

Jordan's Mariel Boatlift: An Examination of Effects of an Exogenous Labor Market Shock

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Abstract

This work contributes to the extant research on how the Syrian refugee crisis impacted the Jordanian labor market. Prior work examines the labor-market impact by focusing on lower-skilled labor and wages, isolated from Jordan's overall economic conditions. I draw on a previously unused data source to extend the current literature by considering the differential effects of the crisis on both high- and low-skilled workers. I find that while all categories of workers in Jordan saw lower wages following the refugee influx consequent to the Syrian civil war, the effect was smaller for low-skilled laborers. This finding suggests that while the prevailing conditions of Jordan's economy may have resulted in lower wages, the Syrian refugees may have created a net positive labor demand shock for existing low-skilled workers.

JEL Codes: O20, J15, J01

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I. Introduction

A leading concern of many governments around the world is that an influx of foreign laborers will depress native wages and compete with native workers for well-paying jobs. In the United States, such worries had compelled the US Citizenship and Immigration Services under President Donald Trump to consider steps that would drastically cut back on immigration, especially of potentially low-wage workers, to prevent a negative welfare effect on the lowest percentiles of US income earners (CFR 2015). Evidence supporting this concern is slim, however—at least within the United States.

This paper examines the impacts of an exogenous positive labor market shock, the influx of Syrian refugees, on Jordan's labor market. I use data from the Statistical Yearbook series produced by the

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Jordanian Department of Statistics to conduct this examination. My work looks at the differential effect of the migration on the real wages and unemployment levels of high- and low-skilled laborers. I find that while the overall wage rates decreased and unemployment levels increased for both categories of laborers during 2010 through 2015 (the period in question), the effects were smaller for low-skilled laborers. This finding suggests that the influx of Syrian refugees may have led to an increase in labor demand and a decrease in low-skilled product prices that offset the pure supply effects of the increase in labor supply.

Section 2 examines the prior research on migration events and the subsequent impacts on labor markets. These give us a framework for understanding and thinking about the Syrian refugee crisis and the Jordanian labor market. Section 3 gives an overview of the Syrian refugee crisis to provide context and background to my study. Section 4 delineates the macroeconomic conditions prevailing in the Jordanian state. Section 5 summarizes the available data and my analytical methodology. Section 6 applies my framework to the available data. Section 7 summarizes my findings and describes the challenges facing the Jordanian government. It also offers suggestions for future research.

II. Previous Work and Analytical Framework

Several researchers have examined the impacts of immigration on national and local labor markets. Butcher and Card (1991) find relatively little effect of increased immigration on the native labor market. Friedberg and Hunt (1995) find that a 10 percent increase in immigrants in the host economy decreases native wages by less than 1 percent, with no evidence for reduction in native employment. Peri (2007), in a study of immigration to California spanning 1960 to 2004, finds no negative effects of immigrants on native labor. In fact, he finds the opposite—since immigrants were imperfect substitutes for native workers, they stimulated the demand and wages for most workers.

Orrenius and Zavodny (2007) find that newly arriving immigrants have little effect on the wages of native workers—although immigrants adjusting their status to become permanent residents do. This finding signals increasing labor substitutability as a function of time. Similar evidence exists for other countries, to a lesser extent. Gavosto, Venturini, and Villosio (1999) find that an increased inflow of immigrants raised the wages of native low-skilled workers in Italy.

Dustmann, Fabbri, and Preston (2005), in a report commissioned by the British Home Office, find little to no effect on unemployment rates for native workers of the United Kingdom with increased immigration—which, in fact, was found to raise domestic wages.

There are multiple reasons for such findings. The naive view about a potential decrease in wages considers only one aspect of a positive shock in the labor market—that is, an increase in supply decreases the value of all existing workers, *ceteris paribus*. Assuming workers are paid their opportunity costs, such an increase should decrease their wages. However, other factors are at play as well. Immigrants who self-select are likely to possess an equal if not higher level of human capital than the average native worker. Immigrants also tend to move to cities whose labor markets are more robust and can absorb their skills well. Further, the native labor force is likely to be very mobile, at least in comparison to new immigrant workers.

