



Refugee Resettlement: The impact on international trade flows

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U.S. Department of State
Office of the Chief Economist (OCE)
Working Paper 2017-03

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Refugee resettlement: The impact on international trade flows¹

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May 2017

Abstract

We show that refugees resettled to the United States significantly increase exports from the U.S. state where they are placed to their country of origin. A one standard deviation increase in the share of refugees (out of the local population) increases exports to their country of origin by around 16%. The effect for imports is insignificant, consistent with the hard economic conditions in refugees' countries of origin. Our analysis controls for a full set of fixed effects and exploits exogenous variation within the United States in the number of refugee cases without U.S. ties.

¹ This paper is part of a broader research agenda by one of the authors, Anna Maria Mayda, to shed light on the economic impact of refugees resettled to the U.S. Anna Maria Mayda thanks the Bureau of Population, Refugee and Migration (PRM) at U.S. Department of State for providing the data on which this analysis is based. Anna Maria Mayda worked on this analysis when she was a Senior Economist at the Office of the Chief Economist at the U.S. Department of State. The author also thanks Chief Economist Keith Maskus, Guy Lawson, Glenn Sheriff and seminar participants at presentations at PRM for insightful comments. All errors remain ours.

1. Introduction

The U.S. refugee resettlement program is the largest in the world and has resettled more than 3 million refugees in the United States since it began with the 1980 Refugee Act. Noticeably, the economic impact of the program has not received much attention, in part due to lack of empirical evidence. The goal of this paper is to offer new empirical evidence. Specifically, we analyze one particular aspect of the economic effect of refugees resettled to the U.S.: the impact on international trade flows.

The impact of refugees on local U.S. communities can take place through different economic channels. Refugee arrivals in a host community typically represent an increase to the supply of workers, making the labor market one of the most important channels of impact. Other economic mechanisms work through, respectively, the government budget, changes in the price of goods and services, as well as impacts on international trade flows. Refugees resettled in the United States can also affect local communities from a non-economic point of view, for example through cultural, political and security/crime effects (see for example Amuedo-Dorantes and Bansak (2017)). In this paper we investigate the “international trade” channel using the Worldwide Refugee Admissions Processing System (WRAPS) data set² housed at the Refugee Processing Center (RPC) – which is part of the Bureau of Population, Refugee and Migration (PRM) at U.S. Department of State. We empirically analyze the impact of refugee arrivals to a U.S. state on international trade flows between that state and refugees’ countries of origin.

Refugees often keep close ties with family and friends in their countries of origin and, therefore, can facilitate business interactions by reducing bilateral transaction costs. For example, refugees may decrease the costs to acquire information as they are more likely to know or find out the conditions of local markets in both countries, the hosting country as well as the country of origin. In addition, refugees are likely to be part of a broader network related to the origin country, which helps overcome problems of asymmetric information and imperfect contract enforcement. Note that, in the presence of these problems, trade may simply collapse. However, the migration network can provide information and substitute for a judicial system – by expelling members from the network in case of contract violation.³ Overall, the resulting lower bilateral transaction costs are likely to increase both exports and imports between the United States and refugees’ countries of origin. Refugees are also expected to increase demand in the United States for goods produced back home. This will raise imports to the United States from refugees’ countries of origin. Larger trade flows between the two locations will in turn raise welfare in each country as prices of traded goods will decrease and consumption variety will increase.

Endogeneity is an issue in this type of analysis. Refugees’ decisions regarding where to live and work within the United States are likely to be correlated with several variables – such as wages and employment opportunities at destination (see Borjas 1999) – which in turn are correlated with trade flows from/to that destination. An additional source of endogeneity arises in the form

² Refugee records in WRAPS are protected under Section 222(f) of the Immigration and Nationality Act, 8 U.S.C. § 1202(f), and may be subject to the Privacy Act of 1974, as amended, 5 U.S.C. § 552a. Therefore, the WRAPS dataset is not publically available.

