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Immigration and trade: Evidence from the 1920s Quota Acts

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Abstract

During the 1920s, the US implemented a series of migration restrictions, effectively ending mass migration from Europe. We exploit this shock to migration to identify the effect of migration on trade in a Difference-in-Difference model with heterogeneous treatment effects. Our analysis shows that the 1920's quotas lowered US-European migration, especially the migration from Southern and Eastern Europe, with negative effects for US-European trade. We argue that unobserved changes to tariffs after the war are unlikely to drive these results.

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1 Introduction

The ongoing Covid19 pandemic and the ensuing supply chain interruptions have highlighted the high degree of economic integration across the world. However, globalization has been promoted unevenly across its main factors: trade, capital flows and migration. While domestic policies have displayed a clear preference for open borders regarding trade and capital flows, the same is not true for migration.

While policy debates often evolve around short-term labor market effects, there is a robust and growing literature linking migration to long-run growth. This stream of literature identifies a plethora of underlying mechanisms, including innovation (e.g, Kerr (2008); Choudhury (2016)), skill-complementarities from diversity (e.g., Ortega and Peri (2014); Docquier et al. (2020)), the reduction of transaction costs (e.g., Gould (1994); Rauch (1999); Parsons and Vézina (2018)), and investment flows (e.g., Kugler and Rapoport (2007); Javorcik et al. (2011); Kugler et al. (2018)).

Each of these studies pays careful attention to causal inference as migration is usually determined endogenously. To this end, literature recently suggests a new approach – the 1920s migration quotas. This strand of literature applies the quota as a natural experiment to determine the effects of migration on earnings and productivity (Ager and Hansen (2017) and Xie (2017)), innovation (Doran and Yoon (2018) and Moser and San (2020)), and return migration (Greenwood and Ward (2015)). We take advantage of this identification strategy to establish a causal link between migration and trade, and discuss the confounding effects of unobserved changes to tariff laws.

Using data from 1900 to 1937, we find that the 1920s Quota was successful in restricting migration from Europe to the US, particularly workers from Southern and Eastern European countries. As such, the quotas not only restricted migration but changed its composition, as intended. Second, we find negative effects of the quotas for US-European trade: A 1% increase in a country's quota exposure reduces imports by 0.03% and exports by 0.07%. Finally, we find no trade diversion effects of the quotas. In other words, there is no evidence that lost US-European trade associated with the Quota Acts is picked up by other countries. We argue that unobserved changes to tariff laws after the war are unlikely to drive these results.

2 Historical Background

Before the turn of the 20^{th} century, migration to the United States was largely unrestricted. While approximately 90% of immigrants to the U.S. originated from Northern and Western (NW) Europe in the mid-1800s, that percentage dropped to 45% by 1920, and the share of immigrants from Southern and Eastern (SE) Europe increased to 41%.

After WWI, the 1921 Emergency Quota Act was passed to deliberately curb immigration from SE Europe, while keeping migration from NW Europe constant.[1] To achieve this, the quota limited migration from each European country to a yearly maximum of 3% of the

[1]Four years prior, the Literacy Act of 1917 was the first attempt to curb migration from SE Europe, where literacy rates where believed to be lower than in NW Europe. However, generally high and rising literacy rates across Europe rendered the 1917 Act ineffective (Goldin, 1994).

country's foreign-born population stock in 1910. This drastically and differentially reduced European immigration. For example, the Swedish-born population in the US in 1910 was 665,000, allowing for 20,000 Swedish migrants under the 1921 Quota. In contrast, the Italian-born population in 1910 was 1.5 million resulting in a quota of 42,000. For Italy, this implied a 80% decline relative to the 1921 immigration flows. In contrast, actual immigration from Sweden only amounted to 9,000 in 1921, making the Swedish quota of 20,000 non-binding.

Following the 1921 Emergency Quota Act, the Immigration Act of 1924 was passed to make permanent, and further tighten, immigration restrictions. The new act changed yearly limits to 2% of a country's 1890 US population stock. Not only did this act further reduce immigration, but it increasingly disfavored immigration originating from SE Europe. As illustrated in Figure 1, the foreign-born population stock from SE Europe accounted for less than 25% of the overall European foreign-born population between 1881 and 1890, compared to 75% in 1910. Thus, by changing the reference year to 1890, the 1924 Act targeted SE European immigration by reducing the population base for the quota calculations. To continue the previous example: the 1924 Act decreased the Swedish quota by 10,000 (50%), but decreased the Italian quota from 42,000 to under 4000 (91%).[2]

3 Data

Migration from NW Europe grew from 100,000 in 1900 to about 200,000 in 1905 where it remained constant until the war (Figure 2). In contrast, migration from SE Europe peaked twice at over 800,000.[3] After WWI, migration was mostly determined by the quotas, now with immigration from NW countries dominating SE immigration.[4]

Table 1 provides a closer look at immigration by country. Pre-quota immigration from SE Europe was dominated by Austria-Hungary, Italy and the USSR, each sending more migrants than all of NW Europe combined. After the quotas were implemented, migration from NW Europe was still ca. 50% of pre-WWI levels, whereas immigration from SE Europe was only 4% of the pre-quota level. Column 3 shows that the quotas were essentially non-binding for NE Europe. At the median, the quota exceeds actual migration by 1,100 in NW Europe but is binding in SE Europe.