Immigration also has substantial complementarity effects. More workers of a given group (say, low skilled) allow firms to expand and hire other groups of workers, increasing average wages. The naive view ignores this effect. Having more workers also leads firms to increase their investments (and capital stock), increasing the returns to labor (i.e., wages) in the long run, negating the partial supply effect of the increase in migrant workers. Immigrants can also bring in new technologies of production, increasing the efficiency of the economy.

Finally, it is reasonable to think that people tend to consume the product of labor of workers closest to their own skill level. Goods produced by higher skilled workers will obviously incur higher labor costs, *ceteris paribus*, as compensation for the additional human capital accumulation, and thus will cost more, implying that higher wage workers are more likely to be able to afford them. The reverse is also true. For example, the typical consumer of food prepared by a fast-food worker is likely a person with similar education and experience. Thus, an increase in immigration also has a demand pull effect, increasing both employment and wages for existing labor. The net outcome of a rise in the number of immigrants depends on which effect dominates in a particular market.

Because of endogeneity, it is unwise to study correlations between wages and concentrations of immigrants as evidence for effects of immigration on native workers. A natural experiment that suddenly increases the number of workers in the economy would be a better model for an exogenous labor market shock, but these are rare. A seminal study on such a natural experiment, by which my

work is inspired, is by Card (1990). He studies the impact of the Mariel Boatlift of 1980 on Miami's labor market, which expanded by 7 percent as a result. His findings suggest no effect of the increased number of workers on the wages or unemployment rates of the existing labor force, even among the Cuban workers already in Miami for whom the new workers were a closer substitute.

Such a natural experiment occurred recently in Jordan due to the Syrian Civil War, which began in early 2011 and was still ongoing as of July 2021, albeit to a lesser extent. As a migration, the scale of the Syrian ingress into Jordan dwarfs the Mariel Boatlift.

Ajluni and Kawar (2014) and Stave and Hillesund (2015) in a comprehensive study for the International Labour Organization (ILO) suggest that Syrian refugees have reduced the employment opportunities for Jordanians, especially for those ages 15 to 24, those in the informal sector, and those in the construction and wholesale distribution sectors. The ILO found that, generally, these sectors have experienced increased unemployment and depressed wages.

In my opinion, however, it is prudent to study the performance of the low-skilled sector relative to the high-skilled sector to account for any common malaise facing the entire economy. Thus, I examine the relative changes to the wages and unemployment levels of various segments of the working population to determine whether the influx of low-skilled labor as part of the Syrian refugee crisis is indeed the reason why Jordan's poorer workers are doing so badly.

I believe that the ILO's conclusions may not be completely accurate and omit a major chunk of the picture. Before I elaborate on my findings based on this premise, however, I provide an overview of the background for the research.

III. Syrian Refugees in Jordan

As of July 2021, the United Nations Human Rights Commission estimates that almost 7 million Syrians, out of a prewar population of 22 million, are refugees outside the country, and another 7 million are displaced internally (UNHCR 2021). Turkey has been the largest recipient, in absolute terms, of Syrian refugees, taking in 3 million; Turkey had a 2018 population of 81 million (Karasapan 2019). As a proportion of its population, Jordan has been far more generous. With a population of about 9 million, it has allowed in 1.2 million Syrian refugees, an increase of more than 15 percent in its population.

Officially, Jordan has records for 655,000 Syrian refugees (ACAPS 2016), implying that roughly half are outside of government supervision. Most refugees in Jordan, unlike those in other countries, have been allowed to relocate outside of refugee camps. The lack of free provisions has forced them to seek work, often under the table. Close to 80 percent of refugees live outside the camps, primarily concentrated in urban and rural areas in the northern governorates of Jordan—the population centers of the country. The remaining Syrian refugees live in camps, mainly Zaatari Camp (officially 80,000), Azraq Camp (36,040), and the Emirati Jordanian Camp (7,000).

Figure 1. Timeline of the Syrian refugee crisis

| | | |
|------|-------------|--|
| 2011 | March | Beginning of Syrian unrest |
| | May | Families begin to flee Syria |
| 2012 | July | Za'atari refugee camp forms in Jordan |
| | December | Half a million Syrian refugees worldwide |
| 2013 | March | One million Syrian refugees registered with UNHCR |
| 2014 | June | Three million Syrian refugees worldwide. Nearly half of Syria's 22 million population requires immediate humanitarian assistance |
| | | Four million Syrian refugees worldwide |
| 2015 | | Jordan introduces biometrics for refugees |
| 2016 | July–August | Battle for Aleppo; crisis widens |
| 2017 | January–May | Jordan deports about 400 registered Syrian refugees per month. 654,000 Syrian refugees in Jordan. |
| | March | Five million Syrian refugees worldwide |
| | July | Job camp set up in Jordan with UNHCR; ceasefire agreement reached |
| 2018 | April | 661,800 Syrian refugees in Jordan |

Sources: HRW (2017); UNHCR (2018); UNICEF (2019).

