People Following Goods

Is there an Association between Refugee Flows and International Trade Patterns?

Question

Is there an association between refugee flight patterns and international trade?

What determines refugee flight patterns?

- What is the distinction between refugee flows and migration?
- Where do refugees flee and why?
- Is there a way to predict refugee flight patterns when a crisis breaks out?
- Are there certain factors that influence the decision-making process or is it more random?

Hypothesis

When a refugee crisis breaks out, refugees will flee from their country of origin to those countries with which their country's economic ties are strongest.

Previous studies have shown a relationship between migration and trade: does this relationship hold with refugee flows?

Strong trade ties may decrease certain costs of migration for refugees

- lower transportation costs
- increased information

Strong trade ties could indicate a strong economy in potential asylum country

- increased economic opportunity

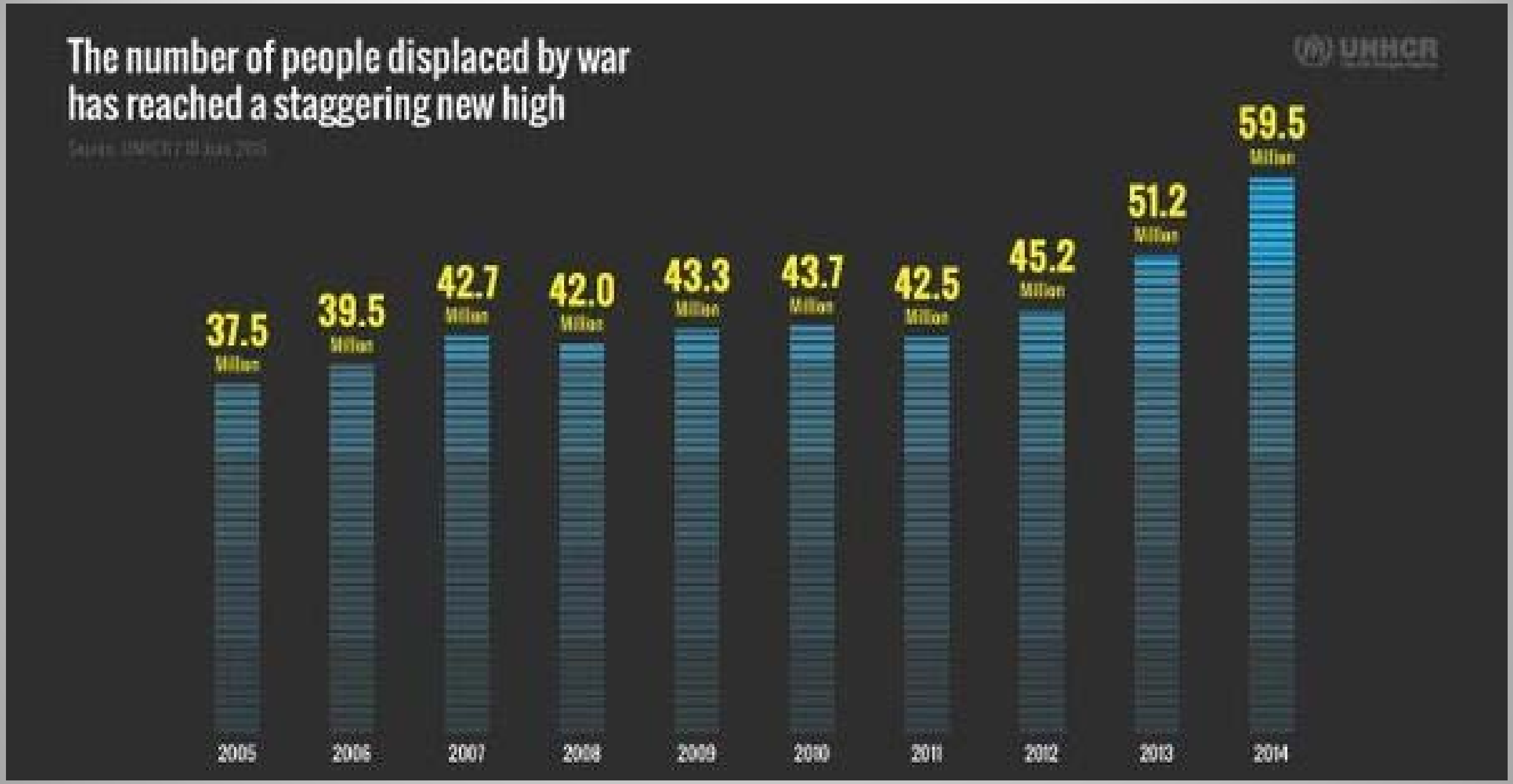
Motivation

«Today, we are experiencing the **largest refugee and migrant crisis since World War II** and the highest numbers of displacement on record»

- Washington Post

«There are close to **65.3** million forcibly displaced people worldwide, **31.3** million refugees registered with the UNHCR and **33,972** people a day are forced to flee their homes because of conflict and persecution»

- UNHCR



*Source: UNHCR

Motivation

How can we as economists contribute?

