

City University of New York (CUNY)

CUNY Academic Works

Theses and Dissertations

Hunter College

Fall 1-3-2020

The Effect of the 2014-17 Refugee Crisis on the Sicilian Labor Market

Tamara Planer
CUNY Hunter College

[How does access to this work benefit you? Let us know!](#)

More information about this work at: https://academicworks.cuny.edu/hc_sas_etds/558

Discover additional works at: <https://academicworks.cuny.edu>

This work is made publicly available by the City University of New York (CUNY).
Contact: AcademicWorks@cuny.edu

The Effect of the 2014-17 Refugee Crisis on the Sicilian Labor Market

by

Tamara Planer

Submitted in partial fulfillment
of the requirements for the degree of
Master of Arts Economics, Hunter College
The City University of New York

2019

12/30/2019

Date

Partha Deb

Thesis Sponsor

12/30/2019

Date

Kenneth McLaughlin

Second Reader

Abstract

Between 2014 and 2017, as part of the European migration crisis, the number of refugees entering Italy rose dramatically. Most of these refugees were received by Sicily. This paper analyzes the impact of the large influx of migrants on the Sicilian labor market using 2010-18 data from the Italian Labor Force Survey. I use the difference-in-difference method to measure the effects of the migration crisis on employment and workforce participation rates, salaries, and duration of non-employment in Sicily among 20-64-year-old Italians, looking specifically at low-skilled men and women. I find that between 2014 and 2018 low-skilled men experienced declines in employment and workforce participation, as well as large increases in duration of non-employment. Among low-skilled women, the effects on employment were small and mostly insignificant, while the effects on duration of non-employment were smaller than those among low-skilled men. In terms of salaries, the effects of the crisis were modest and largely insignificant.

Contents

1	Introduction	3
2	Literature Review	5
3	Data.....	9
4	Methodology.....	10
5	Results	12
6	Conclusion.....	14
7	References	17
8	Tables.....	19
9	Figures	30

1 Introduction

The question of how immigration affects the labor market has long been debated by labor economists (Borjas, 2003; Borjas, 2017; Card, 1990; Ottaviano and Peri, 2008). Measuring the effects of immigration can be quite difficult. A supply shock, in the form of a refugee crisis for example, allows economists to measure these effects more easily. While the examining the effects of a refugee crisis on the labor market is more straightforward than examining the effects of migration inflows, there is no clear-cut conclusion on how such crises affects workers. Card (1990) finds that the Mariel Boatlift had no significant effect on workers in Miami. Similarly, Friedberg (2001) finds that the influx of Soviet Jews into Israel had no effect on the local labor market. On the other hand, Borjas and Monras (2017) find that refugee influxes negatively affect native workers. In this paper, I examine the effects of a refugee influx on the labor market by looking at the 2014-17 migration crisis in Italy.

Between the years 2014 and 2017, Italy experienced a large influx of migrants as part of what has come to be known as the European migrant crisis. Conflicts in different areas led to a surge in the number of refugees coming to Europe; at the height of the crisis in 2015, when over a million refugees arrived by sea, more than half of them came from Syria, Afghanistan, and Iraq (Europe Refugees & Migrants Emergency Response, 2015; Key Data for Europe, 2017). In 2015 and 2016 Europe received 2.5 million first-time asylum applications. Germany received 45 percent of these applications followed by Italy and Hungary, which each received 8 percent (Pew Research Center, 2017). However, although over a million refugees entered Germany between 2014 and 2015, Gehrsitz and Ungerer (2018) find that native workers were not displaced by the refugees.

Between 2014 and 2017 more than 600,000 migrants arrived in Italy by sea, almost triple the number of migrants that had arrived in the previous ten years (figure 1). The vast majority of these migrants left for Italy from Libya, originally coming from other countries in Africa, as well as the Middle East and Asia (Update #4 Italy – Sea Arrivals, Dec 2015; Italy Country Update, Dec 2016; Italy Sea Arrivals Dashboard, Dec 2017). In 2014 Syrians made up 25 percent of the migrants entering Italy, however the share of Syrian arrivals later dropped, with Syrians primarily using the Eastern Mediterranean route (Update #4 Italy – Sea Arrivals, Dec 2015). Overall, Africans, in particular Nigerians and Eritreans, made up the largest share of migrants coming to Italy (Update #4 Italy – Sea Arrivals, Dec 2015; Italy Country Update, Dec 2016; Italy Sea Arrivals Dashboard, Dec 2017). Political instability and conflict, as well as high unemployment rates and low wage rates have pushed many sub-Saharan Africans to migrate (Pew Research Center, 2018). While most migrants arriving in Italy by sea during the crisis were men, the second largest group in 2016 and 2017 was unaccompanied children (Update #4 Italy – Sea Arrivals, Dec 2015; Italy Country Update, Dec 2016; Italy Sea Arrivals Dashboard, Dec 2017). Among the Italian regions, Sicily received the largest number of sea arrivals, with smaller numbers going to Campania, Calabria, Apulia, and Sardinia (Update #4 Italy – Sea Arrivals, Dec 2015; Italy Country Update, Dec 2016). Although a relocation scheme for asylum seekers was put in place by the European Union to help Italy manage the flow of migrants, the process has been slow, and as of April 29, 2018 (the last date for which the data are available), only 32 percent of the 39,600 target were relocated (Italy Weekly Snapshot, 29 April 2018).

In this paper, I analyze the effects of the 2014-2017 migrant crisis on the labor market in Sicily. Using 2010-18 individual microdata from the Italian National Institute of Statistics' Labor Force Survey, I measure the effects of the migrant crisis on employment and workforce

participation rates, salaries, and duration of non-employment in Sicily among 20-64-year-olds. I use the difference-in-difference method to assess how Italian workers in Sicily, specifically low-skilled workers, fared compared to those in the central and southern regions of Sicily (excluding other regions that received migrants).

