*** (0.432)† † †	0.58
Observations	225,038	225,038	225,038	225,038	225,038	225,038	
Hours worked	−15.789 (11.881)	−21.640* (11.683)†	−25.950* (12.811)†	−27.872*** (9.911)† † †	−39.945*** (11.424)† † †	−33.095*** (10.531)† † †	9.01
Observations	225,038	225,038	225,038	225,038	225,038	225,038	
Panel B: Male labor market outcomes							
Worked last week	0.187 (0.175)	0.073 (0.142)	0.049 (0.146)	0.176 (0.173)	−0.034 (0.127)	0.005 (0.119)	0.76
Observations	207,149	207,149	207,149	207,149	207,149	207,149	
Log monthly earnings	−0.546 (1.050)	−1.227 (0.773)	−1.308* (0.721)	−0.141 (1.199)	−1.345 (0.821)	−1.222 (0.832)	3.05
Observations	207,149	207,149	207,149	207,149	207,149	207,149	
Hours worked	17.154 (12.678)	11.566 (11.907)	11.503 (12.189)	18.130 (11.806)	7.987 (10.706)	8.154 (10.176)	40.61
Observations	207,149	207,149	207,149	207,149	207,149	207,149	
Province and year fixed effects	x	x	x	x	x	x	
Individual characteristics	x	x	x	x	x	x	
Log trade volume		x	x		x	x	
Baseline trade interacted with time			x			x	

Notes: Data are from the 2008 and 2014 HLFS, including currently married individuals. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in [Appendix A](#). Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. †††, ††, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

test suggests that the OLS estimates are consistent at any conventional significance level for all variables in [Tables 3 and 4](#).

We conduct a number of robustness checks to test the sensitivity of our estimated labor market outcomes to alternative instruments and sample specifications. In particular, we first test whether our results are robust to using an alternative instrument that exploits pre-war differences in languages spoken across regions.²¹ [Appendix Tables A9–A12](#)

²¹ The relation between Turks and Arabs dates back to the Ottoman Empire. The sudden collapse of the empire after World War I led many ethnic Arabs to settle in the new states of the Middle East. However, some of them ultimately stayed in various provinces of the newly established Republic of Turkey. It is possible that a common spoken language might be a driving force for more Syrian refugees to move to those Turkish provinces with a historically higher percentage of Arabic language speakers by decreasing the adaptation costs post-Syrian civil conflict in 2011. Thus, we also use an alternative instrument based on the variation in the pre-war share of Arabic speakers in province population to predict where refugees are more likely to resettle ([Altındağ and Kaushal, 2020](#)). This language instrument can be calculated as follows: $IV_{pt}^{language} = (A/Pop)_{p,1965} R_t$, where $(A/Pop)_{p,1965}$ is the share of Arabic speakers in province population in 1965, and R_t is the number of registered Syrian refugees in Turkey in year t . The source of data on the share of Arabic speakers in province population is the Turkish Population Census of 1965. The first-stage results using this language instrument are presented in [Table A9](#). The F-statistics ranging around 71–72 indicate that this instrument is relevant to explaining the variation in Syrian refugees as a share of the population across Turkish provinces.

show that the IV estimates using a language instrument are consistent with our main findings. This is particularly reassuring given that the correlation between our main distance-based instrument and the language instrument is only 0.52. Hence, although these instruments exploit different variations for where the refugees are likely to settle, our results remain consistent across different IV specifications. Second, we exclude three provinces that received the highest Syrian refugee inflows as a share of their population, namely Hatay, Sanliurfa, and Kilis, to test whether our results are sensitive to their exclusion. The results reported in [Appendix Tables A13–A15](#) are consistent with our primary estimates. Third, we test whether our estimates are robust to excluding the three most populous and economically active provinces with the largest labor markets, namely Istanbul, Ankara, and Izmir, which received relatively large refugee inflows despite being farther away from governorates where Syrian refugees originated. The results reported in [Appendix Tables A16–A18](#) are again consistent with our main estimates. Finally, we examine whether our estimates are robust to including alternative control variables, including the log of province GDP and the 26 region-year fixed effects. The results reported in [Appendix Table A19](#) are very similar to our main estimates.