³ In other words, if a member of the broader network breaks a contract, the rest of the network will expel him/her, in order to preserve the good reputation of the network in the business community.

of reverse causality, i.e. refugees from a given country are likely to settle in states that trade a lot with that country – this is because greater trade with one’s own country of origin is likely to be associated with greater employment and business opportunities for refugees from that country. We address these issues by exploiting information on the *initial* placement of refugees within the United States – note that it is resettlement agencies, not refugees, which make decisions on their initial geographic location. If a refugee reports having a U.S. tie (family or friends living in the United States), all efforts are made to place them in the same geographic location as their U.S. tie, though this is not always possible, for a host of reasons. If a refugee does not report a U.S. tie, the resettlement agency will place their case somewhere within their national network, taking into consideration the needs/characteristics of the case, and the ability of various local programs and communities to meet those needs. In particular, availability of medical/specialized/social services and of a diaspora community from the same country of origin are largely the driving factors of the decision on initial geographic location by resettlement agencies.

Specifically, we address the issue of endogeneity in two steps. First, we include a battery of fixed effects which allows us to control for the effect of changing economic conditions both in the U.S. resettlement state and in refugees' countries of origin as well as for the fact that some U.S. states may be “natural” trading partners of a given country of origin, independently from refugees. Second, we exploit exogenous variation in the number of refugees with no family members already in the United States (cases without U.S. ties). As mentioned above, the placement upon arrival of cases without U.S. ties is decided by the resettlement agencies, not by the refugee. In addition, although resettlement agencies may carry out strategic placement of refugees – for example, by allocating refugees to a state with existing diaspora networks and community support, which in turn is likely to be correlated with greater opportunities for trade with refugees’ countries of origin– this is unlikely to be a threat to identification of a causal effect in our analysis, due to uncertainty and delays in the time of allocation of refugees, relative to the time in which the allocation decision is made.

The rest of the paper is organized as follows. In Section 2 we summarize the literature related to this paper. In Section 3 we describe the WRAPS data set and the main aspects of the U.S. refugee resettlement program. In Section 4 we develop the empirical strategy while, in Section 5, we present the empirical results. Section 6 concludes the paper.

2. Related literature

There exists a large literature analyzing the impact of overall (i.e., both economic and forced⁴) migration to the United States on international trade and FDI flows (see for example Gould 1994). The most recent contributions in this literature are careful in tackling the issue of endogeneity. For example, Burchardi et al. (2016) use the ethnic composition of U.S. states, from the 19th century onwards, to predict the current immigrant population and to estimate its causal impact on foreign direct investment. Steingress (2015) exploits the exogenous allocation of some refugees, those without family in the United States., to provide causal evidence on the trade-enhancing effect of overall migration.

⁴ Refugees are often referred to as “forced” migrants.

A smaller literature investigates the impact of, specifically, refugees to the United States. on trade. Parsons and Vezina (2016) show that, after the end of the 1994 trade embargo on Vietnam, the share of U.S. exports going to Vietnam was higher in those U.S. states with larger Vietnamese communities, which were the ones receiving larger refugee inflows 20 years earlier. Cohen et al. (2017) use the location of World War II Japanese internment camps to instrument for the size of the Japanese population in local communities in the United States. The paper finds that today firms in areas close to internment camps import from and export to Japan significantly more than other firms.

As pointed out, the existing literature either analyzes the impact on trade/FDI of all migrants (i.e., both economic migrants and refugees) or looks at one country of origin at a time (for example, Vietnam and Japan). In this paper, instead, we focus on all refugees resettled to the United States. – from any country of origin – and investigate their impact on international trade. Note that the effect of refugees is likely to differ from that of economic migrants, since refugees come from countries with wars or difficult political conditions.