Figure 3 shows the evolution of trade during our sample period. While NW Europe recorded both higher imports and exports to the US, trade flows follow a similar trend. Table 2 reports average trade flows by country and region. On average, trade with NW Europe for each country was highest at around 70%, followed by 12% of trade with SE Europe and 7% of trade with the US. This pattern holds true for both NW countries and SE countries. In addition, Table 2 shows summary statistics for US population, GDP and average tariff rates.[5]

[2]See Greenwood and Ward (2015) or Massey (2016) for more details on the Quota Acts

[3]Coinciding with the Panic of 1907, migration from SE countries dropped by 50%, industrial output fell 17%, and real GNP by 12% (Moen and Tallman, 2015).

[4]Table A1 in the appendix provides a detailed list of variable definitions and sources.

[5]High tariff rates for USSR are driven by tariffs in the 1930s. During the first and second 5-year plans, the USSR under Stalin pursued economic autarky and intended to reduce foreign trade quickly to a tolerable minimum (Dohan, 1976).

4 Estimation Strategy

To capture the effect of the 1920's Quota Acts on immigration from country i at time t, we follow Ager and Hansen (2017) and construct a measure, $QuotaExposure$, that is based on the number of predicted missing migrants. We define $QuotaExposure$ as:

$$QuotaExposure_{i,t} = max[log(\hat{M}_{i,t} - Quota_{i,t}), 0], \tag{1}$$

for $t > 1921$ and $QuotaExposure_{i,t} = 0$ otherwise.[6] The variable $Quota_{i,t}$ is the allotted number of migrants from country i at time t under the Quota Acts. The variable $\hat{M}_{i,t}$ is the number of predicted immigrants from country i at time t had the quota not been implemented. The prediction is derived from the following regression, separately for each country: $M_t = \beta_0 + \beta_1 ln(t) + \beta_2 ln(t)^2$, where M_t refers to the actual immigration flow from a given country at time $t = [1900, ...1913]$ and $ln(t)$ is the natural log of a linear time trend. Since our sample period was affected by WWI, we use pre-WWI immigration flows to estimate $\hat{\beta}_1$ and $\hat{\beta}_2$, which we use in turn to predict the hypothetical immigration flows post-WWI had the quota system not been implemented. We interpret the term $\hat{M}_t - Quota_t$ as the number of missing migrants from a certain country in year t due to the quotas. We set $QuotaExposure$ equal to zero if $\hat{M}_{it} < Quota_{it}$ (a non-binding quota), and for the pre-quota years, $t < 1922$.

Figure 4 illustrates actual migration (M_t) and predicted migration ($\hat{M}_t$) for all 15 countries in our sample over time. For example, the number of predicted immigration from Italy in 1923 is just below 250,000, while under the 1921 Quota Act annual Italian migration was restricted to just above 40,000. In other words, the quota created approximately 210,000 missing Italian migrants. In contrast, the number of predicted immigration from Sweden in 1923 was just under 10,000, while under the 1921 Quota Act annual Swedish migration was ca. 20,000, thus not creating any missing migrants.[7]

By using Quota Exposure in a fixed effects regression, we are effectively estimating a Difference-in-Differences model with heterogeneous treatment dosages.[8] The validity of this identification strategy hinges on the assumption that trade in $t > 1921$ is unrelated to i) the foreign-born population 11-31 years prior, and ii) actual immigration *pre*-WWI.

[6] Alternatively, this can be thought of as the interaction term $QuotaExposure_{i,t} \times PostTreatment_t$ in a DiD model.

[7] In addition to the Quota Exposure measure in equation (1) we test our results for robustness using several other treatment measures and methods. First, we replace equation (1) with an approach similar to Greenwood and Ward (2015): $QuotaExposure_{i,t} = max[1 - \frac{Quota_{i,t}}{\hat{M}_{i,t}}, 0]$, which captures the intensity of the quota system. Second, we provide instrumental variable estimates using Quota Exposure as an instrument for migration. Third, we estimate a simple DiD model with Europe as the treatment group. Countries without legal quotas, including Latin American countries and Canada, make up the control group. Results are robust and available upon request.

[8] By construction, there are no missing migrants before the quotas took place. Therefore, this approach rules out the estimation of a more dynamic specification (event study), which is often used in DiD models to examine the existence of pre-trends.

5 Results

5.1 The Effect of the Quotas on Immigration

Before we turn to our trade results, we verify that the quotas decreased immigration relatively more in countries with a higher number of predicted missing migrants. Therefore we estimate the following model:

$$log(Migration_{i,t}) = \beta QuotaExposure_{i,t} + \gamma_1 GDP_{i,t} + \gamma_2 Pop_{i,t} + \phi_t + \rho_i + \epsilon_{it}, \quad (2)$$

where $Migration_{i,t}$ is migration from country i to the US, $QuotaExposure$ is a placeholder for the quota exposure measures described in Section 4, ρ_i and ϕ_t are fixed effects, and GDP and Pop are country $i's$ GDP and population, respectively. Equation (2) can be thought of as the first-stage in a 2SLS regression where trade is the outcome variable and migration is the variable of interest.