Overall, our findings on labor market outcomes indicate that Syrian refugees primarily displaced female workers, with stronger effects in the private sector driven by displacement within agricultural and service sector employment. On the other hand, we find no evidence that Syrian refugee inflows significantly influenced male labor market outcomes. Our findings are consistent with descriptive studies and anecdotal

Table 5
Effects of refugee inflows on domestic violence outcomes.

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Physical violence index	−2.120*** (0.756)†††	−2.066*** (0.647)†††	−2.107*** (0.695)†††	−2.816*** (1.031)†††	−2.548*** (0.853)†††	−2.401*** (0.842)†††
Observations	15,894	15,894	15,894	15,894	15,894	15,894
Sexual violence index	−1.829*** (0.470)†††	−1.791*** (0.497)†††	−1.928*** (0.523)†††	−2.865*** (0.722)†††	−2.690*** (0.648)†††	−2.217*** (0.456)†††
Observations	15,894	15,894	15,894	15,894	15,894	15,894
Psychological violence index	−1.850*** (0.603)†††	−1.765*** (0.639)†††	−1.959*** (0.597)†††	−3.243*** (1.156)†††	−2.839*** (0.965)†††	−2.171*** (0.473)†††
Observations	15,895	15,895	15,895	15,895	15,895	15,895
Province and year fixed effects	x	x	x	x	x	x
Individual characteristics	x	x	x	x	x	x
Log trade volume		x	x		x	x
Baseline trade interacted with time			x			x

Notes: Data are from the 2008 and 2014 NSDVW in Turkey, including currently married women. All dependent variables are standardized indices with a mean of 0 and a standard deviation of 1. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in [Appendix A](#). Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. †††, ††, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

dotal evidence documenting that Syrian refugees were more likely to accept significantly lower wages and inferior working conditions relative to Turkish workers particularly within the informal sector ([Parlak, 2017](#)). Since Turkish women were much more likely to be employed within the informal sector, the Syrian refugees predominantly displaced native women than native men.

These findings are similar to those documented in previous papers ([Del Carpio and Wagner, 2016](#); [Ceritoglu et al., 2017](#); [Aksu et al., 2018](#)). These studies document that Syrian refugee inflows have a large negative impact on employment of women, while they find no evidence of a significant impact for employment of men. In addition, while the previous studies find a significant negative impact of Syrian refugee inflows on male employment in the informal sector, this negative effect is offset by the positive impact of Syrian refugees on male employment in the formal sector. The latter effect is consistent with male workers adjusting to refugee inflows by occupationally upgrading from informal to formal jobs ([Del Carpio and Wagner, 2016](#)). In sum, the evidence in the literature is consistent with our findings that the female workers experienced substantial displacement in response to the inflows of refugees while there is no evidence a significant impact for male workers in total employment.

4.2. Domestic violence outcomes

In this section, we proceed by testing the effects of the Syrian refugee inflows on domestic violence outcomes. Our findings on labor market outcomes indicate that Syrian refugees predominantly displaced female workers without having a significant impact on male workers. On the one hand, the reduction in female employment may reduce the bargaining power of women within the household by weakening women's outside options. This decline in women's bargaining power may then increase their exposure to domestic violence from their partners. On the other hand, if working women were initially experiencing domestic violence as a result of their partners' incentives to appropriate their income or retain control over household decision making, a decline in female employment may then reduce the probability of

domestic violence by reducing such rent extraction incentives.

[Table 5](#) presents the estimates of the effect of Syrian refugee inflows on domestic violence outcomes. Across all IV specifications in columns (4)–(6), we find that the Syrian refugee inflows had a negative impact on women's experience of physical, sexual, and psychological violence from their husbands. The IV estimates in column (6) with the full set of controls indicate that a one-standard-deviation increase in the refugee share in a given province results in a 0.05 standard deviation (0.021×2.401) decline in the physical violence index. Similarly, a one-standard deviation increase in share of refugees leads to a 0.05 standard deviation decline in sexual and psychological violence indices as well.²² To put these magnitudes in perspective, [Appendix Table A20](#) provides estimates using dummy variables to capture the incidence of domestic violence experienced. In Panel A, the dependent variables take the value of one if the respondent experienced violence at least once in any underlying dimension of physical, sexual, or psychological violence within the last 12 months. The IV estimates in column (6) indicate that a one-standard-deviation increase in the refugee share in a given province results in a 2 percentage point (0.021×0.939) decline in the probability of experiencing physical violence. This corresponds to 21.9 percent decline relative to the outcome mean, which implies a sizable impact. The rest of the estimates show that a one-standard-deviation increase in the refugee share in a given province results in a 0.8 and 1.9 percentage point declines in the probability of experiencing sexual and psychological violence, respectively. These estimates correspond to 13.4 and 7.4 percent declines relative to the outcome mean.²³

In an attempt to document the link between female employment and IPV more directly, we also estimate an IV specification where we

²² In [Appendix Table A5](#), we also provide the reduced-form estimates, which are entirely consistent with our IV estimates.