3. Data

The WRAPS data set provides individual-level information for all refugees resettled to the United States, between 1990 and 2015, on variables such as the year of arrival, the city and state of placement within the United States, the socio-economic characteristics – such as the age, gender, marital status, education and occupation of the refugee – the country of origin and whether or not they report a U.S. tie. Note that the WRAPS data set covers the *universe* of refugees resettled to the United States. Hence one of the advantages of the analysis in this paper is that the main explanatory variable is measured with no sampling error, which is not the case for analyses of economic migration – based on survey data or subsamples of Census data.

Note that the number of refugees admitted through the U.S. refugee resettlement program is decided annually by a Presidential Determination. Most refugees resettled in the United States are referred to the U.S. Refugee Admissions program by the U.N. High Commissioner for Refugees. All refugee applicants are interviewed overseas by an officer from the U.S. Citizenship and Immigration Services in the Department of Homeland Security. All refugees undergo rigorous intensive security checks before being approved for admission to the United States. If the applicant is granted refugee status, the State Department handles the remaining overseas processing of applications and transportation of refugees to the United States.

4. Empirical strategy

Our empirical analysis exploits variation in the number of refugees across U.S. states and countries of origin, over time. It also uses bilateral imports and exports data by U.S. state and country of origin. These trade data are only available for recent years.⁵ Although data on exports are available for earlier years than for imports, we estimate specifications over the same period

⁵ Export data by state are available from 2002 to 2013 while import data by state are available from 2008 to 2013.

of time, which makes comparisons more meaningful. In particular, we focus on exports and imports in, respectively, 2008 and 2013 and regress them on lagged refugee stocks (which we measure as a share of the state population in the year 2000). We lag refugee stocks to account for the fact that it takes time for refugees to establish themselves in their destinations and affect trade flows to/from their countries of origin. In addition, by focusing on two years of trade data five years apart, we only exploit variation in the stock of refugees over a five-year period – since the yearly numbers of refugee arrivals by country of origin are small, it makes sense to look at lower-frequency changes.

In particular, we consider a framework in which trade flows in year t between U.S. state s and country c are affected by the bilateral stock of refugees at the end of year $(t - 5)$ – from country c in state s – measured as a share of the state population in year 2000. Moreover we assume that, besides the stock of refugees, other factors impact trade flows and can be captured with state-by-origin-country fixed effects, state-by-year fixed effects and, finally, origin-country-by-year fixed effects. Hence the estimating equations look as follows:

$$\log(exp_{sct}) = \beta \cdot \frac{refstock_{sc(t-5)}}{P_s^{2000}} + \delta_{sc} + \delta_{st} + \delta_{ct} + \varepsilon_{sct} \quad (1)$$

$$\log(imp_{sct}) = \beta \cdot \frac{refstock_{sc(t-5)}}{P_s^{2000}} + \delta_{sc} + \delta_{st} + \delta_{ct} + \varepsilon_{sct} \quad (2)$$

Where $\log(exp_{sct})$ and $\log(imp_{sct})$ are the logarithms⁶ of, respectively, exports and imports from/to U.S. state s to/from country c at time t , $refstock_{sc(t-5)}$ is the stock of refugees from country of origin c who are in state s at time $(t - 5)$ and P_s^{2000} is the population of state s in year 2000. In addition, as mentioned above, this specification controls for the effect of changing economic conditions both in the U.S. state of placement (through the state-by-year fixed effects δ_{st}) and in refugees' country of origin (through the origin-country-by-year fixed effects δ_{ct}) as well as for the fact that some U.S. states may be “natural” trading partners of a given country of origin independently from refugees (through the state-by-origin-country fixed effects δ_{sc}). Hence the estimation based on (1) and (2) only uses variation in the data for a given pair of locations – country of origin by state – over time.