Table 3 reports coefficient estimates from estimating equation (2) by OLS, and summary statistics of the quota exposure measure by region. The average quota exposure in SE countries is two times larger than in NW countries. Coefficient estimates suggest a significantly negative relationship between quota exposure and migration, i.e. our quota measures are strong predictors of migration to the US. Specifically, Column 1 shows that countries with a 1 % higher quota exposure reduce migration to the US by 0.1%. For 8 countries, we also observe migration by occupation groups. Average Quota Exposure for this subsample is similar to the full sample. Columns 3 to 6 show that the quota successfully deterred migration across a variety of occupations, with similar results for agricultural workers, professionals, and skilled workers.[9]

5.2 The 1920's Quotas and US-European Trade

Our main results describe the effect of the 1920's Immigration Quotas on trade between Europe and the US. Specifically, we estimate:

$$Y_{i,t} = \beta Migration_{i,t} + \gamma X_{i,t} + \phi_t + \rho_i + \epsilon_{it}, \quad (3)$$

where $Y_{i,t}$ is the natural log of country $i's$ imports from (exports to) the US at time t, ϕ_t are year fixed effects to control for time-invariant factors such as the global economic climate, ρ_i are country fixed effects to control for country-invariant factors such as geographic distance from the US or other US specific indicators, $X_{i,t}$ is a vector of control variables including the natural log of GDP, population, as well as three trade openness measures: a country's overall trade volume, a country's average tariff rate, and the fraction of a country's free trade with the US relative to its 1914 level.[10]

The coefficient of interest, β, measures the effect of a change in the migration measure on trade between Europe and the US. Specifically, Table 4 reports coefficient estimates of 6 distinct regressions. In addition to robust standard errors, the bottom of each column reports

[9] please see Appendix A1 for details on occupational groups.

[10] The appendix provides more details on these variables.

the p-values from a wild bootstrap as in Roodman et al. (2019).[11] Column 1 presents results of a simple OLS regression with migration flows as the independent variable, indicating a one percent increase in migration is associated with a 0.04% increase in imports and a 0.03% decrease in exports. These effects are not statistically significant and provide no causal interpretation.

The next column reports the reduced form results of the quota exposure measure from equation (1). In contrast to our previous results, we find a significant link between the 1920's Immigration Quotas and US-European trade. Specifically, a one percent increase in a country's quota exposure is associated with a 0.05% decrease in imports, and a 0.06% decrease in exports. After controlling for tariffs (Column 3 & 6), the quota's effect on imports becomes more muted, but remains statistically significant. The effect on exports remains largely unchanged.[12]

5.3 The 1920's Quotas and Trade Diversion

One potential channel through which migration restrictions reduce trade flows is by raising transaction costs. As a result, trade may divert from a more efficient trading partner towards a less efficient one. Intuitively, network effects of migrants in the form of a shared language, culture, or religion may reduce transaction costs similar to free trade agreements, and thus divert trade (e.g. Lipsey (1957), Balassa (1967), Krueger (1999), Magee (2008)). To test the hypothesis of trade diversion, we re-estimate equation (3), replacing the dependent variable with i) the natural log of country $i's$ imports to (exports from) the remaining 14 *European* countries in our sample, and ii) the rest of the world (excluding the US). To control for changing costs of exporting in the form of tariffs, we replace the fraction of a country's free trade with the US with the average import tariff of country $i's$ five main trading partners.

In general, there is no evidence that a change in European-US migration has any significant trade diversion effects. In other words, the decrease in US-European trade associated with the quotas is not picked up by other countries.

5.4 Discussion

Our 3 main results can be summarized as follows: The 1920's quotas i) reduced US-European migration, especially migration from SE countries; ii) reduced US-European Trade; and iii) had no effect on trade diversion. Can unobserved changes to tariff laws confound these results?

Clearly tariffs play an important role in the trade volume between countries, and the time period under study was subject to four major tariff changes. First, in 1909, the Payne-Aldrich Act lowered rates on 650 items, raised rates on 220, and made no change on 1,150. With the win of the election in 1913, the Democratic party around Woodrow Wilson passed

[11] The wild bootstrap is especially useful when conventional inference methods are unreliable because large-sample assumptions do not hold and there are few clusters, as is the case for our sample.

[12] These effects are robust across different estimation methods (reduced form OLS, 2SLS-IV, DiD) and two alternative quota exposure measures. Further, the benchmark results are robust to omitting the years following the start of the Great Depression, and accounting for differential effects between WW1-Winners and Losers. Results are available from the authors upon request.

the Underwood-Simmons Tariff Act, which reduced the average import tax from over 40% to 27%. After the war, the US reverted to a policy of protectionism by implementing the Fordney-McCumber Act in 1922 which raised the average import tax back to almost 40%. Several years later, the Smoot-Hawley Act of 1930 raised tariffs even further by 2.5 percentage points, on average.