In terms of employment, low-skilled Italian men seem to have been more negatively impacted by the migrant crisis than low-skilled Italian women. The effects on employment for low-skilled women were small and largely insignificant. The effect of the crisis on employment among low-skilled men increased between 2014 and 2018, with low-skilled men 3.7 percent less likely to be employed in 2018. Moreover, low-skilled Italian men experienced significant increases in their duration of non-employment between 2014 and 2018. Low-skilled Italian women also saw their duration of non-employment increase as a result of the crisis, but these effects declined between 2015 and 2018. I find that the migration crisis had a small negative effect on the salaries of low-skilled workers. The effects of the crisis on salaries were mostly insignificant. Low-skilled Italian women experienced the largest effects, with their salaries decreasing by 5.1 percent in 2017.

The paper is organized as follows. The next section is a literature review. In the third section, I describe the data source and sample. In section 4, I explain the methodology. I present the results in section 5, and section 6 concludes.

2 Literature Review

It is difficult to measure the effects of immigration on the labor market. Estimates of immigration effects tend to be biased since immigration inflows often depend on local economic conditions. When considering immigration inflows, economists often use instrumental variables

to try and solve this endogeneity problem. Altonji and Card (1991) use the share of immigrants in different cities in the U.S. 1970 to predict the change in the share of immigrants in those cities. When measuring the effects of immigration on labor markets in Western Europe in the 1990s, Angrist and Kugler (2003) use the distance between Yugoslavia and cities in Western Europe as an instrument for the fraction of immigrants in Western Europe. D'amuri et al. (2010) estimate the impacts of immigration on the West German labor market using the influx of East Germans after 1991 as an instrument for all new immigration into West Germany. Another way to solve the endogeneity problem is by measuring the effects of a large influx of migrants on the labor market. Economists consider such influxes to be exogenous supply shocks and use them as natural experiments. Card (1990) analyzes the effects of the 1980 Mariel Boatlift on the labor market in Miami. Friedberg (2001) uses the mass migration of Soviet Jews to Israel to measure the effects of immigration on the Israeli labor market. Card (1990) and Friedberg (2001) examine the effects of a refugee influx on the labor market, as oppose to the effects of steady immigration inflows on the labor market. While it is possible to draw conclusions about the structure of the labor market from both types of studies, the effects of a refugee influx do not determine the effects of immigration inflows.

Both Card (1990) and Friedberg (2001) find that the refugee crises they analyzed did not negatively affect workers. Card (1990) finds that even low-skilled black and non-Cuban workers, who should be vulnerable to large influxes of low-skilled migrants, were not negatively impact by the Boatlift. Friedberg (2001) examines how native workers in occupations that received a large influx of Russians were affected; after controlling for endogeneity, she finds that the influx did not lower wages or affect employment opportunities in these occupations. Borjas and Monras (2017), however, find that both the Mariel Boatlift and the influx of Soviet Jews into Israel

negatively affected workers. They show that in fact the Boatlift led to a decline in the wages of high school dropouts, specifically male high school dropouts, while more educated workers saw their wages increase. In the case of the influx of Russian Jews into Israel, by considering not only their occupation choice but also their level of education, Borjas and Monras (2017) find that high-skilled workers in Israel were negatively impacted by the influx, while low-skilled Israeli workers benefited. They conclude that “competing natives” are hurt by refugee influxes, while “complementary workers” gain.

Fakih and Ibrahim (2016), Bağır (2018), and Gehrsitz and Ungerer (2018) consider more recent refugee crises. Gehrsitz and Ungerer (2018) look at the European migration crisis, specifically at Germany and the effect of an influx of 2.5 refugees between 2014 and 2015 on the employment of natives. Using the difference-in-difference method, they find that native workers did not experience an increase in unemployment. This was the case even among young native workers, with whom the mostly young refugees would have been competing (Gehrsitz & Ungerer, 2018). Fakih and Ibrahim (2016) and Bağır (2018) analyze the effects of the Syrian refugee crisis on Jordan and Turkey, respectively. Fakih and Ibrahim (2016) find that the influx of over 600,000 Syrian refugees into Jordan has had no impact on the Jordanian labor market. They suggest that restrictions on Syrian refugees could explain their results. Bağır (2018) finds that the Turkish workers were negatively affected by the crisis, at least in the border regions. In these regions unemployment rates increased and wages decreased, especially among less-educated workers. In the inner regions, on the other hand, there was a small decline in the wages of less-educated men, and no effect on employment.

Aside from the endogeneity of immigration flows, economists face many other challenges when attempting to produce reliable estimates for the effects of immigration. The

results they arrive at depend not only on their method of analysis, but also whether they analyze national or regional labor markets, and how specific the groups they look at are (Longhi et al., 2006). Zorlu and Hartog (2005) measure the effects of immigrant inflows on wages in the Netherlands, the UK and Norway, and find that the wages of earlier immigrants are more affected than those of natives. Similarly, D'amuri et al. (2010) they find that immigration into West Germany had negative effects on the wages and employment of earlier immigrants, but no negative impact on those of natives. Angrist and Kugler (2003), on the other hand, find that immigration flows in the 1980s and 1990s had a negative impact on native employment in Western Europe. According to Borjas (1995), in the case of wages, "a cross-section or time-series comparison of local labor markets may be masking the "macro" effect of immigration." Local labor markets are not closed, and a continuing flow of labor, capital and goods will affect how wages respond to immigration (Borjas, 1995).

Even when studying the same phenomenon, economists produce contradicting results. Card (1990) finds that even among minorities and low-skilled workers in Miami wages were not affected by the influx of Cubans in 1980. However, Borjas (2017) finds that the Mariel Boatlift led a decline in the wages of high school dropouts in Miami. Peri and Yasenov (2019), criticizing both the choice of data source by Borjas (2017), as well as the fact that the negative impact he finds shows up two years after the Boatlift, confirm Card's results. Peri and Yasenov (2019) use the May CPS as their main data source, while Borjas (2017) uses the March CPS. Moreover, Peri and Yasenov (2019) look at non-Cuban high school dropouts, between the ages of 19 and 65, and Borjas (2017) looks at male non-Hispanic high school dropouts between the ages of 25 and 29. Another example is the study of the effects of the inflow of less educated immigrants into the U.S. While Borjas (2003) finds large negative effects on native wages in the short run, Ottaviano

and Peri (2008) find that negative impact on native wages is actually quite small. They arrive at these results by accounting for short-run capital adjustment.