As a result, whether legally or illegally, Syrians have become part of the Jordanian workforce. The Jordanian government normally fines employers for hiring illegal workers, but in April 2016, it announced a ninety-day grace period during which it waived all fines and allowed employers to freely obtain work permits for their informal Syrian workers without paying the usual \$170 to \$1,270 USD fee. The UN and the ILO have launched programs to find work for Syrian refugees, including weekly job fairs (UN News 2016). Nevertheless, Syrian workers outside the refugee camps remain mired in poverty. According to UN data, nine in ten Syrian refugees live below the Jordanian poverty line of \$87 a month (ECHO 2021). Thus, this series of events, as unfortunate as they are, provides a natural experiment of a significant and positive low-skilled labor supply shock to an economy.

This paper provides a statistical summary of the aftermath of the refugee intake on Jordan's labor market based on data released by Jordan's Ministry of Labor and its Department of Statistics. The policy implication of this study is whether and to what extent governments should restrict the immigration of labor to protect native workers from competition if the latter is a policy goal. While microdata akin to those used in Card's analysis are not available, I provide wage rates across various categories of occupations from 2010 (right before the refugee influx) through 2016, the last year when refugees were allowed to immigrate without major restrictions.

As of April 2018, data from the United Nations High Commissioner for Refugees (UNHCR) indicate an official estimate of 661,800 refugees of Syrian origin in the country. The 2015 decennial census of Jordan indicates a figure roughly double that (1.3 million), an overwhelming majority of all non-Jordanians living and working the country (Jordan DOS 2018). Only about 8 percent of refugees live in camps, with the rest living among the native population (UNHCR 2021). The governorates of Amman and Irbid hold more than 50 percent of the refugee population, with Zarqa and Mafrq following suit with about 5 percent each (UNHCR 2017).

The gender ratio is roughly one to one. The refugees are a young group: 75 percent of them are no older than thirty. Of the almost 800,000 refugees older than thirteen, roughly two-thirds are married. Roughly 14 percent of those older than thirteen are illiterate, while an equal number can merely read and write, as opposed to possessing significant amounts of education. As compared to the average ten years of schooling among the native Jordanian population, the Syrian refugees have completed fewer than seven years on average—less than the completion of middle school (Krafft et al. 2018).

While the UNHCR's 1951 Refugee Convention, to which Jordan is party, calls for certain treatment standards for the Syrians, Jordan classifies its immigrant population as guests rather than refugees (ILO 2015). Thus, it is not obligated to recognize the provisions of the treaty (HRW 2006); it can be and is discretionary with respect to its treatment of displaced Syrians. Since the beginning of the influx in 2011, Jordan has always been concerned with the possibility of its demographics being altered irreparably by the Syrians, who have also been looked at by the country's security apparatus with some suspicion as a population very susceptible to recruitment by terrorist groups such as Al Qaeda (Abbadī 2015).

Despite these concerns, Jordan had a relatively open border policy toward the Syrians from 2011 through 2014 (Francis 2015). Francis notes, however, that consequent to security incidents, Jordan has clamped down on cross-border movements. A case in point would be the Jaber crossing, which closed after terrorists took over the Syrian side of the location in 2015. An ISIS suicide attack against the Rukban army post in June 2016 shut down the Rukban and Hadalat border crossings, which have not been open since then (Black 2016). Further, even when Jordan formally admitted refugees, it routinely denied entry to Palestinian and Iraqi refugees residing in Syria, unmarried men of fighting age, and persons without legal documents. Such people entered the country illegally, often through human trafficking networks (HRW 2015).

Within Jordan, Syrian refugees face challenges related to employment and declining real incomes related to increasing costs of living, particularly for rent, water, and energy, due to macroeconomic factors. Officially, once within refugee camps, Syrians could leave to live and work among native Jordanians only if sponsored by a Jordanian citizen. While this policy was loosely enforced initially, in 2015, officials became very strict before canceling the process altogether (Care 2018).