Unfortunately, the timing of these tariffs largely coincide with other economic events, such as WWI, the Immigration Quota Acts and the Great Depression. While year-fixed effects and average tariff rates partially control for unobserved effects of product-specific tariffs on trade, we should be concerned that our results are driven by differences in effective duties across countries, rather than quota exposure. For example, if SE countries are disproportionately exporting primary products to the US relative to NW countries, and tariffs on primary products were raised disproportionately under the 1922 Fordney-McCumber Act, our results might be driven by a spurious relationship between the timing of the quotas and the tariff. More specifically, in this example, our coefficient estimate on quota exposure would be downward biased (become more negative), thus magnifying our results.

Table 6 sheds some light on the possibility of this spurious relationship. The table compares tariff rates for products under the Payne Aldrich Act and the Fordney-McCumber Act. The product list is taken from a 1922 New York Times Article (The New York Times, 1922) and combined with the list provided in Taussig (1922). Several facts emerge: First, while tariffs for some products were raised dramatically (e.g. Glassware for Chemicals), many products did not see a significant increase in duties. In fact, Taussig (1922) suggests that it "was hardly more than an amiable gesture". Particularly the aggregate effect of all the duties on agriculture is "not considerable". Second, Column 4 of Table 6 reports the fraction of each product imported to the US from SE countries in 1920, just before the introduction of the Fordney-McCumber Act. With few exceptions, most US imports did not originate in SE countries. For example, according to Taussig (1922), the Fordney-McCumber Tariff Act had its largest effect on wheat, meat, wool and sugar. However, the majority of the trade volume in these products did not originate in continental Europe.[13].

In summary, the evaluation of the tariff act by Taussig (1922) suggests that mostly NW countries (mostly Germany) were affected. In contrast to our earlier concerns, if this is indeed true, tariffs were levied on products from countries for which the quotas were relatively less binding. Thus, the omitted variable bias would mute (in absolute terms) the true effect of the quotas, making our estimates more conservative.

6 Conclusion

Policy debates today, much like in the 1920s, are dominated by discussions to restrict migration from undesirable countries, and trade policy aimed to protect domestic industries. The passage of the 1920s Quota Acts put an end to essentially unrestricted migration from Europe, with so far unexplored consequences for US-European trade.

Using country level data from 1900 to 1937 in a difference-in-differences framework with heterogeneous treatment dosages, we find that a one percent increase in quota exposure reduces imports by 0.03% and exports by 0.07%. Building on the extensive literature of

[13]Sugar: Cuba; Wheat: Canada; Meat: Argentina and Canada; Wool: UK

trade diversion and transaction costs, we find that any potential increase in transaction costs associated with the decrease in migration did not significantly divert trade.

We discuss a potential threat that can explain these results: a spurious relationship between the timing of new tariff laws and the Quota Acts. Examining literature and data from the time of the tariff changes indicates that, if anything, tariffs were predominately levied on products from countries for which the quotas were relatively less binding. Thus, the bias introduced from this spurious relationship would mute (in absolute terms) the true effect of the quotas.

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Figures

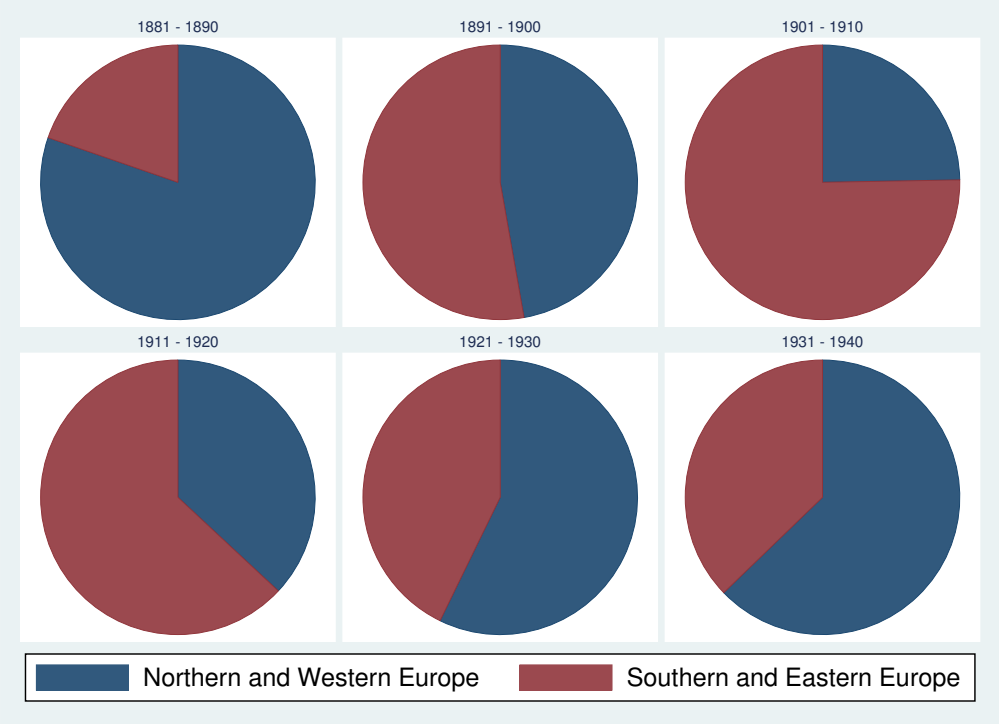


Figure 1: European Immigration 1880 - 1940: By Region

Source: Statistical Abstract of the United States, 1942, Chart No. 113: "Immigration, by Country of Origin, by Decades 1851-1940". NW Europe includes: Belgium, Denmark, Finland, France, Germany, Austria-Hungary, Great Britain, Ireland, Netherlands, Norway, Sweden, Switzerland