The results in a study on the effects of immigration on the labor market also depend on the type of the labor market being analyzed. The effects of immigration will be more severe in less flexible labor markets. Employment protections, high entry barriers and reduced wage flexibility in many European countries increase the negative impact of immigration on native employment (Angrist & Kugler, 2003). D'amuri et al (2010) explain that Germany's labor market institutions, such as generous unemployment benefits, prevented it from efficiently absorbing the 1990s migration supply shock. In general, the effects of immigration seem to be less severe in U.S. than in the Europe because of its more flexible labor market (Longhi et al, 2006).

3 Data

The data used for this paper are from the Italian Labor Force Survey for the years 2010-2018. The survey is conducted quarterly by the Italian National Institute of Statistics. The survey is conducted in order to obtain information on the employment situation, the job search, and the attitudes towards the labor market of Italy's working age population. All the members of each selected household are interviewed. The survey is conducted using a quarterly rotation scheme, where household are interviewed for two consecutive quarters, excluded for two quarters, and then interviewed again for another two quarters. My sample consists of Italians between the ages of 20 and 64, excluding those living in the regions of Campania, Calabria, Apulia, and Sardinia, as these regions also received refugees during the crisis. Because of a spike in sea arrivals in 2011, which is in the pre-crisis period in terms of the timeline, I also exclude observations from that year (figure 1). So, the baseline period consists of 2010, 2012, and 2013.

Table 1 shows the unemployment and workforce participation rates, the mean net monthly salary, and the duration of non-employment of Italians in Sicily in 2013. The unemployment rate among low-skilled is higher, while the workforce participation rate is lower compared to Sicily as a whole. The average duration of non-employment is also higher among the low-skilled. On average, low-skilled Italian women have lower salaries than low-skilled Italian men. The unemployment rate of low-skilled women is almost 4 percentage points higher than that of low-skilled men. The differences in the workforce participation rate and the duration of non-employment between low-skilled Italian men and women are quite staggering. Among low-skilled men, the workforce participation rate is 67.47 percent and the average duration of non-employment is 4.5 years. On the other hand, only 31.57 percent of low-skilled women are in the workforce, and their average duration of non-employment is about 12 years. 87.6 percent of 20-64-year-old Italians in Sicily have a high school degree or less, and 50.71 percent have not earned a high school degree. About 58 percent of low-skilled Italians do not have a high school degree. The numbers are about the same for low-skilled men and women.

4 Methodology

Using the difference-in-difference method, I analyze how employment and workforce participation rates, duration of non-employment, and monthly salary change in the region of Sicily as a result of the influx of migrants. I look at how these outcomes are affected in each crisis year and the year immediately following the crisis, using central and the rest of southern Italy as a control group. The difference-in-difference method requires that the treatment and control groups have similar pre-treatment trends in outcomes. Outcome levels, on the other hand, can vary between the groups. I test that Sicily (the treated region) and central and southern Italy follow similar trends in employment conditions, duration of non-employment, and monthly

salary. The results from the tests are presented in table 2. The tests fail to reject the hypothesis of parallel trends for salaries, duration of non-employment, and unemployment rates. There appears to be evidence of parallel trend failure for the out-of-labor-force rate, however, in general, outcomes seem to follow similar trends before the crisis.

To estimate the effect of the migration crisis on salary, I run linear regressions on the log of net monthly salary. The baseline regression is as follows:

$$\ln(\text{salary}) = \beta_0 + \beta_1 \text{Sicily} * \text{year}_i + \beta_2 \text{year} + \beta_3 \text{quarter} + \beta_4 \text{region} + u \quad (1)$$

where i refers to the years 2014 to 2018. I add controls for age, education, sex, and family type. I estimate the regressions separately among low-skilled Italian men and low-skilled Italian women. I define low-skilled workers as individuals with a high school education or less. The standard errors are clustered by region. I use cluster-robust standard errors in the following regressions as well.

Next, I estimate the effects of the migration crisis on employment and workforce participation rates using a multinomial logit. I report the marginal effects from these regressions. The variable for employment condition is a categorical variable that indicates whether an individual is employed, unemployed or out of the workforce. The structure of the variable makes the multinomial logit a more suitable model than a simple linear regression. The baseline regression is as follows:

$$\text{emp} = \beta_0 + \beta_1 \text{Sicily} * \text{year}_i + \beta_2 \text{year} + \beta_3 \text{quarter} + \beta_4 \text{region} + \varepsilon \quad (2)$$

where emp is a categorical variable referring to employment and workforce participation. Again, I add controls for age, education, sex, and family type, and estimate the model separately among low-skilled Italian men and women.

Lastly, I estimate the effects of the influx of refugees on duration of non-employment among the unemployed using a linear regression. The baseline regression is as follows:

$$durnonemp = \beta_0 + \beta_1 Sicily * year_i + \beta_2 year + \beta_3 quarter + \beta_4 region + \epsilon \quad (3)$$

where *durnonemp* refers to the duration of non-employment in months. I add the same controls as before and estimate the model among the same three groups.

5 Results

The results from the linear regressions on monthly salary are presented in tables 3 and 4. Table 3 shows the effects of the migration crisis on the log of net monthly wages in Sicily for the entire sample. The migration crisis seems to have had a small negative effect on salaries in Sicily. However, the effects are only significant in 2015 and 2017. After adding controls for age, education, family type, citizenship and gender, the effects on salaries decrease, but remain significant in 2017. Table 4 shows the effects of the crisis on the monthly salaries of low-skilled Italian workers in Sicily. As can be seen in column (1), the effects of the crisis on the salaries of low-skilled workers are modest and significant only in 2015 and 2017. Low-skilled Italian men did not experience significant declines in their salaries. Low-skilled Italian women, on the other hand, saw their salaries decrease by 5.1 percent in 2017. They also experienced a smaller, but statistically significant decline in their salaries in 2015.

Overall, the effect of the crisis on the salaries of low-skilled Italian workers is quite small. I would like to note that the effects are on net monthly salaries, not wages. The Labor Force Survey conducted by the Italian National Institute of Statistics does not include information on before-tax salaries. Although these results hint to wages having gone down

slightly, running these regressions on wages instead of on net monthly salary will produce more accurate results.