Instead, the government introduced an “urban verification exercise” consisting of biometric registration with the Ministry of Interior. Qualifications were strict and people who did not possess asylum-seeker certificates, or who had previously left the camps without a sponsor, were denied registration. Further, the fees were steep for many. A biometric card has become a precondition for a work permit, essential for legally working in the kingdom. Rather than bear this financial burden, more than 90 percent of Syrians are in the informal labor market (Care 2018). Water shortages have only added to their problems, as have heightened tensions between the refugees and the native Jordanians.

On the brighter side, thanks to nongovernmental organizations and charitable entities, Syrian refugees’ access to health care and education has become relatively better. According to Human Rights Watch (2020), more than 60 percent of refugee children are enrolled in school, although dropout rates are high. Medical service is available to everyone with the Ministry of Interior card. However, caveats include mandatory patient payment upfront and locational constraints.

IV. The Jordanian Economy

Jordan's economic conditions provide the backdrop for the influx of migrants. Macroeconomic conditions might lead to shifts in the overall labor market that were contemporaneous but not directly caused by the refugee crisis.

Table 1 depicts the real annual GDP growth rate of Jordan, the world, and the Arab world (World Bank 2016). Before the global financial crisis of 2008, Jordan's growth rate was greater than that of both the world and the Arab world. Per the CIA World Factbook (2018), Jordan benefited from the liberalization of the economy and privatization of state-owned companies in the 2000s, which attracted substantial foreign investment. As a result, the economy grew at a sustained 8 percent annual rate, a phenomenon that ended at the onset of the global financial crisis in 2008.

Then, like most countries, Jordan's economic growth rate dropped in 2008 and 2009. Since then, Jordan's economic growth has not recovered as well as that of the Arab world; it has lagged every year except 2014 (CIA 2018). These figures suggest that a more sustained pall has fallen over the Jordanian economy.

Table 1. GDP Growth Rates (%), 2006–2015

| Year | Jordan | World | Arab World |
|------|--------|--------|------------|
| 2006 | 8.093 | 4.306 | 6.496 |
| 2007 | 8.176 | 4.229 | 4.571 |
| 2008 | 7.232 | 1.820 | 5.837 |
| 2009 | 5.477 | -1.735 | 0.427 |
| 2010 | 2.311 | 4.312 | 4.772 |
| 2011 | 2.587 | 3.182 | 3.630 |
| 2012 | 2.651 | 2.507 | 6.658 |
| 2013 | 2.829 | 2.616 | 3.166 |
| 2014 | 3.096 | 2.856 | 2.457 |
| 2015 | 2.392 | 2.856 | 3.239 |

Source: World Bank (2016).

Among other factors, the World Bank suggests that ongoing conflicts and other external influences have strained Jordan's economy. It blames "adverse regional developments," which would include the wars in Syria and Iraq (Devex 2021). These, according to its report, have led to an unprecedented refugee influx, disrupted

trade routes, lowered investments, and decreased tourism inflows. The result has been significantly lower economic growth in Jordan.

The West Asia-North Africa Institute (Lockhart and Alhajahmad 2017) notes that Jordanian growth has remained slower than pre-crisis/Syrian civil war rates and that unemployment has continued to rise. The combination of the two has been attributed to the influx of Syrian refugees as well as the deterioration in Jordan's external trade position due to the region's overall political situation.

V. Data and Methodology

I proceed similarly to Card (1990), comparing changes in labor conditions between Jordan and countries with comparable macroeconomic characteristics. Unlike Card, who selected four cities based on their racial composition, size, and economic growth rates, I selected countries based on cluster analysis taking ten macroeconomic variables as of 2010, the starting point of my investigation. Cluster analysis starts off with no prior information about the group membership or cluster of any elements of the sample.

This process provided a list of fifty-three countries after discarding the ones for which data were not completely available. I could then, without any other underlying bias, select countries with similar characteristics to Jordan but that did not take in or absorb as many refugees. This selection allowed me to determine whether Jordan was indeed harmed by the refugees' influx. Section 6, "Findings," shows how Jordan performed relative to its computationally selected peers. I also looked at the change in real wages from 2010 to 2015 of workers in basic occupations versus those in the professional sectors.