²³ In Panel B of [Appendix Table A20](#), the dependent variables take the value of one if the respondent experienced violence more than once in any underlying dimension of physical, sexual, or psychological violence within the last 12 months. Both the signs and magnitudes of these estimates are similar to those in Panel A.

Table 6
Heterogeneous effects of refugee inflows by level of education.

	Middle school or less (≤ 8 years of schooling)			More than middle school (> 8 years of schooling)		
	(1)	(2)	(3)	(4)	(5)	(6)
Worked last week	−0.834*** (0.201) † † †	−0.974*** (0.285) † † †	−0.853*** (0.259) † † †	−0.958 (0.644)	−0.983 (0.631)	−0.871 (0.632)
Observations	12,579	12,579	12,579	3322	3322	3322
Has personal income	−0.500*** (0.148) † † †	−0.484*** (0.157) † † †	−0.455*** (0.153) † † †	−0.933 (0.790)	−0.914 (0.735)	−0.850 (0.739)
Observations	12,581	12,581	12,581	3323	3323	3323
Husband worked last week	−0.135 (0.383)	−0.139 (0.357)	0.110 (0.221)	0.060 (0.743)	−0.012 (0.720)	0.246 (0.754)
Observations	12,571	12,571	12,571	3321	3321	3321
Physical violence index	−3.397*** (1.040) † † †	−3.179*** (0.931) † † †	−3.013*** (0.922) † † †	−0.375 (1.558)	0.004 (1.238)	0.071 (1.150)
Observations	12,576	12,576	12,576	3323	3323	3323
Sexual violence index	−2.832*** (0.813) † † †	−2.674*** (0.713) † † †	−2.235*** (0.429) † † †	−2.868** (1.360)	−2.676* (1.438)	−2.059 (1.553)
Observations	12,577	12,577	12,577	3322	3322	3322
Psychological violence index	−3.729*** (0.954) † † †	−3.364*** (0.829) † † †	−2.821*** (0.579) † † †	−1.194 (2.369)	−0.661 (2.040)	0.713 (1.333)
Observations	12,578	12,578	12,578	3322	3322	3322
Province and year fixed effects	x	x	x	x	x	x
Individual characteristics	x	x	x	x	x	x
Log trade volume		x	x		x	x
Baseline trade interacted with time			x			x

Notes: Data are from the 2008 and 2014 NSDVW in Turkey, including currently married women. All columns report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. Columns (1)–(3) report estimates for those who completed middle school or less, while columns (4)–(6) report them for those who completed more than middle school. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in Appendix A. Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. † † †, † †, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

use our distance instrument to predict the women's probability of having worked last week. Our results in Appendix Table A21 are consistent with our findings in Tables 3 and 5 in that a decline in women's employment induces a fall in their risk of experiencing intimate partner violence across all dimensions.

Moreover, Appendix Tables A22–A25 show that we obtain consistent estimates when we estimate the same specification using a language instrument, when we exclude regions with the highest shares of refugee inflows, when we exclude highly populated provinces from the sample, and when we use alternative control variables.²⁴

Since the Syrian refugees who settled in Turkey had relatively low levels of education and lacked work permits in the earlier years, one could expect the displacement effects to be concentrated among less educated native workers who were mainly employed in the informal sectors before the refugee influx. In Table 6, we test whether the Syrian refugee inflows had heterogeneous effects by the level of educational attainment. In particular, we compare our estimates for women who completed middle school or less (i.e., less than or equal to 8 years of schooling) to those who attained more than a middle school edu-

cation (i.e., greater than 8 years of schooling).²⁵ The IV estimates in columns (1)–(3) show that Syrian refugees predominantly displaced less educated women who had completed middle school or less, whereas we find no significant effects for more educated women as shown in columns (4)–(6). Similarly, while Syrian refugee inflows had a negative impact on the personal incomes of less educated women, there is no evidence of a corresponding effect for more educated women. We also test whether the probability the husband having worked last week varies by the wife's education level, and find no evidence for such heterogeneity. Finally, we examine whether the domestic violence effects are concentrated among low-education women, who were disproportionately displaced by Syrian refugees. The IV estimates in the last three rows show that less educated women who completed middle school or less experienced a significant reduction in their exposure to domestic violence, whereas we find no evidence of a corresponding decline for women who attained higher levels of education.