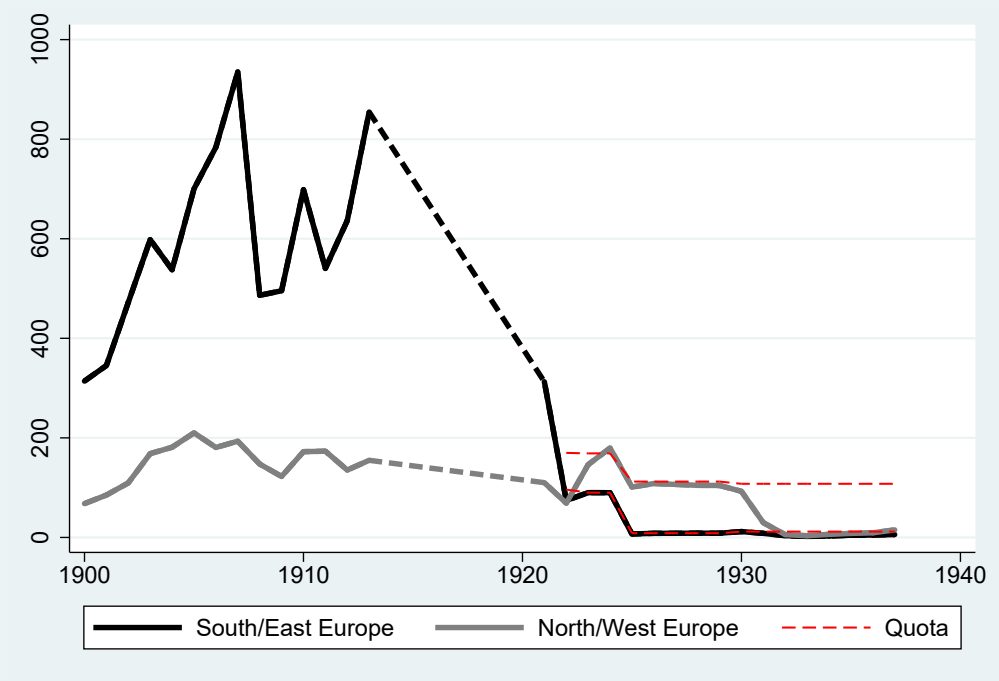
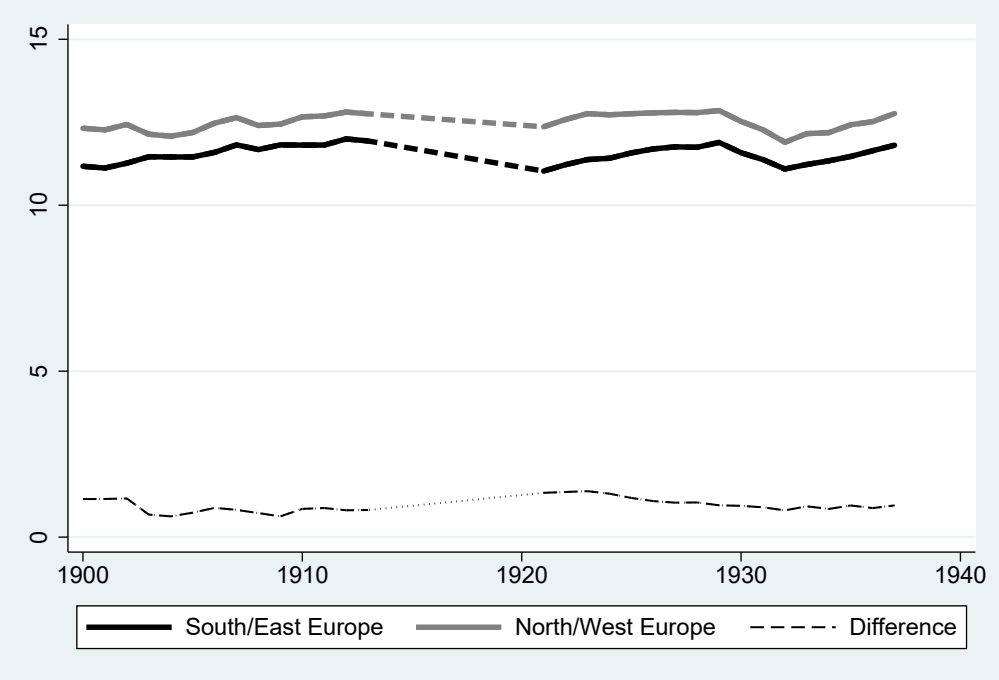
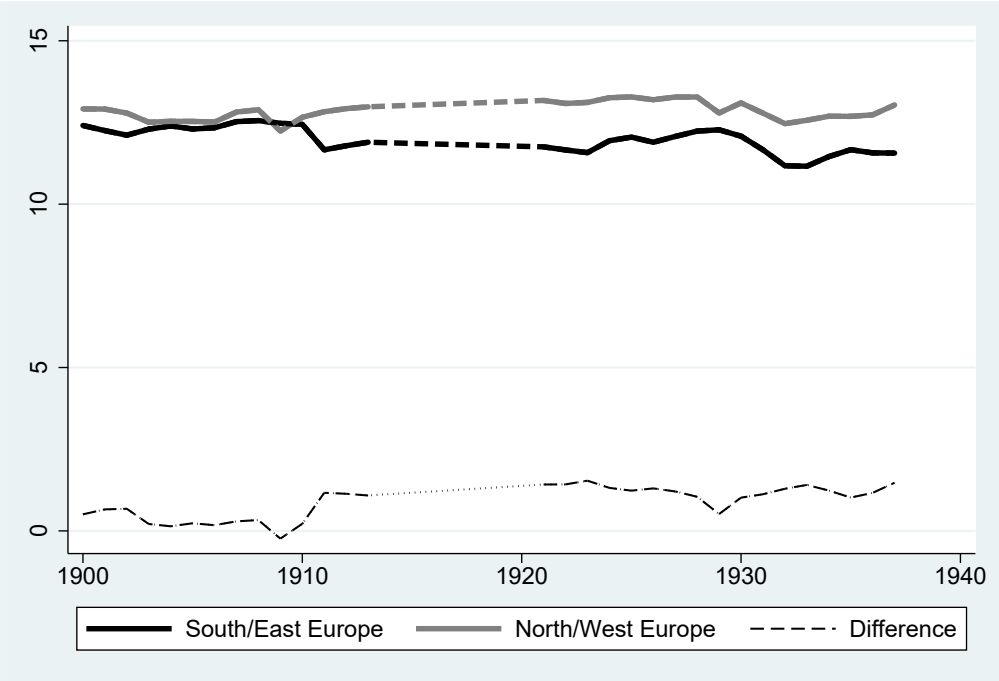