Macroeconomic variables are from the Penn World Tables (Feenstra, Inklaar, and Timmer 2015). Data characterizing the labor market of Jordan come from the Statistical Yearbooks published each year by the Jordanian Department of Statistics. These include wages and number of hours worked broken down by sex and occupation for 2010 through 2016. Data were converted to PPP dollars using numbers retrieved from the St. Louis Fed's database. Labor data on other countries come from the ILO's database and are supplemented where appropriate via data retrieved from each country's statistical databases.

Unfortunately, the available data on Jordan's labor markets are limited. Unlike in the United States, there are no public use microdata

sets. The Statistical Yearbooks provide average wage rates and employment levels for several job categories. These job categories range from “clerks” and “elementary occupations” to “professionals” and “legislators, senior officials, and managers.” In addition to wage rates for each job category, the Statistical Yearbook series includes information about the unemployment rates based on educational levels (e.g., “less than secondary,” “bachelor and above”). I use these data to compare the difference in changes between job categories and educational levels before and after the start of the war (see table 3 in the appendix).

VI. Findings

Jordan’s government has expressed concern about the strain on the native population from the enormous number of refugees. Jordan is a middle-income country at best, with a per-capita PPP income of \$8,960 (World Bank 2016). A pure positive labor supply effect of refugees would, therefore, harm the lowest-earning, lowest-skilled workers the most. This was the administration’s assertion right before clamping down on immigration in 2015 and attempting to deport as many Syrian workers as possible. Human Rights Watch (2017) claims that Jordan was forcibly deporting an average of 400 refugees a month through 2016 and 2017—mainly the heads of household. Once the head of a household, usually the breadwinner of the family in such cultures, departs, the other members generally have no choice but to self-deport. Human rights groups fear that other countries that have taken in a sizeable Syrian population, including Lebanon and Turkey, may follow.

Surface evidence suggests that the Jordanian government may be justified in its worry. As opposed to the fifty-three comparison countries in my sample, which saw an average labor-force-weighted increase in real monthly wages of almost 28 percent over 2010 through 2015, Jordan experienced an 11 percent decline. This decline is significant across the usual confidence levels.

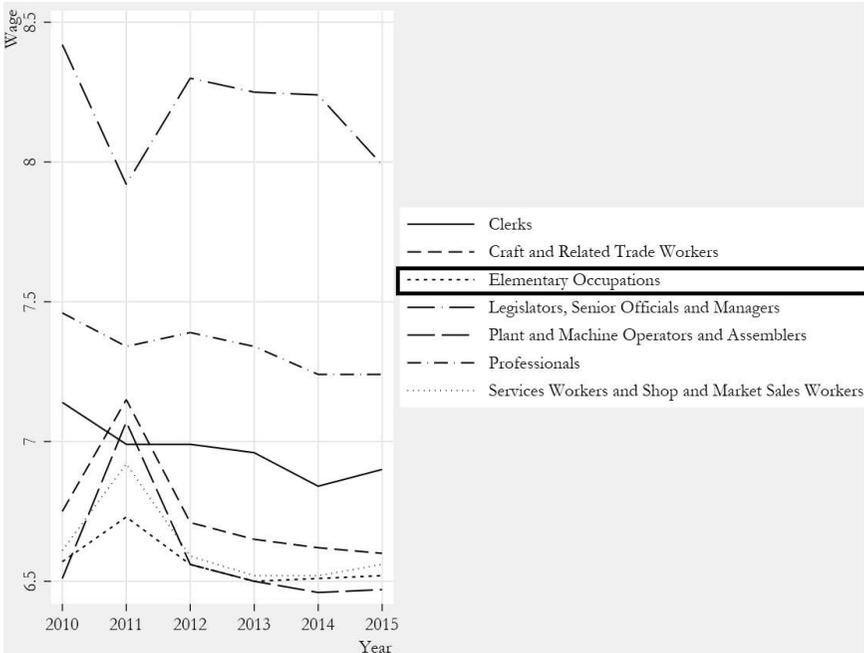
The unemployment levels show a similar relatively adverse movement. My comparison sample saw its unemployment rate decrease by an average of 0.14 percentage points, while Jordan saw its unemployment rate increase by 0.62 percentage points. These discrepancies held even after controlling for the quality of institutions, proxied by the level of economic freedom. All else being equal, I expect countries with less economic rigidity to bounce back after recessions quicker than those with very regulated economies.