In tables 5 and 6, I present the marginal effects from the regressions on employment and workforce participation. Table 5 shows the effects of the crisis on employment and workforce participation in Sicily for the entire sample. Italians in Sicily are less likely to be employed and more likely to be out of the workforce as a result of the migration crisis. The effects of the crisis are again quite small, and significant only in some years. The impact of the crisis increases between 2014 and 2018. As can be seen in column (2), Italians were 0.8 percent less likely to be employed in 2015, and 2.2 percent less likely to be employed in 2018. While the effects on unemployment are significant between 2016 and 2018, the effects on workforce participation are not significant at all. The effects on low-skilled Italians are slightly larger. Table 6 shows that among low-skilled Italians the effects on employment increase over the period of the crisis and immediately following it. The effects on workforce participation are significant between 2016 and 2018, with low-skilled Italians in Sicily 1.6 percent more likely to be out of the workforce in 2018. Low-skilled Italian men seem to have been more affected by the crisis in terms of employment than low-skilled Italian women. While in 2014 low-skilled men were 1.4 percent less likely to be employed, in 2018 they were 3.7 percent less likely to be employed. The decline in the likelihood of low-skilled men being employed is mostly covered by an increase in the likelihood of being out of the workforce. The effects of the crisis on employment among low-skilled Italian women are much smaller and mostly insignificant.

The results from the regressions on duration of non-employment are presented in tables 7 and 8. Table 7 shows the effects of the migration crisis on the duration of non-employment in Sicily for the entire sample. The effects of the crisis on duration of non-employment decrease

after the addition of controls, but remain positive and significant, except in 2014. As can be seen in column (1) of table 8, the effects on low-skilled Italians are slightly higher. Low-skilled Italian men and women seem to have been impacted by the crisis in different years in terms of duration of non-employment. For low-skilled Italian men, the effects of the crisis increase between 2014 and 2018. The migration crisis increased their duration of non-employment by 6.1 months in 2014, and by 12.8 months in 2018. For low-skilled Italian women, the effects of the crisis decrease between 2015 and 2018. Moreover, the impact of the crisis is statistically insignificant in 2014 and 2018 among low-skilled women.

Based on the results from both the regressions on professional condition and the regressions of duration of non-employment, it seems that low-skilled Italian men suffered more in terms of employment than low-skilled Italian women as a result of the crisis. The migrants that arrived in Sicily were mostly men and are probably closer substitutes to low-skilled men than low-skilled women. With more competition, low-skilled Italian men have a harder time finding a job, resulting in a lower employment rate and longer periods of non-employment. Moreover, the difficulty in finding work could increase their frustration with the labor market, causing many of them to leave the workforce instead of looking for a job.

6 Conclusion

The migrant crisis of 2014-2017 does seem to have negatively impacted the Italian workers in Sicily, specifically low-skilled men. I find that the migration crisis had a small negative effect on the net monthly salaries of low-skilled workers, with the salaries of low-skilled Italian women falling by 5.1 percent in 2017. However, the crisis did not significantly affect the salaries of low-skilled men. Employment among low-skilled Italians also declined as a

result of the migrant crisis. The effect of the crisis on the likelihood of low-skilled Italian men being employed increased between 2014 and 2018. In 2018, low-skilled men were 3.7 percent less likely to be employed. Low-skilled Italian women, on the other hand, experienced smaller, and mostly insignificant declines in employment. In the case of low-skilled Italian men, the decline in the likelihood of being employed is mainly reflected by an increase in the likelihood of leaving the workforce. This could be due to rising frustration from a more competitive labor market. The duration of non-employment among low-skilled Italian men and women increased significantly as a result of the crisis. However, the increase was especially dramatic among low-skilled men who saw their duration of non-employment increase by over a year in 2018.

I would like to specify few caveats. First, I do not apply the difference-in-difference model to a policy change. There were migrants coming into Sicily before the migration crisis, and observations from 2011 even had to be excluded because of a small spike in migration (figure 1). Second, the fact that the pre-crisis trends in workforce participation in Sicily and in central and southern Italy were different means that the effects of the crisis on workforce participation may not be accurate. Third, estimating the effect of the migrant crisis by comparing Sicily to central and southern Italy might not be the most effective way to analyze the effects of the crisis on the Sicilian labor market. Like the rest of the Italian regions, Sicily is separated into several provinces and counties. The number of migrants is different from province to province, with certain provinces receiving a much larger number of migrants than others. While the Italian Labor Force Survey does ask participants what province they live in, the information is not available in the datasets from 2008-2013. As a result, I could not perform a comparison between provinces. Fourth, the fact that the closest variable to wages in the data is net monthly salary is not ideal. Although there is a general decline in salaries, quantifying the decline does not tell us

much about the labor market because the salaries are not market salaries, but take-home salaries. Lastly, in this paper, I analyze the short-term effects of the migrant crisis on the Sicilian labor market. The effects of the crisis on employment opportunities and wages are subject to change as the labor market adjusts to the influx of migrants.

7 References

- [1] Altonji, J. G., & Card, D. (1991). The effects of immigration on the labor market outcomes of less-skilled natives. In *Immigration, trade, and the labor market* (pp. 201-234). University of Chicago Press.
- [2] Angrist, J. D., & Kugler, A. D. (2003). Protective or counter-productive? labour market institutions and the effect of immigration on natives. *The Economic Journal*, 113(488), F302-F331.
- [3] Bağır, Y. K. (2018). Impact of the Syrian refugee influx on Turkish native workers: An ethnic enclave approach. *Central Bank Review*, 18(4), 129-147.
- [4] Borjas, G. J. (1995). The economic benefits from immigration. *Journal of economic perspectives*, 9(2), 3-22.
- [5] Borjas, G. J. (2003). The labor demand curve is downward sloping: Reexamining the impact of immigration on the labor market. *The quarterly journal of economics*, 118(4), 1335-1374.
- [6] Borjas, G. J. (2017). The wage impact of the Marielitos: A reappraisal. *ILR Review*, 70(5), 1077-1110.
- [7] Borjas, G. J., & Monras, J. (2017). The labour market consequences of refugee supply shocks. *Economic Policy*, 32(91), 361-413.
- [8] Card, D. (1990). The impact of the Mariel boatlift on the Miami labor market. *ILR Review*, 43(2), 245-257.
- [9] D'Amuri, F., Ottaviano, G. I., & Peri, G. (2010). The labor market impact of immigration in Western Germany in the 1990s. *European Economic Review*, 54(4), 550-570.
- [10] Fakhri, A., & Ibrahim, M. (2016). The impact of Syrian refugees on the labor market in neighboring countries: empirical evidence from Jordan. *Defence and Peace Economics*, 27(1), 64-86.
- [11] Friedberg, R. M. (2001). The impact of mass migration on the Israeli labor market. *The Quarterly Journal of Economics*, 116(4), 1373-1408.
- [12] Gehrsitz, M., & Ungerer, M. (2017). Jobs, crime, and votes: A short-run evaluation of the refugee crisis in Germany.
- [13] Ministero dell'Interno: Dipartimento pubblica sicurezza, Direzione centrale dell'immigrazione polizia frontier