Figure 2: Actual Migration by Region

Source: Statistical Abstract of the United States (various years); in thousands. See appendix for details



(a) Imports



(b) Exports

Figure 3: Average Trade Flows by Region

Source: Statistical Abstract of the United States (various years); in logs. See appendix for details.

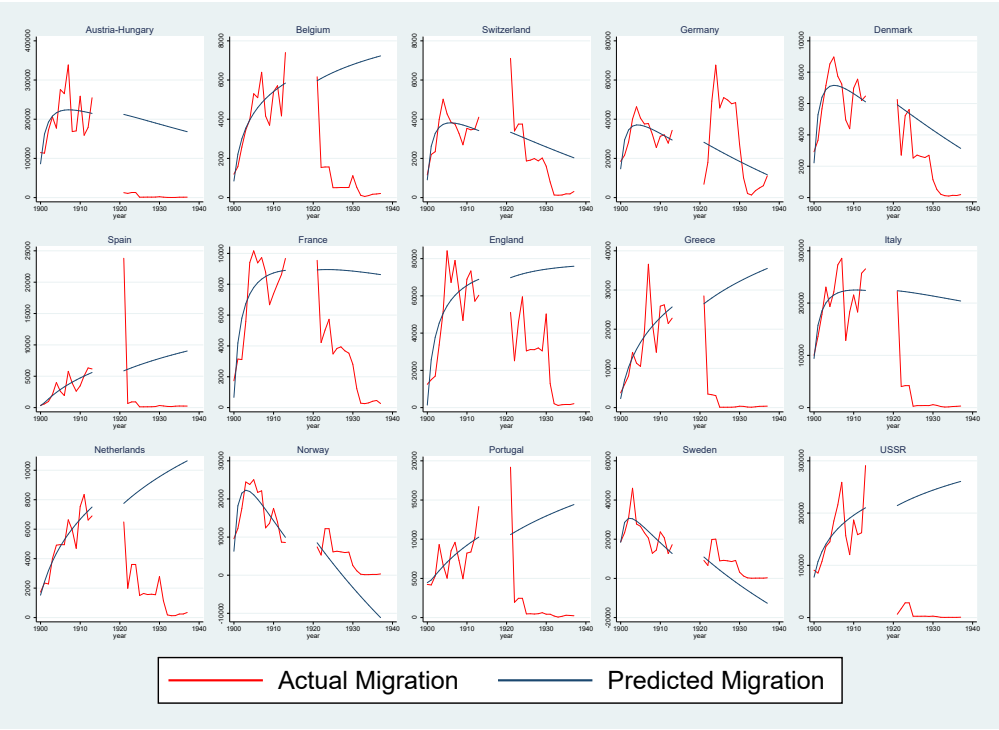


Figure 4: Predicted Migration by Country

Tables

Table 1: Quotas and Migration by Country

Country	Immigration (Pre-Quota)	Immigration (Post Quota)	Quota	Missing Migrants	# Years Binding
Southern and Eastern Europe					
Austria-Hungary	191,035	3,184	3,988	184,961	5
Greece	18,019	784	788	30,947	13
Italy	204,922	10,277	11,988	201,925	4
Portugal	8,357	722	843	11,935	4
Spain	4,645	319	338	7,335	11
USSR	153,777	5,907	7,884	233,507	4
Northern and Western Europe					
Belgium	4,418	607	1,105	5,612	6
Denmark	6,313	1,827	2,520	1,892	1
France	7,400	2,468	3,853	4,985	1
Germany	30,732	27,748	41,720	0	2
Netherlands	5,224	1,392	2,768	6,648	2
Norway	15,914	4,077	5,493	0	3
Sweden	21,868	6,068	8,403	0	1
Switzerland	3,616	1,503	2,207	425	2
United Kingdom	52,013	22,444	52,633	21,200	1

In Column 1, the variable is calculated as the average number per year during 1900 - 1913. In Column 2, the variable is calculated as the average number per year during 1922 - 1937. Column 3 presents the average quota per year during 1921 - 1937 under the 1921 and 1924 Immigration Acts. In Column 4, the variable calculates the number of missing migrants during 1921 - 1937 as explained in Section 4.

Table 2: Summary Statistics by Country

Country	Trade				Migration	Pop	GDP	Tariff
	Total	Share US	Share NW	Share SE				
Southern and Eastern Europe								
Austria-Hungary	677.26	0.03	0.55	0.14	99683.45	11003.90	3060.21	0.09
	(220.86)	(0.04)	(0.16)	(0.03)	(111641)	(4553.86)	(426.78)	(0.04)
Greece	175.44	.19	.62	.13	2558.85	6340.93	3089.68	.22
	(69.92)	(.10)	(.05)	(.03)	(7026.15)	(371.15)	(307.48)	(.11)
Italy	776.36	.11	.59	.14	104459.8	38207.45	2548.80	.10