Similarly, when we instrument women's probability of having worked last week with our distance instrument, the results reported in Appendix Table A21 show that a decline in female employment observed for less educated women results in a decline in their risk of experiencing intimate partner violence, which is consistent with the

²⁴ Among these robustness tests, only in the specification that includes 26 region-year fixed effects, the estimates for physical and psychological violence are imprecisely estimated; and the estimate for sexual violence remains to be negative and significant. In all other specifications, all outcomes are precisely estimated with the same signs as the main results.

²⁵ We note in advance that these results are suggestive at best since the educational backgrounds of women are not exogenous and our sample sizes for the two subcategories are not balanced. However, they are still worth exploring. We also note that the first-stage F-statistics are very similar, indicating that the instrument has predictive power for both samples.

Table 7
Effects of refugee inflows on gender attitudes.

	OLS			IV			Mean
	(1)	(2)	(3)	(4)	(5)	(6)	
A woman should not argue with partner if she disagrees with him	−0.793** (0.353)	−0.786** (0.338)†	−0.794** (0.346)†	−0.830* (0.434)	−0.790* (0.405)	−0.761* (0.406)	0.47
Observations	15,770	15,770	15,770	15,770	15,770	15,770	
Men can beat their partners in certain situations	−0.303 (0.596)	−0.364 (0.522)	−0.336 (0.516)	−0.362 (0.628)	−0.689 (0.447)	−0.784* (0.423)	0.23
Observations	15,522	15,522	15,522	15,522	15,522	15,522	
A woman should be able to spend her money as she wills	−0.075 (0.353)	−0.071 (0.342)	−0.047 (0.320)	−0.066 (0.534)	−0.040 (0.504)	−0.121 (0.451)	0.67
Observations	15,710	15,710	15,710	15,710	15,710	15,710	
It may be necessary to beat children for discipline	−0.257 (0.221)	−0.264 (0.221)	−0.273 (0.226)	−0.296 (0.242)	−0.333 (0.234)	−0.303 (0.234)	0.33
Observations	15,833	15,833	15,833	15,833	15,833	15,833	
Province and year fixed effects	x	x	x	x	x	x	
Individual characteristics	x	x	x	x	x	x	
Log trade volume		x	x		x	x	
Baseline trade interacted with time			x			x	

Notes: Data are from the 2008 and 2014 NSDVW in Turkey, including currently married women. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in Appendix A. Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. † † †, † †, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

evidence presented in Table 6.

Taken together, our findings on labor market and domestic violence outcomes are consistent with the instrumental violence hypothesis as well as men's preferences against women's employment. The disproportionate reduction in women's employment and income induced by the Syrian refugee inflow shock may result in a decline in men's incentives to use violence as a means of extracting resources from women. Similarly, the reduction in employment of women may relieve potential tensions in the household stemming from men having a preference against women's work outside of home. As a result, women's exposure to intimate partner violence declined.²⁶

4.3. Alternative channels

Although our findings indicate a change in the prevalence of domestic violence that is largely driven by an exogenous shock to female employment opportunities, in this section, we explore other potential channels through which Syrian refugee inflows could generate changes in the domestic violence experienced by women. In particular, we examine four alternative mechanisms: (i) changes in gender attitudes, (ii) changes in marriage market outcomes, (iii) changes in co-residence with parents, and (iv) changes in the division of labor within the household.

4.3.1. Changing attitudes against violence

If Syrian refugees have different gender attitudes than natives, increased cultural contact may result in a greater diffusion of these atti-

tudes. For example, if Syrians have more gender-equal attitudes and transmit these attitudes to the Turkish population, such transmission of values may yield a reduction in the domestic violence experienced by Turkish women.