- [14] Longhi, S., Nijkamp, P., & Poot, J. (2006). The impact of immigration on the employment of natives in regional labour markets: A meta-analysis.
- [15] Ottaviano, G. I., & Peri, G. (2008). *Immigration and national wages: Clarifying the theory and the empirics* (No. w14188). National Bureau of Economic Research.
- [16] Peri, G., & Yasenov, V. (2019). The Labor Market Effects of a Refugee Wave Synthetic Control Method Meets the Mariel Boatlift. *Journal of Human Resources*, 54(2), 267-309.
- [17] Pew Research Center (2017). *European asylum applications remained near record levels in 2016*. Retrieved from <https://www.pewresearch.org/fact-tank/2017/03/15/european-asylum-applications-remained-near-record-levels-in-2016/>.
- [18] Pew Research Center (2018). *At Least a Million Sub-Saharan African Moved to Europe Since 2010*. Retrieved from <https://www.pewresearch.org/global/2018/03/22/at-least-a-million-sub-saharan-africans-moved-to-europe-since-2010/>.
- [19] Zorlu, A., & Hartog, J. (2005). The effect of immigration on wages in three European countries. *Journal of population economics*, 18(1), 113-151.
- [20] UNHCR (2015). *Monthly Trends of Nationalities – Arrivals to Greece, Italy and Spain*. Retrieved from data2.unhcr.org/en/documents/details/46811.
- [21] UNHCR (2015). *Update #4 Italy – Sea Arrivals*. Retrieved from data2.unhcr.org/en/documents/details/46819.
- [22] UNHCR (2016). *Italy Country Update*. Retrieved from data2.unhcr.org/en/documents/details/53259.
- [23] UNHCR (2017). *Italy Sea Arrivals Dashboard*. Retrieved from data2.unhcr.org/en/documents/details/61547.
- [24] UNHCR (2017). *Key Data for Europe*. Retrieved from data2.unhcr.org/en/documents/details/62326.
- [25] UNHCR (2018). *Italy Weekly Snapshot*. Retrieved from data2.unhcr.org/en/documents/details/63394.

8 Tables

Table 1 - Characteristics of 20-64-Year-Old Italians in Sicily in 2013

	Sicily	Low-skilled	Low-skilled men	Low-skilled women
Unemployment rate	20.18%	22.44%	21.17%	24.99%
Workforce participation rate	52.24%	48.94%	67.47%	31.57%
Mean net monthly salary	1205.95	1110.43	1190.11	961.51
Mean duration of non-employment in months	83.18	85.77	54.37	120.17
Percent with a high school education or less	87.38%			
Percent with less than a high school education	50.26%	57.53%	57.55%	57.50%

Table 2 – F-statistics for Pre-Crisis Trend Test

Variable	ln(salary)	duration of non-employment	unemployed	not in the workforce
Sicity*2010	0.002 (0.007)	0.012 (1.798)	0.002 (0.038)	-0.069*** (0.014)
Sicity*2013	-0.003 (0.005)	-0.257 (1.922)	0.025 (0.018)	0.030* (0.017)
_cons	6.391*** (0.029)	6.205 (4.919)	0.218 (0.191)	1.619*** (0.089)
F test: Sicity*2010 = 0, Sicity*2013 = 0	0.27	0.01	2.03	30.99
p-value	0.7680	0.9911	0.3621	0.0000
R ²	0.29	0.22		
N	127,869	83,596	314,331	314,331

¹ Cluster robust errors in parentheses.

² All models include region, year and quarter fixed effects, as well as controls for age, family type, education and sex.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 2 – Ordinary Least Squares of Log Net Monthly Salary

Variable	(1)	(2)
Sicily*2014	-0.005 (0.005)	-0.003 (0.003)
Sicily*2015	-0.009** (0.004)	-0.003 (0.004)
Sicily*2016	0.001 (0.009)	0.004 (0.008)
Sicily*2017	-0.021** (0.007)	-0.014* (0.006)
Sicily*2018	-0.011 (0.007)	-0.011* (0.006)
Age		
25-29		0.121*** (0.007)
30-34		0.244*** (0.007)
35-39		0.334*** (0.008)
40-44		0.401*** (0.011)
45-49		0.454*** (0.010)
50-54		0.499*** (0.012)
55-59		0.531*** (0.014)
60-64		0.549*** (0.020)
Family type		
Couple with children		0.022*** (0.003)
Couple without children		0.013*** (0.002)
Male single parent		-0.022** (0.006)
Female single parent		-0.034*** (0.006)
Education		
Elementary school		0.090 (0.048)
Middle school		0.281*** (0.039)
High school 2-3 years		0.376*** (0.042)
High school 4-5 years		0.485*** (0.044)
Laurea		0.721*** (0.051)
Female		-0.298*** (0.005)
_cons	7.063*** (0.004)	6.377*** (0.048)
R2	0.01	0.29
N	269,306	265,647

¹ Cluster robust errors in parentheses.

² All models include region, year and quarter fixed effects.