	(281.55)	(.12)	(.05)	(.05)	(106337.5)	(2907.87)	(185.96)	(.06)
Portugal	90.80	.06	.75	.12	4416.19	6259.03	1884.96	.24
	(32.69)	(.06)	(.09)	(.08)	(4790.77)	(607.04)	(249.10)	(.11)
Spain	388.77	.09	.76	.07	2561.38	21248.14	4716.03	.23
	(251.04)	(.10)	(.10)	(.03)	(4563.56)	(2001.48)	(685.24)	(.13)
USSR	860.33	.05	.75	.08	93902.96	158017.3	2471.64	12.24
	(371.23)	(.08)	(.11)	(.02)	(92421.98)	(20780.77)	(347.98)	(36.65)
Northern and Western Europe								
Belgium	1090.01	.055	.73	.08	2286.47	7651.5	5962.2	.04
	(268.08)	(.05)	(.05)	(.03)	(2156.30)	(478.35)	(550.80)	(.03)
Denmark	482.78	.04	.89	.06	3997.80	3181.38	5756.22	.06
	(206.38)	(.04)	(.03)	(.01)	(2868.41)	(406.91)	(888.69)	(.01)
France	1715.84	.09	.62	.15	4854.45	41044.45	4900.22	.11
	(608.05)	(.08)	(.05)	(.04)	(3426.82)	(696.98)	(486.24)	(.06)
Germany	3158.72	.06	.50	.25	28888.69	62529.24	4909.65	.15
	(978.12)	(.06)	(.04)	(.09)	(17713.66)	(3747.63)	(610.67)	(.18)
Netherlands	1079.96	.06	.78	.10	3246.25	6825.16	5198.58	.02
	(295.63)	(.06)	(.05)	(.05)	(2514.01)	(1165.96)	(351.19)	(.02)
Norway	273.35	.07	.84	.08	9804.54	2588.93	4637.16	.11
	(98.12)	(.07)	(.06)	(.02)	(7935.79)	(245.54)	(517.23)	(.02)
Sweden	467.65	.08	.85	.07	13713.39	5772.25	4610.35	.09
	(209.54)	(.07)	(.08)	(.02)	(11176.25)	(407.67)	(668.19)	(.01)
Switzerland	535.99	.05	.67	.21	2525.71	3819.90	5437.16	.08
	(161.82)	(.05)	(.05)	(.04)	(1693.04)	(267.48)	(501.14)	(.05)
United Kingdom	4048.96	.10	.47	.14	36760.52	44742.23	6475.19	.11
	(1548.10)	(.08)	(.09)	(.04)	(25819.02)	(1652.71)	(823.93)	(.07)

This table shows means and standard deviations (in parentheses). Variable sources and calculations are described in the Appendix. The calculation of the averages excludes the years 1914 - 1920 due to WWI. Total trade comes from COW 4.0. Values in millions of US Dollars. Population is in thousands, GDP is real GDP per capita (USD), and tariff is the government revenue from customs as a share of total imports.