Table 7 reports estimates for the effects of Syrian refugee inflows on the gender attitudes of women. None of the IV estimates of the impact of refugees on indicators of gender attitudes are statistically significant when we adjust standard errors for multiple hypothesis testing. In particular, we find no evidence that the Syrian refugee inflows had a significant impact on whether women agree with the following statements: (i) a woman should not argue with partner if she disagrees with him, (ii) men can beat their partners in certain situations, (iii) a woman should be able to spend her money as she wishes, and (iv) it may be necessary to beat children for disciplinary purposes. We conclude that the gender attitudes channel cannot explain our results.

In addition, it is possible that a refugee movement of this size affects overall beliefs (e.g. strengthening individuals' Turkish identity). However, in a recent study, Altındağ and Kaushal (2020) show that the arrival of Syrian refugees had only a small impact on regional political outcomes in Turkey.

4.3.2. Changes in marriage markets

An alternative potential channel through which Syrian refugee inflows may affect the risk of natives experiencing domestic violence is changes in marriage market outcomes. The entry of refugees as potential partners in the marriage market could result in changes in assortative matching. Despite being illegal, some native Turkish men could also choose to have a second (religious) marriage with a Syrian woman. Moreover, if Syrian refugees displace native women in the labor market, these women's opportunity cost of having children may decline, which in turn may lead to an increase in fertility.

Table 8 presents estimates for the effects of Syrian refugee inflows on marriage market outcomes. The IV estimates in Panel A reveal no evidence of a significant effect on whether the husband previously engaged in a polygamous relationship or currently engages in a polygamous relationship. Moreover, the IV estimates in Panel B indicate no

²⁶ It is important to note that in this study we are investigating the impact of an aggregate shock to the female labor market. Our findings can be interpreted as a lower bound estimate if we take into account the findings from the related literature that has focused on the effects of job displacement on probability of marital dissolution. An important finding that emerged from this research is that the probability of divorce is lower for aggregate employment shocks such as plant closings compared to the individual-specific layoffs (Charles and Stephens, 2004).

Table 8
Effects of refugee inflows on marriage market outcomes.

	OLS			IV			Mean
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A:							
Husband engaged in a polygamous relationship	0.025 (0.066)	0.021 (0.067)	0.017 (0.072)	−0.025 (0.082)	−0.043 (0.083)	−0.027 (0.080)	0.01
Observations	15,896	15,896	15,896	15,896	15,896	15,896	
Husband engages in a polygamous relationship	0.125** (0.048)†	0.123** (0.051)†	0.121** (0.053)†	0.087 (0.062)	0.076 (0.065)	0.083 (0.064)	0.01
Observations	15,899	15,899	15,899	15,899	15,899	15,899	
Panel B:							
Husband's age	−1.189 (3.697)	−0.956 (3.421)	−0.609 (2.904)	−1.366 (3.769)	−0.316 (3.256)	−1.603 (2.586)	40.16
Observations	15,363	15,363	15,363	15,363	15,363	15,363	
Husband's schooling	−1.277 (1.549)	−1.169 (1.494)	−1.648 (1.257)	−2.281 (2.469)	−1.754 (2.190)	−0.204 (1.785)	7.93
Observations	15,355	15,355	15,355	15,355	15,355	15,355	
Husband's religiosity	−0.031 (0.326)	−0.056 (0.289)	−0.039 (0.306)	0.271 (0.394)	0.149 (0.313)	0.089 (0.313)	0.04
Observations	15,899	15,899	15,899	15,899	15,899	15,899	
Marriage decision	−0.081 (0.331)	−0.080 (0.332)	−0.076 (0.334)	0.217 (0.402)	0.225 (0.386)	0.209 (0.363)	0.44
Observations	15,893	15,893	15,893	15,893	15,893	15,893	
Marriage age	−0.623 (2.665)	−0.785 (2.557)	−0.900 (2.441)	0.993 (2.677)	0.279 (2.394)	0.684 (2.380)	21.41
Observations	15,407	15,407	15,407	15,407	15,407	15,407	
Number of children	3.226*** (1.007)††	3.200*** (0.977)††	3.212*** (0.982)††	2.582** (1.109)	2.447** (1.034)	2.414** (1.015)	2.36
Observations	15,888	15,888	15,888	15,888	15,888	15,888	
Province and year fixed effects	x	x	x	x	x	x	
Individual characteristics	x	x	x	x	x	x	
Log trade volume		x	x		x	x	
Baseline trade interacted with time			x			x	

Notes: Data are from the 2008 and 2014 NSDVW in Turkey, including currently married women. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in [Appendix A](#). Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. † † †, † †, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

evidence of a significant change in partner characteristics including husband's age, schooling or religiosity; whether the woman had a say in her marriage decision; or the marriage age of the woman. The IV estimates also indicate a small positive impact on the number of children (approximately 2 percent); however, this effect is not robust to multiple hypothesis testing. We conclude that the marriage market mechanism does not explain our results.