Since we have data on refugee arrivals as opposed to stocks, we estimate the above specifications in first differences. In first differences, the state-by-origin-country fixed effects δ_{sc} disappear and, since the data are only for two periods, the state-by-year and origin-country-by-year fixed effects are captured by state and country-of-origin fixed effects. Finally we focus on changes in the stock of refugees due to the arrival of new refugees *from abroad* – i.e., we proxy $(refstock_{sct} - refstock_{sc(t-5)})$ with the sum of new refugee arrivals over the five-year period $(\sum_{t=2004}^{2008} ref_{sct})$.⁷ Hence, the estimating equations we bring to the data look as follows:

⁶ The dataset includes observations with zero trade flows. We follow Peri and Requena (2010) and add \$1 to all exports and imports so that we can include all observations in the regressions. Peri and Requena (2010) show that the results are robust to using a Poisson estimator (as in Santos-Silva and Tenreiro 2006).

⁷ In other words, we do not exploit variation in the stock of refugees due to movement, within the United States, of refugees arrived in the past – given that this variation is likely endogenous.

$$\log(\exp_{sc,2013}) - \log(\exp_{sc,2008}) = \beta \cdot \frac{\sum_{t=2004}^{2008} ref_{sct}}{P_s^{2000}} + \delta_s + \delta_c + \varepsilon_{sc} \quad (1')$$

$$\log(\imp_{sc,2013}) - \log(\imp_{sc,2008}) = \beta \cdot \frac{\sum_{t=2004}^{2008} ref_{sct}}{P_s^{2000}} + \delta_s + \delta_c + \varepsilon_{sc} \quad (2')$$

As in the most recent existing literature, our goal is to estimate causal effects, not just simple correlations (which might be driven by some other change taking place in the same period). In other words, the empirical analysis tackles the issue of endogeneity. The fixed effects allow us to net out the impact of several unobserved confounding factors which might be correlated with the explanatory variable and bias the estimates. However, we still need to worry about the following two threats to identification of a causal effect: first, sorting of refugees at the individual level and, second, strategic placement by resettlement agencies. Sorting at the individual level arises if refugees are free to choose where to locate, in which case they might go to states where, for example, there are more trade opportunities with their country of origin. To address this issue we implement an instrumental variable estimation strategy and use, as an IV for the number of total refugee arrivals (over the five-year period), the number (over the same period) of refugee arrivals who report no family members or friends already in the United States, the so called cases “without U.S. ties.” The placement upon arrival of cases without U.S. ties is decided by resettlement agencies, not by the refugee. Hence, sorting by refugees at the individual level is not a threat to the exclusion restriction.

At the same time, strategic placement by resettlement agencies might still occur. As a factor in where to place cases without U.S. ties, they may look for states where there is a pre-existing community from the same country of origin as the refugee. This could be problematic, since a large pre-existing community may be associated with greater trade opportunities with that country. We think this is not likely to be an issue in our analysis. In our most demanding specification, we include a full battery of fixed effects, specifically origin country by state fixed effects.⁸ Hence we already account for the fact that some states have on average large pre-existing communities (or trade to and) from a given origin country. Given the fixed effects included in the estimating equation, strategic placement would be problematic only if resettlement agencies could decide the U.S. state of placement according to *real time* information on a state and country of origin pair (for example, on trade opportunities or on the size of the pre-existing community). It is unlikely that resettlement agencies can use real time information, since there are substantial and unpredictable delays between the time in which the allocation decision for a given refugee is taken by the agency and the time he/she actually arrives to the United States. In her analysis of the impact of networks on refugees’ labor market integration, Beaman (2012) makes the same point: arrival delays prevent resettlement agencies to be strategic in their placement of refugees with respect to time-varying factors.⁹

⁸ In other words, the only variation left in the data which we exploit for the estimation is within a state-origin-country pair over time.