The topic of refugee flows has been widely studied by anthropologists, political scientists, sociologists, historians and lawmakers

BUT…

There is a marked lack of empirical studies/economic analysis on the topic of refugee flows

THOUGH…

Economists have the unique ability to contribute quantitative/empirical results that could help direct policy or influence the way refugee crises are addressed

Economic Theory

Refugee Initial Decision (Whether or not to flee)

$W_j - C_j + \varepsilon_j > W_i - C_i - \varepsilon_i$

Wage potential in asylum country – cost of fleeing > wages in origin country – cost of violence/disaster

Refugee Fundamental Cost-Benefit Analysis (Deciding where to flee)

$U_j = \mu_j - C_j + \varepsilon_j$ (U_j = potential utility from fleeing to country i)

$U_k = \mu_k - C_k + \varepsilon_k$ (U_k = potential utility from fleeing to country j)

If $U_j > U_k$ refugee will flee to country j

Gravity Model of Immigration

$Imm_{ij} = B_0 + B_1(pop_i \times pop_j) + B_2(rely_{ij}) + B_3(dist_{ij})$

Data

United Nations High Commissioner on Refugees (UNHCR) Database: total refugee population by country of asylum, 1960-2013 and total refugee population by origin, 1960-2013

The Refugee Project: narrative, temporal map of refugee migration since 1975

ITC Trade Map: International Trade Centre (trade by commodity statistics, value in thousands of US dollars)

World Bank: population data as well as GDP per capita data

Human Freedom Index: political rights and civil liberties in country of asylum

Google Maps: distance between capitals of sending and receiving countries

Data

Analysis

Multivariate Regression of Panel Data Set

(1) $\mathbf{Log(R_{ij}/P_i)} = B_0 + a_c + a_t + B_1\log(IM_{ji}) + B_2\log(EX_{ij}) + B_3\log(D_{ij}) + B_4\log(GDP_i) + B_5\log(GDP_j) + B_6(PR_j)$

(2) $\mathbf{Log(R_{ij10})} = B_0 + a_c + a_t + B_1\log(IM_{ij}) + B_2\log(EX_{ij}) + B_3\log(D_{ij}) + B_4\log(GDP_i) + B_5\log(GDP_j) + B_6(PR_j)$

Empirical Results

	Dependent Variable: Refugees/Origin Population		
	(1)	(2)	(3)
Log Distance (km)	-0.810*** (0.042)		
Log Imports (US$)	0.056** (0.023)	0.078*** (0.021)	0.075*** (0.020)
Log Exports (US$)	-0.237*** (0.018)	0.0 (0.015)	0.001 (0.015)
Log Per Capita GDP Origin (US$)	-0.489*** (0.026)	-0.211** (0.070)	-0.437*** (.092)
Log Per Capita GDP Asylum (US$)	0.096* (0.053)	0.673*** (0.111)	0.390*** (0.145)
Political Rights	0.113** (0.048)		
Constant	2.271*** (0.634)		
Fixed Effects	None	Origin + Asylum	Origin + Asylum + Time
	R^2: .2999 Adjusted R^2: .299 Observations: 4952	R^2: 0.9897 Adjusted R^2: 0.9892 Observations: 4952	R^2: 0.9899 Adjusted R^2: 0.9893 Observations 4952

The symbols *, **, and * following the coefficients denote that the estimator is significant at a 10, 5, and 1% significance level, respectively. Country and Time dummies not reported.**

Source: own calculations

Top Ten Refugee-Producing Countries and Number of Refugees (2001-2013)

Note: Number of Syrian refugees relative to other nations is low compared to what might be expected on the basis of the last three years because the available data only includes up to 2013

Country	Number of Refugees
1. Afghanistan	13,557,819
2. Iraq	11,208,290
3. Somalia	6,269,188
4. Sudan	5,552,576
5. Vietnam	4,260,960
6. Burundi	3,608,974
7. Syria	2,841,887
8. Eritrea	2,322,329
9. Croatia	1,601,592
10. Azerbaijan	1,427,430

Source: own calculations, data from UNHCR: Total Refugee Population by Origin, 1960-2013

Empirical Results

(Top Ten Refugee-Producing Countries)

	Dependent Variable: Refugees		
	(1)	(2)	(3)
Log Distance (km)	-1.409*** (0.215)		
Log Imports (US$)	0.532*** (0.099)	0.298** (0.137)	0.299** (0.142)
Log Exports (US$)	-0.217*** (0.067)	-0.409*** (0.075)	-.444*** (0.079)
Log Per Capita GDP Origin (US$)	0.323* (0.164)	-0.001 (0.175)	-0.099 (0.187)
Log Per Capita GDP Asylum (US$)	-1.022*** (0.194)	0.979** (0.448)	0.223* (0.750)
Political Rights	0.156 (0.030)		
Constant	-1.272 (2.160)		
Fixed Effects	None	Origin + Destination	Origin + Destination + Time
	R^2: .3258 Adjusted R^2: .3076 Observations: 230	R^2: 0.977 Adjusted R^2: 0.9739 Observations: 230	R^2: .9777 Adjusted R^2: .9732 Observations: 230

The symbols *, **, and * following the coefficients denote that the estimator is significant at a 10, 5, and 1% significance level, respectively. Country and Time dummies not reported.**

Source: own calculations

Conclusions/Policy Implications

Imports may be a good indicator of refugee flight patterns during periods of conflict

- Those countries from which a country imports the most are most likely to be the most important asylum countries if a crisis breaks out.
  - Crisis management implications – so that asylum countries could be better-prepared
- Distance remains a highly significant indicator, however more likely to predict first asylum countries
- Reiterates evidence that developing countries are most likely to produce the largest refugee flows
  - Evidence that refugees, like migrants seek better economic opportunity as well as stability when they flee (as seen with Syria today)

Further Research

Why does this link exist between trade and refugee flows?

- It is important to test underlying assumptions
  - Does trade correlate with the costs associated with fleeing to different countries
  - Understand how perception of economic opportunity factors into refugees decision of where to flee
- Include additional explanatory variables
  - Variable to indicate whether origin and destination countries share common language or a variable to measure ethnic linkages between origin and destination country populations
  - Lagged variable to understand if past refugee flights affect future refugee flights
  - Variable to reflect asylum policy in receiving countries as well as investments and foreign aid
- Test other indicators of trade
  - Variable to reflect the trade of services in addition to the trade of goods