4.3.3. Changes in Co-residence patterns

Next, we explore changes in the probability of co-residing with parents as an alternative channel through which Syrian refugee inflows may affect domestic violence outcomes. [Tumen \(2016\)](#) demonstrates that Syrian refugee inflows resulted in an increase in the rents of higher quality housing units within provinces where refugees disproportionately settled. If such increases in housing prices led to an increase in the probability of co-residing with parents, this change in household composition might have altered the risk of domestic violence faced by women.

[Table 9](#) reports estimates for the effects of Syrian refugee inflows on co-residence with parents. The IV estimates indicate no evidence of a significant impact on co-residing with parents in law or co-residing with any parent. Thus, we conclude that the co-residence channel does

not provide an explanation for our results.

4.3.4. Changes in the division of labor within the household

Finally, we examine whether the Syrian refugee inflows affected women's probability of being the primary provider of certain household chores. One potential effect of the Syrian refugee inflows could be that the displaced women may now have more time to do housework, which may in turn make men more satisfied with their marriages and reduce their violent behaviors toward women.

We test this alternative channel using the 2008 and 2013 TDHS data, which provide information on the types of housework performed primarily by women within the household.²⁷ The results presented in [Table 10](#) provide no evidence of a significant change in women's performance of household chores or in a z-score index of household chores composed of all the underlying components of these activities. Hence, we find no evidence that Syrian refugee inflows induced a change in the performance of housework by women.

²⁷ Note that this measure does not completely account for changes in the time allocated to certain household chores. Unfortunately, none of the data sources has the specific daily time allocation information for men or women.

Table 9
Effects of refugee inflows on co-residence with parents.

	OLS			IV			Mean
	(1)	(2)	(3)	(4)	(5)	(6)	
Co-residing with parent in laws	−0.269 (0.212)	−0.274 (0.201)	−0.284 (0.189)	−0.209 (0.263)	−0.236 (0.245)	−0.203 (0.240)	0.12
Observations	15,899	15,899	15,899	15,899	15,899	15,899	
Co-residing with any parent	−0.143 (0.203)	−0.146 (0.197)	−0.154 (0.186)	−0.027 (0.233)	−0.040 (0.224)	−0.014 (0.219)	0.14
Observations	15,899	15,899	15,899	15,899	15,899	15,899	
Province and year fixed effects	x	x	x	x	x	x	
Individual characteristics	x	x	x	x	x	x	
Log trade volume		x	x		x	x	
Baseline trade interacted with time			x			x	

Notes: Data are from the 2008 and 2014 NSDVW in Turkey, including currently married women. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in Appendix A. Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. † † †, † †, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

Table 10
Effects of refugee inflows on division of labor within the household.