³ A 2-3 years diploma does not allow for the possibility of applying to university.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 4 – Ordinary Least Squares of Log Net Monthly Salary

Variable	(1) Low-skilled Italians	(2) Low-skilled Italian men	(3) Low-skilled Italian women
Sicily*2014	-0.004 (0.004)	-0.003 (0.005)	-0.005 (0.007)
Sicily*2015	-0.013* (0.006)	-0.010 (0.008)	-0.022*** (0.006)
Sicily*2016	-0.002 (0.008)	-0.004 (0.008)	-0.000 (0.009)
Sicily*2017	-0.018* (0.008)	0.001 (0.006)	-0.051*** (0.011)
Sicily*2018	-0.007 (0.007)	-0.006 (0.007)	-0.015 (0.011)
Age			
25-29	0.140*** (0.007)	0.151*** (0.006)	0.120*** (0.011)
30-34	0.252*** (0.006)	0.271*** (0.006)	0.220*** (0.011)
35-39	0.319*** (0.009)	0.348*** (0.008)	0.268*** (0.011)
40-44	0.360*** (0.013)	0.388*** (0.010)	0.308*** (0.021)
45-49	0.394*** (0.012)	0.422*** (0.008)	0.341*** (0.021)
50-54	0.424*** (0.016)	0.437*** (0.010)	0.389*** (0.027)
55-59	0.446*** (0.019)	0.434*** (0.012)	0.441*** (0.037)
60-64	0.439*** (0.031)	0.416*** (0.020)	0.446*** (0.057)
Family type			
Couple with children	0.019*** (0.005)	0.068*** (0.003)	-0.047*** (0.012)
Couple without children	0.007 (0.004)	0.041*** (0.003)	-0.040*** (0.004)
Male single parent	-0.032** (0.010)	0.001 (0.010)	-0.055 (0.040)
Female single parent	-0.051*** (0.007)	-0.099*** (0.010)	-0.060*** (0.010)
Female	-0.292*** (0.008)		
_cons	6.802*** (0.011)	6.748*** (0.008)	6.599*** (0.022)
R^2	0.19	0.15	0.07
N	209,324	122,998	86,326

¹ Cluster robust errors in parentheses.

² All models include region, year and quarter fixed effects.

³ A 2-3 years diploma does not allow for the possibility of applying to university.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 5 – Margins from Multinomial Logit of Employment and Workforce Participation

Variable		(1)	(2)
Sicily*2014	Employed	-0.011 (0.008)	-0.007 (0.006)
	Unemployed	-0.002 (0.002)	-0.002 (0.002)
	Not in the workforce	0.013 (0.009)	0.009 (0.006)
Sicily*2015	Employed	-0.008 (0.006)	-0.008* (0.005)
	Unemployed	0.003 (0.002)	0.002 (0.002)
	Not in the workforce	0.006 (0.007)	0.005 (0.006)
Sicily*2016	Employed	-0.014** (0.006)	-0.014*** (0.004)
	Unemployed	0.006*** (0.002)	0.007** (0.003)
	Not in the workforce	0.008 (0.008)	0.008 (0.005)
Sicily*2017	Employed	-0.016** (0.007)	-0.014*** (0.005)
	Unemployed	0.005* (0.003)	0.005** (0.002)
	Not in the workforce	0.012 (0.008)	0.009 (0.006)
Sicily*2018	Employed	-0.022*** (0.008)	-0.021*** (0.006)
	Unemployed	0.010*** (0.002)	0.012*** (0.002)
	Not in the workforce	0.012 (0.009)	0.010 (0.006)
Age 25-29	Employed		0.191*** (0.019)
	Unemployed		0.010 (0.006)
	Not in the workforce		-0.200*** (0.024)
30-34	Employed		0.353*** (0.028)
	Unemployed		-0.023*** (0.006)
	Not in the workforce		-0.330*** (0.034)
35-39	Employed		0.418*** (0.023)
	Unemployed		-0.058*** (0.008)
	Not in the workforce		-0.359*** (0.029)
40-44	Employed		0.445*** (0.016)
	Unemployed		-0.076*** (0.009)
	Not in the workforce		-0.369*** (0.025)
45-49	Employed		0.456*** (0.012)
	Unemployed		-0.090*** (0.010)

	Not in the workforce	-0.366*** (0.021)
50-54	Employed	0.446*** (0.011)
	Unemployed	-0.103*** (0.009)
	Not in the workforce	-0.343*** (0.018)
55-59	Employed	0.377*** (0.008)
	Unemployed	-0.118*** (0.007)
	Not in the workforce	-0.259*** (0.007)
60-64	Employed	0.116*** (0.025)
	Unemployed	-0.137*** (0.006)
	Not in the workforce	0.021 (0.020)
Type of family		
Couple with children	Employed	-0.017*** (0.007)
	Unemployed	-0.020*** (0.003)
	Not in the workforce	0.037*** (0.008)
Couple without children	Employed	-0.022*** (0.007)
	Unemployed	-0.023*** (0.004)
	Not in the workforce	0.045*** (0.009)
Male single parent	Employed	-0.067*** (0.013)
	Unemployed	0.004 (0.003)
	Not in the workforce	0.063*** (0.011)
Female single parent	Employed	-0.039*** (0.004)
	Unemployed	0.015*** (0.002)
	Not in the workforce	0.024*** (0.003)
Education		
Elementary school	Employed	0.117*** (0.015)
	Unemployed	0.040*** (0.013)
	Not in the workforce	-0.157*** (0.025)
Middle school	Employed	0.250*** (0.010)
	Unemployed	0.027** (0.012)
	Not in the workforce	-0.277*** (0.020)
High school 2-3 years	Employed	0.329*** (0.010)
	Unemployed	0.028** (0.012)

	Not in the workforce	-0.356*** (0.017)
High school 4-5 years	Employed	0.408*** (0.008)
	Unemployed	-0.001 (0.013)
	Not in the workforce	-0.407*** (0.010)
Laurea	Employed	0.511*** (0.019)
	Unemployed	-0.007 (0.014)
	Not in the workforce	-0.504*** (0.013)
Female	Employed	-0.219*** (0.016)
	Unemployed	-0.013*** (0.004)
	Not in the workforce	0.232*** (0.020)
<i>N</i>	645,897	635,567

¹ Cluster robust errors in parentheses.

² All models include region, year and quarter fixed effects.