To confirm whether the reduction in wages was due to the refugees, I compare the relative changes between high-skilled, high-wage earners and those on the low end of the income and skill scales. The Statistical Yearbooks provide granular data for wages and number of work hours per month for various categories of workers. I ignore the wages of government legislators because they are driven by law and not by market forces.

Figure 2 depicts the movements of real wages in the country from 2010 through 2015. Figure 3 depicts the net change in real wages over that period. The occupations listed in the Statistical Yearbook suffered an overall real wage decline of 11 percent from 2010 through 2015. However, unskilled workers faced a decline of only 5 percent, as compared to the professional class of workers, who saw wages go down by almost 7 percent. This finding implies that the refugees are very unlikely to have pushed wages down, since most immigrants would have joined the workforce at the lower end of the skills spectrum. The hardest hit were country's legislators and senior government officials, who saw a decline of 43 percent in their wages (see table 2 in the appendix for details).

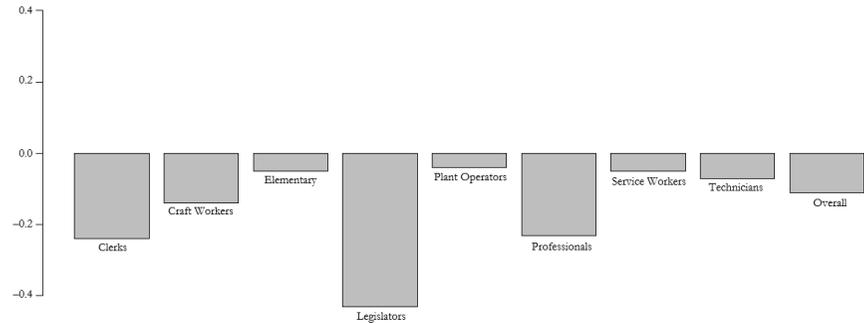
One possible explanation for the lower-than-average decline in low-skilled worker wages is the demand-pull effect of the refugees adding to the number of consumers. In addition, I would also expect an outward shift of the supply curve for goods and services produced by low-skilled workers due to the lower labor costs. Since the lower-skilled native workers are also likely the consumers of low-skilled-based products, their real income would increase.

Figure 2. Log real wages: Jordan (2010–2015), by occupation



Source: Created by the author using data from Jordan’s Statistical Yearbooks.

Figure 3. Jordan’s change in wages by occupation (log wage growth), 2010–2015



Source: Created by the author using data from Jordan’s Statistical Yearbooks.

Jordan does not release unemployment rates by educational qualifications but does release the educational levels of the unemployed as a proportion of the total number. Among the unemployed individuals in Jordan, those with less than a secondary education increased by 0.7 percentage points. However, those with a bachelor’s degree or higher saw their share of the unemployed increase from 34.2 percent to 39.1 percent, an increase of 4.9

percentage points. Thus, from 2010 through 2015, it seems that the highly educated fared far worse than those with little education. Since the average Syrian refugee has significantly less education than the average Jordanian, if the supply effect dominated, I would expect a disparate effect on the employment numbers of the poorly educated natives. However, this effect does not seem to exist.

If we assume a limited relationship between low-skilled and high-skilled labor markets (i.e., that these are imperfect substitutes in line with Peri [2007]) we can interpret the impacts on high-skilled labor markets as the effect of overall macroeconomic conditions. If these macroeconomic conditions have similar effects on both low- and high-skilled labor markets, then in absence of an effect from the refugee crisis, we should expect to see a similar change in both markets. We could then interpret the difference in these shifts as an impact of the refugee crisis. This interpretation approximates a difference-in-differences analysis that would rely on microdata (e.g., the United States' Current Population Survey, which Card used to examine the Mariel Boat Lift).

VII. Implications of Numbers and Explanations

Given the framework and assumptions established above, the data suggest that while the overall macroeconomic conditions led to a general decrease in labor demand, the Syrian refugee crisis may have caused a countervailing increase in labor demand and a decline in real prices for the lower end. This increase would be the case if refugees consumed the products that low-skilled Jordanians produced (e.g., food, clothing). This result aligns with the findings of Gavosto, Venturini, and Villosio (1999) and Dustmann, Fabbri, and Preston (2005) that immigration had positive effects on wages for native workers.