	OLS			IV			Mean
	(1)	(2)	(3)	(4)	(5)	(6)	
Cooking	0.210 (0.140)	0.208 (0.134)	0.208 (0.132)	0.228 (0.196)	0.201 (0.183)	0.201 (0.185)	0.92
Observations	13,857	13,857	13,857	13,857	13,857	13,857	
Setting and cleaning the dining table	0.025 (0.168)	0.021 (0.166)	0.023 (0.172)	0.143 (0.335)	0.089 (0.298)	0.083 (0.252)	0.84
Observations	13,839	13,839	13,839	13,839	13,839	13,839	
Cleaning work such as wiping and sweeping	0.182 (0.150)	0.182 (0.149)	0.147 (0.139)	0.042 (0.327)	0.042 (0.286)	0.137 (0.168)	0.87
Observations	13,851	13,851	13,851	13,851	13,851	13,851	
Washing the dishes/placing the dishes in the dishwasher	0.026 (0.194)	0.025 (0.193)	0.018 (0.199)	−0.083 (0.289)	−0.092 (0.263)	−0.071 (0.219)	0.89
Observations	13,855	13,855	13,855	13,855	13,855	13,855	
Doing the laundry	0.102 (0.129)	0.100 (0.125)	0.100 (0.124)	0.165 (0.178)	0.139 (0.161)	0.140 (0.158)	0.92
Observations	13,857	13,857	13,857	13,857	13,857	13,857	
Ironing	0.112 (0.117)	0.113 (0.117)	0.080 (0.134)	−0.096 (0.258)	−0.083 (0.229)	0.000 (0.147)	0.87
Observations	13,432	13,432	13,432	13,432	13,432	13,432	
Kitchen shopping	−0.044 (0.422)	−0.063 (0.399)	0.019 (0.368)	0.440 (0.643)	0.191 (0.512)	−0.029 (0.404)	0.41
Observations	13,831	13,831	13,831	13,831	13,831	13,831	
Doing reparations or amendments	0.198 (0.183)	0.194 (0.191)	0.222 (0.194)	0.431** (0.207)	0.377* (0.212)	0.303 (0.184)	0.06
Observations	13,658	13,658	13,658	13,658	13,658	13,658	
Household chores index	0.383 (0.338)	0.373 (0.318)	0.387 (0.329)	0.560 (0.493)	0.420 (0.421)	0.383 (0.375)	0.03
Observations	13,865	13,865	13,865	13,865	13,865	13,865	
Province and year fixed effects	x	x	x	x	x	x	
Individual characteristics	x	x	x	x	x	x	
Log trade volume		x	x		x	x	
Baseline trade interacted with time			x			x	

Notes: Data are from the 2008 and 2013 TDHS, including currently married women. Columns (1)–(3) report OLS estimates from using the share of Syrian refugee inflows in province population as an explanatory variable. Columns (4)–(6) report IV estimates from instrumenting the share of Syrian refugee inflows in province population by the distance instrument. All specifications control for province and year fixed effects as well as the individual characteristics, including education, age, age squared, type of location (rural vs. urban), and mother tongue. Columns (2)–(3) and (5)–(6) also control for province-level trade volume, and columns (3) and (6) control for baseline trade volume interacted with time. The variables are described in Appendix A. Standard errors are clustered at the province level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values unadjusted for multiple-hypothesis testing. † † †, † †, and † denote significance at the 1, 5, and 10 percent levels, respectively, based on p-values corrected for multiple-hypothesis testing using Simes adjustment.

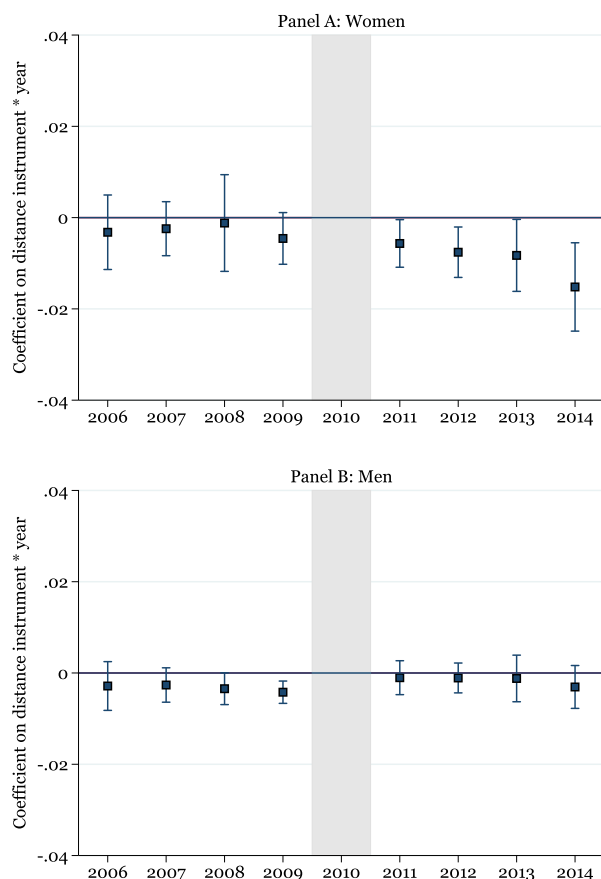


Fig. 4. Probability of being employed and exposure to refugee inflows. *Note:* Data are from the 2006–2014 Household Labor Force Surveys in Turkey. This figure plots the coefficients and 95% confidence intervals from an event-study regression that compares the probability of employment in provinces that are more exposed to the refugee inflow shock to those that are less exposed in each year before and after the Syrian refugee inflows. The omitted category is 2010.