³ A 2-3 years diploma does not allow for the possibility of applying to university.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 6 – Margins from Multinomial Logit of Employment and Workforce Participation

Variable		(1) Low-skilled Italians	(2) Low-skilled Italian men	(3) Low-skilled Italian women
Sicily*2014	Employed	-0.009 (0.006)	-0.005 (0.007)	-0.011** (0.004)
	Unemployed	-0.001 (0.002)	-0.002 (0.003)	-0.002 (0.002)
	Not in the workforce	0.011 (0.007)	0.007 (0.008)	0.013** (0.006)
Sicily*2015	Employed	-0.010** (0.005)	-0.014*** (0.005)	-0.004 (0.007)
	Unemployed	0.001 (0.003)	-0.000 (0.004)	0.001 (0.003)
	Not in the workforce	0.009 (0.007)	0.014** (0.007)	0.003 (0.008)
Sicily*2016	Employed	-0.019*** (0.005)	-0.028*** (0.006)	-0.005 (0.008)
	Unemployed	0.005* (0.003)	0.005 (0.004)	0.004 (0.002)
	Not in the workforce	0.014** (0.007)	0.023*** (0.008)	0.002 (0.009)
Sicily*2017	Employed	-0.019*** (0.005)	-0.031*** (0.008)	-0.004 (0.008)
	Unemployed	0.004 (0.003)	0.006 (0.005)	0.002 (0.002)
	Not in the workforce	0.015** (0.006)	0.025*** (0.010)	0.003 (0.009)
Sicily*2018	Employed	-0.027*** (0.006)	-0.037*** (0.004)	-0.014 (0.009)
	Unemployed	0.010*** (0.002)	0.012*** (0.003)	0.008*** (0.003)
	Not in the workforce	0.016** (0.007)	0.025*** (0.006)	0.006 (0.009)
Age 25-29	Employed	0.236*** (0.023)	0.270*** (0.020)	0.212*** (0.025)
	Unemployed	-0.003 (0.006)	-0.019*** (0.006)	0.013 (0.009)
	Not in the workforce	-0.232*** (0.029)	-0.251*** (0.023)	-0.225*** (0.033)
30-34	Employed	0.347*** (0.031)	0.408*** (0.027)	0.288*** (0.034)
	Unemployed	-0.032*** (0.006)	-0.045*** (0.004)	-0.023** (0.010)
	Not in the workforce	-0.315*** (0.036)	-0.363*** (0.027)	-0.265*** (0.044)
35-39	Employed	0.383*** (0.027)	0.467*** (0.025)	0.297*** (0.029)
	Unemployed	-0.056*** (0.008)	-0.076*** (0.005)	-0.040*** (0.012)
	Not in the workforce	-0.326*** (0.034)	-0.391*** (0.028)	-0.257*** (0.041)
40-44	Employed	0.392*** (0.020)	0.481*** (0.023)	0.299*** (0.021)
	Unemployed	-0.069*** (0.009)	-0.088*** (0.005)	-0.053*** (0.014)
	Not in the workforce	-0.323*** (0.029)	-0.393*** (0.027)	-0.246*** (0.035)
45-49	Employed	0.390*** (0.016)	0.477*** (0.023)	0.298*** (0.015)

	Unemployed	-0.080*** (0.010)	-0.093*** (0.005)	-0.072*** (0.017)
	Not in the workforce	-0.310*** (0.026)	-0.385*** (0.026)	-0.226*** (0.031)
50-54	Employed	0.368*** (0.016)	0.459*** (0.019)	0.269*** (0.020)
	Unemployed	-0.094*** (0.009)	-0.100*** (0.006)	-0.092*** (0.014)
	Not in the workforce	-0.274*** (0.024)	-0.359*** (0.023)	-0.177*** (0.033)
55-59	Employed	0.272*** (0.008)	0.345*** (0.012)	0.183*** (0.013)
	Unemployed	-0.111*** (0.007)	-0.111*** (0.004)	-0.113*** (0.014)
	Not in the workforce	-0.162*** (0.010)	-0.234*** (0.014)	-0.069*** (0.022)
60-64	Employed	0.001 (0.020)	0.021 (0.028)	-0.036*** (0.011)
	Unemployed	-0.134*** (0.006)	-0.142*** (0.004)	-0.130*** (0.012)
	Not in the workforce	0.132*** (0.017)	0.121*** (0.029)	0.166*** (0.015)
Family type				
Couple with children	Employed	-0.011 (0.010)	0.074*** (0.006)	-0.105*** (0.016)
	Unemployed	-0.023*** (0.003)	-0.015*** (0.005)	-0.035*** (0.004)
	Not in the workforce	0.034*** (0.010)	-0.058*** (0.008)	0.139*** (0.015)
Couple without children	Employed	-0.030*** (0.010)	0.035*** (0.007)	-0.102*** (0.014)
	Unemployed	-0.024*** (0.005)	-0.017*** (0.007)	-0.033*** (0.003)
	Not in the workforce	0.054*** (0.010)	-0.018 (0.013)	0.134*** (0.013)
Male single parent	Employed	-0.076*** (0.015)	-0.023** (0.012)	-0.114*** (0.029)
	Unemployed	0.002 (0.004)	0.006 (0.005)	-0.003 (0.005)
	Not in the workforce	0.074*** (0.012)	0.017** (0.008)	0.117*** (0.027)
Female single parent	Employed	-0.042*** (0.005)	-0.124*** (0.010)	-0.036*** (0.008)
	Unemployed	0.017*** (0.002)	0.026*** (0.002)	0.007 (0.006)
	Not in the workforce	0.026*** (0.004)	0.098*** (0.008)	0.029*** (0.006)
Female	Employed	-0.244*** (0.019)		
	Unemployed	-0.019*** (0.004)		
	Not in the workforce	0.262*** (0.023)		
<i>N</i>		531,993	264,788	267,205

¹ Cluster robust errors in parentheses.

² All models include region, year and quarter fixed effects.