Jordan's government has its work cut out in determining its best course of action regarding the numerous refugees within its borders. Its economic problems and wage stagnation, however, go beyond this mass immigration, although the ultimate cause of both its refugee crisis and economic stagnation is, to some extent, the wars in Iraq and Syria. The war has devastated its trade prospects with its two traditional partners, while record-low oil prices have dampened Saudi Arabia's ability to act as a major destination for Jordanian goods (Bowler 2015). These events, combined with Jordan's existing poor fiscal management, have created a stagnant economy and declining wages.

As early as 2011, before the inflow of refugees became a deluge, public debt was already 60 percent of GDP (World Bank 2016). This figure increased to 90 percent by 2015. A major contributor is the mismanagement of the state-owned National Electric Power Company (Al-Khalidi 2013), the country's monopoly distributor of power. Attacks on pipelines reduced the contribution of cheap Egyptian natural gas to Jordan's production of electricity from 87 percent to 14 percent in 2012 (Hamed and Bressler 2018; TOI Staff 2014).

Further, the government heavily subsidizes electricity and other energy sources in Jordan (El-Katiri and Fattouh 2017). This subsidization is also an immense political issue in the country, one that cannot be easily eliminated no matter which government is in power. Reform measures, in the form of progressive increases to the two-part tariffs that already existed in the country, are likely to have impacted the rich and professional class the most, decreasing their real income.

Future research on this topic would benefit greatly from more detailed microeconomic data. The current limited data availability restricts the level of analysis to macroeconomic considerations. This limit prevents a complete replication of Card's examination of the Miami labor market after the Mariel Boatlift.

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Appendix: Additional Tables

Table 2. Log of monthly wages by job type and % change

| Job category | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2010–2015 |
|--|------|------|------|------|------|------|-----------|
| Clerks | 7.14 | 6.99 | 6.99 | 6.96 | 6.84 | 6.9 | -0.24 |
| Craft and related trade workers | 6.75 | 7.15 | 6.71 | 6.65 | 6.62 | 6.6 | -0.14 |
| Elementary occupations | 6.57 | 6.73 | 6.56 | 6.5 | 6.51 | 6.52 | -0.05 |
| Legislators, senior officials, and managers | 8.42 | 7.92 | 8.3 | 8.25 | 8.24 | 7.99 | -0.43 |
| Plant and machine operators and assemblers | 6.51 | 7.07 | 6.56 | 6.5 | 6.46 | 6.47 | -0.04 |
| Professionals | 7.46 | 7.34 | 7.39 | 7.34 | 7.24 | 7.24 | -0.23 |
| Services workers and shop and market sales workers | 6.61 | 6.92 | 6.59 | 6.52 | 6.52 | 6.56 | -0.05 |
| Technicians and associate professionals | 7.08 | 7.15 | 7.05 | 7.07 | 6.95 | 7.01 | -0.07 |
| Total | 7.05 | 7.21 | 7.01 | 6.99 | 6.91 | 6.94 | -0.11 |

Source: Jordan’s Statistical Yearbooks.

Table 3. Educational qualifications as a proportion of the number unemployed: 2010 and 2015

| Educational level | Year | Total | Females | Males |
|--------------------------|-------------|--------------|----------------|--------------|
| Illiterate | 2010 | 0.7 | 0.0 | 1.0 |
| | 2015 | 0.4 | 0.0 | 0.6 |
| | Change | -0.3 | 0.0 | -0.4 |
| Less than secondary | 2010 | 45.4 | 9.1 | 61.4 |
| | 2015 | 46.1 | 5.7 | 62.5 |
| | Change | 0.7 | -3.4 | 1.1 |
| Secondary | 2010 | 9.1 | 5.8 | 10.5 |
| | 2015 | 6.2 | 2.9 | 7.5 |
| | Change | -2.9 | -2.9 | -3.0 |
| Intermediate diploma | 2010 | 10.6 | 20.3 | 6.3 |
| | 2015 | 8.1 | 15.4 | 5.2 |
| | Change | -2.5 | -4.9 | -1.1 |
| Bachelor and above | 2010 | 34.2 | 64.7 | 20.8 |
| | 2015 | 39.1 | 76.0 | 24.3 |
| | Change | 4.9 | 11.3 | 3.5 |

Source: Jordan's Statistical Yearbooks.