⁹ “Overall, the IRC employee who is solely in charge of placement states that the effectiveness of strategic decision-making is limited since she never knows when a refugee who is assigned to the IRC by the State Department will actually be allowed to travel. To highlight the stochastic component, consider 2005: there were cases that were given

5. Main results

We find that refugees resettled in the United States significantly increase exports from the U.S. state where they are first placed to their country of origin. The estimates, which are based on the standardized values of the main independent variable, are presented in Table 1. Based on the IV specification which accounts for all fixed effects (column (7) in Table 1), a one standard deviation increase in the share of refugees (out of the local population) increases exports to their country of origin by around 16%.¹⁰ Note that, while the estimate may seem large, it is consistent with findings in the literature that the impact of migrants on trade flows is larger when the initial number of migrants is low (Egger, von Ehrlich and Nelson 2012). In addition, for several pairs of states and countries of origin in the data, the initial value of exports is small, which implies that the estimated impact is not large in absolute terms. So, for example, a 16% increase in a state's bilateral exports is not large in absolute terms if the destination of exports is, for example, Sudan or Nepal, and the state is small.

The effect for imports is insignificant, most likely due to the combination of opposite effects. On the one hand, refugees should increase imports, by lowering bilateral transaction costs and by increasing demand in the U.S. for goods produced back home. On the other hand, refugees may create businesses that meet the new local demand and produce goods which typically are from their countries of origin.¹¹ This in turn is going to reduce the incentive to import from those countries. So, for example, Nepali refugees may establish production of pashminas directly in the U.S. in which case U.S. customers would be able to purchase pashminas domestically. This is especially true given that refugees come from countries with difficult political conditions in which production of various products is often halted.

6. Conclusions

In this paper we analyze the impact of refugees resettled to the United States on international trade flows. The empirical analysis controls for the effect of changing economic conditions both in the U.S. state of placement and in refugees' country of origin as well as for the fact that some U.S. states may be "natural" trading partners of a given country of origin independently from refugees. Finally, the methodology exploits (exogenous) variation in the number of refugee cases "without U.S. ties" – who do not decide the initial location of resettlement within the U.S. For all these reasons, the results shed light on the causal effect of refugees on international trade flows, as opposed to a simple correlation. We find that refugees resettled to the United States

refugee status in 2001 but who arrived in 2005 due to delays associated with heightened September 11, 2001 security requirements." (Beaman 2012, p.139). Note that IRC (International Rescue Committee) is one of the nine U.S. refugee resettlement agencies.

¹⁰ The standard deviation of the share of refugees in these regressions is 0.000043 (i.e., 4.3 refugees per 100,000 residents). Also note that the Kleibergen-Paap rk Wald F statistics are high in all specifications, indicating that the first stage of the IV estimation is strong.

¹¹ This hypothesis could be tested more directly using data at the product level. This is an interesting avenue of future research.

significantly increase exports from the U.S. state where they are placed to their country of origin but have no significant impact on imports.

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Table 1. The impact of refugees resettled to the U.S. on international trade flows

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	log(Exports)	log(Imports)	log(Exports)	log(Imports)	log(Exports)	log(Imports)	log(Exports)	log(Imports)
	Instrumental Variable estimates							
Number of refugees (share of state population in 2000)	0.0384	-0.131**	0.0267	-0.120*	0.156***	0.0425	0.159***	-0.0709
	[0.0612]	[0.0584]	[0.0577]	[0.0603]	[0.0528]	[0.221]	[0.0476]	[0.214]
Constant	0.0568	-0.182**						
	[0.0359]	[0.0717]						
Origin country by State fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
State by year fixed effects	no	no	yes	yes	no	no	yes	yes
Origin country by year fixed effects	no	no	no	no	yes	yes	yes	yes
Observations	5,020	3,944	5,020	3,944	5,020	3,944	5,020	3,944
R-squared	-0.001	0.000	0.148	0.100	0.278	0.292	0.408	0.370
Instrumental variable	Number of no-US-Tie refugees (as a share of state population in 2000)							
IV F-stat	60.85	105.9	61.72	96.10	24.55	16.04	24.85	16.35

Robust standard errors, clustered by U.S. state, in brackets. *** p<0.01, ** p<0.05, * p<0.1. The independent variable (the number of refugees as a share of the state population in 2000) is standardized over each sample, the exports sample and the imports sample.