³ A 2-3 years diploma does not allow for the possibility of applying to university.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 7 – Ordinary Least Squares of Duration of Non-Employment

Variable	(1)	(2)
Sicily*2014	3.308** (1.298)	0.861 (1.113)
Sicily*2015	6.976*** (1.170)	6.134*** (0.760)
Sicily*2016	9.355*** (1.785)	7.843*** (1.517)
Sicily*2017	9.699*** (2.038)	7.788*** (1.190)
Sicily*2018	10.662** (3.908)	6.898** (2.820)
Age		
25-29		9.254*** (1.264)
30-34		13.657*** (1.944)
35-39		25.103*** (3.064)
40-44		41.720*** (2.061)
45-49		62.360*** (1.752)
50-54		83.717*** (1.868)
55-59		93.556*** (3.383)
60-64		90.397*** (3.267)
Family type		
Couple with children		9.567** (3.284)
Couple without children		5.633* (2.564)
Male single parent		5.043 (3.624)
Female single parent		0.319 (1.847)
Education		
Elementary school		-1.590 (3.825)
Middle school		-16.572*** (2.553)
High school 2-3 years		-20.199*** (4.425)
High school 4-5 years		-35.717*** (3.323)
Laurea		-60.759*** (4.026)
Female		68.309*** (4.113)
_cons	98.456*** (2.348)	2.354 (5.622)
R^2	0.004	0.22
N	169,356	166,343

¹ Cluster robust errors in parentheses.

² All models include region, year and quarter fixed effects.

³ A 2-3 years diploma does not allow for the possibility of applying to university.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 8 – Ordinary Least Squares of Duration of Non-Employment

Variable	(1) Low-skilled Italians	(2) Low-skilled Italian men	(3) Low-skilled Italian women
Sicily*2014	2.211 (1.348)	6.085*** (1.073)	-0.044 (2.078)
Sicily*2015	7.286*** (0.908)	6.025*** (1.597)	9.450*** (1.348)
Sicily*2016	7.248*** (1.573)	6.959*** (1.621)	8.500*** (1.715)
Sicily*2017	8.215*** (1.482)	10.935*** (2.563)	6.886*** (1.173)
Sicily*2018	7.945** (3.353)	12.795*** (3.416)	2.517 (3.655)
Age			
25-29	9.056*** (0.953)	8.291*** (1.583)	12.075*** (1.392)
30-34	16.027*** (1.411)	14.035*** (1.296)	29.085*** (2.042)
35-39	29.743*** (2.147)	20.683*** (1.225)	52.268*** (3.534)
40-44	48.453*** (1.682)	26.858*** (1.127)	78.856*** (3.418)
45-49	70.844*** (1.898)	36.276*** (2.014)	109.258*** (4.321)
50-54	93.651*** (3.216)	45.151*** (1.467)	142.848*** (4.922)
55-59	105.747*** (3.483)	48.242*** (3.364)	169.245*** (6.880)
60-64	106.145*** (4.036)	66.350*** (1.733)	161.854*** (7.910)
Family Type			
Couple with children	9.911** (3.538)	-19.642*** (2.499)	48.526*** (3.294)
Couple without children	7.469** (3.155)	-14.790*** (3.606)	32.365*** (3.557)
Male single parent	6.224 (3.679)	-6.852 (3.921)	11.403 (6.998)
Female single parent	0.080 (2.167)	6.682** (2.565)	11.932*** (3.166)
Female	71.944*** (4.177)		
_cons	-30.373*** (7.221)	26.797*** (2.942)	-29.917*** (8.439)
R^2	0.20	0.12	0.17
N	151,762	67,006	84,756

¹ Cluster robust errors in parentheses.

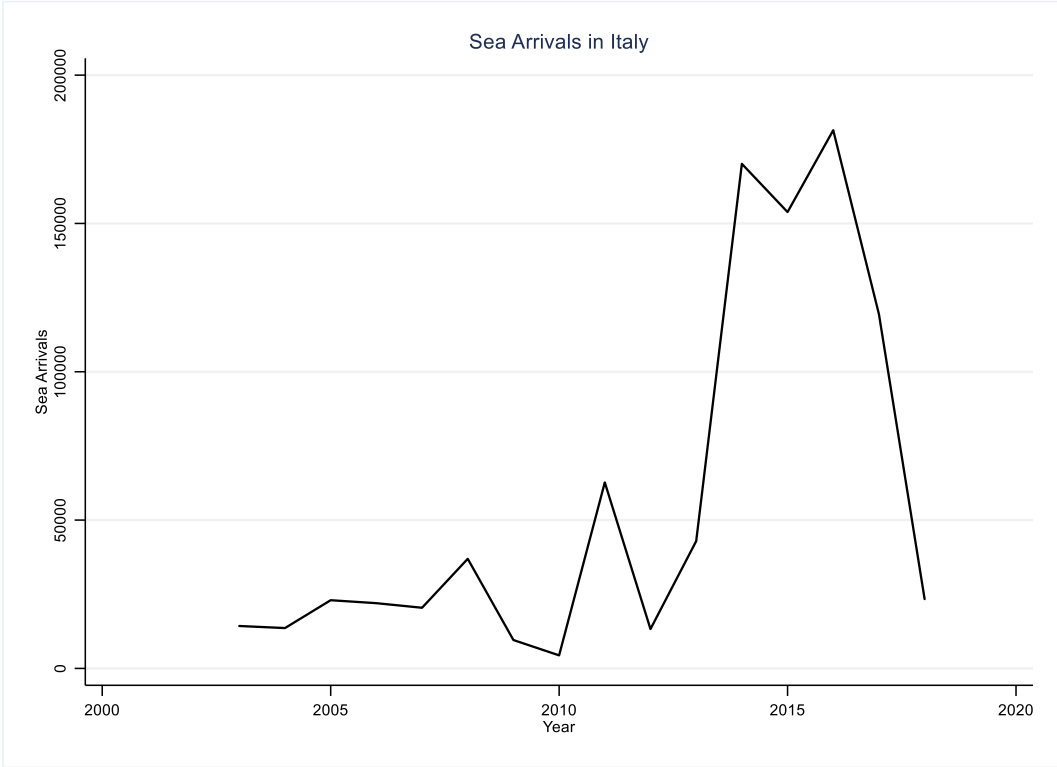
² All models include region, year and quarter fixed effects.

³ A 2-3 years diploma does not allow for the possibility of applying to university.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

9 Figures

Figure 1 – Sea Arrivals in Italy between 2003 and 2018



Data source: Italy's Ministry of the Interior