4.4. Event study to examine pre-trends

One threat to our identification strategy is that there could be province-specific pre-trends in the outcomes of interest and that these pre-trends could be correlated with the instrument. In this section, we provide support for our identifying assumption with an event study using 9 rounds of HLFS data. Fig. 4 plots the coefficients on the interaction between our instrument and indicators for pre- and post-conflict years, β_j where $j \in [2006, 2014]$, with the corresponding 95% confidence intervals. The omitted year is 2010, the last year before the Syrian civil conflict started to accelerate.²⁸ Fig. 4 Panel A shows that in the pre-conflict period, the coefficients are not significantly different from zero, indicating no evidence of a pre-trend in female employ-

ment. Starting in 2011, however, there is a clear statistically significant decrease in female employment in provinces that are more exposed to the refugee inflow shocks. The lack of statistically significant pre-trends before 2010 in our event-study graph yields support for the identifying assumption that provinces which received a high number of refugees and those that did not would have had similar trends in female employment in the absence of refugee inflow. In Panel B of Fig. 4, we replicate the same analysis for male employment. However, in this case, we find no evidence of a differential trend either pre- or post-conflict years. Thus, we conclude that pre-trends in the outcome variable are unlikely to drive our results in this context.²⁹

5. Conclusion

In this paper, we exploit the differential inflow of Syrian refugees across Turkish provinces following the outbreak of Syrian civil war in 2011 as an exogenous supply shock to female employment. We find that the Syrian refugee inflows negatively affected the labor market outcomes of women, with no evidence of a significant impact on male labor market outcomes. Our findings also reveal a significant decline in exposure to intimate partner violence in provinces that received a higher share of Syrian refugees. Our results also suggest that these effects on labor market and domestic violence outcomes are stronger for women with lower levels of education, who were more likely to be displaced by the Syrian refugees. In an examination of alternative channels, we find no evidence of a significant impact of refugee inflows on partner characteristics, gender attitudes, co-residence patterns, or the division of labor within the household. Altogether, this evidence is consistent with instrumental theories of violence as well as men's preferences against women's employment, both of which imply that a decline in women's earning opportunities and employment reduces the violent behaviors of male partners.

Overall, our findings suggest that women in developing countries may be particularly vulnerable to supply shocks coming from an inflow of relatively low-education refugees who were not issued work permits. However, the decline in female employment may not necessarily increase women's exposure to domestic violence, although their overall bargaining power within the household might fall. Indeed, our results reveal that women's risk of experiencing domestic violence declined in response to a decline in earnings opportunities. This implies that women were initially experiencing domestic violence as a result of their partners' incentives to appropriate their income or preferences against their work, and a corresponding decline in their earnings opportunities resulted in a decrease in their probability of experiencing intimate partner violence by reducing such rent extraction motives and complying with men's preferences.

Author statement

The authors, Pinar Keskin and Bilge Erten, declare that they contributed evenly in the work of developing the question, conducting the literature review, gathering and cleaning the data, conducting the analysis, writing the first draft and conducting subsequent revisions.

Data availability

The authors do not have permission to share data.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jdeveco.2020.102607>.

²⁸ More specifically, we estimate the following reduced-form specification: $Y_{ipt} = \sum_{j=2006}^{2014} \beta_j (\text{year}_j \times IV_p) + \gamma X_{ipt} + \sigma Z_{pt} + \delta_p + \delta_t + \epsilon_{ipt}$ (3) where Y_{ipt} is the outcome for individual i in province p in year t ; IV_p is the cross-section component of our instrument in 2014 (i.e. the post period in our main sample); X_{ipt} represents the individual-level controls, including education, age, age squared; Z_{pt} represents the province-level, time-varying controls, including the trade volume of each province with Syria and the baseline trade volume interacted with a time indicator (both in logs); δ_p represents the province fixed effects; and δ_t represents the year fixed effects. We cluster standard errors at the province level to account for serial correlation in outcomes across provinces.

²⁹ Due to the absence of data, we cannot conduct the same analysis for domestic violence outcomes.

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