Table 3: Effect of 1920's Quotas on Migration

	Total (Full Sample)	Total (Subsample)	Ag. Workers	Professionals	Skilled	No Occupatio
Quota Exposure	-0.10***	-0.21***	-0.10**	-0.06**	-0.10***	-0.03
	(0.02)	(0.04)	(0.04)	(0.02)	0.03	(0.03)
N	465	200	200	200	200	200
R^2	0.9	0.91	0.8	0.93	0.9	0.87
Mean (Total)	7.52	8.92				
	[4.32]	[3.66]				
Mean (NW Europe)	5.27	6.15				
	[4.14]	[4.48]				
Mean (SE Europe)	10.88	10.59				
	[1.43]	[1.47]				

Estimation based on equation (2). Robust standard errors in parentheses; ***, ** and * denote 1%, 5% and 10% significance levels. Quota Exposure means (and standard deviations) are calculated over the period 1922 - 1937. Subsample refers to the countries for which migration by occupation was available: France, Germany, Greece, Italy, Portugal, Russia, Spain, UK. See the appendix for a list of countries.

Table 4: Effect of 1920's Immigration Quotas on Trade

	Imports			Exports		
	(1)	(2)	(3)	(1)	(2)	(3)
Migration	0.039	-	-	-0.025	-	-
	(0.055)	(-)	(-)	(0.029)	(-)	(-)
Quota Exposure	-	-0.052***	-0.029***	-	-0.062***	-0.076***
	(-)	(0.013)	(0.012)	(-)	(0.011)	(0.010)
% Free Exports to US	-	-	0.045*	-	-	0.036**
	(-)	(-)	(0.026)	(-)	(-)	(0.015)
Avg. Import Tariff	-	-	0.032	-	-	0.065*
	(-)	(-)	(0.053)	(-)	(-)	(0.033)
N	462	462	462	462	462	462
R^2	0.79	0.79	0.89	0.91	0.92	0.94
Wild Bootstrap-t	0.49	0.00	0.02	0.39	0.00	0.00

Estimation based on equation (3). Robust standard errors in parentheses; ***, ** and * denote 1%, 5% and 10% significance levels. The row 'Wild Bootstrap-t' shows p-values for the migration/quota exposure variable from a wild bootstrap as in Roodman et al. (2019).

Table 5: Trade Diversion Effects of the 1920's Immigration Quotas

	Imports		Exports	
	Europe	World	Europe	World
Quota Exposure	-0.002	0.001	-0.02	0.022
	(0.027)	(0.027)	(0.027)	(0.027)
Avg. Export Tariff Rate	0.216	0.129	0.242*	0.138
	(0.144)	(0.138)	(0.143)	(0.142)
Avg. Import Tariff Rate	-0.07	-0.062	-0.07	-0.044
	(0.117)	(0.116)	(0.115)	(0.114)
N	437	437	437	437
R^2	0.437	0.483	0.469	0.494
Wild Bootstrap-t	0.96	0.99	0.53	0.48

Estimation based on equation (3). Robust standard errors in parentheses; ***, ** and * denote 1%, 5% and 10% significance levels. The row 'Wild Bootstrap-t' shows p-values for the migration/quota exposure variable from a wild bootstrap as in Roodman et al. (2019). Quota Exposure refers to the measure in Ager and Hansen (2017) as discussed in Section 4. Columns 'Europe' and 'World' refers to total trade with Europe and the world (excl. US), respectively.

Table 6: Tariff Rates by Selected Product and Tariff Act

Product	Payne-Aldrich	Fordney-McCumber Act	From SE Europe
Sugar	1.68 a pound	2.20 a pound	<1%
Wool	multiple rates	multiple rates	<1%
Wood	multiple rates	multiple rates	<1%
Wheat	0.25 a bushel	0.30 a bushel	<1%
Beef	0.015 a pound	0.03 a pound	<1%
Lamb	0.02 a pound	0.04 a pound	<1%
Agricultural Machinery	Free	Free	<1%†
Binder Twine	Free	Free	<1%
Tungsten	20% ad valorem	0.45 a pound	<1%†
Ferrotungs	25% ad valorem	0.60 a pound	n/a
Manganese	Free	0.01 a pound	<1%†
Poultry	0.03 a pound	0.03 a pound	<1%
Eggs	0.05 a dozen	0.08 a dozen	<1%
Corn	0.15 a bushel	0.15 a bushel	<1%
Oats	0.15 a bushel	0.15 a bushel	<1%
Olives	0.15 a gallon	0.20 a gallon	>95%
Apples	0.25 a bushel	0.25 a bushel	<1%†
Apricots	Free	0.50 a pound	n/a
Lemons	0.015 a pound	0.02 a pound	>95%
Potatoes	0.25 a bushel	0.50 per 100	<1%
Peanuts	0.01 a pound	0.04 a pound	<1%
Butter	0.06 a pound	0.08 a pound	<1%
Pig Iron	free	0.75 a ton	<1%†
Steel rails	free	2.24 a ton	<1%†
Iron ore	free	free	<5%†
Toys	35% ad valorem	70% ad valorem	<1%
Cotton (raw)	Free	Free	<1%
Hides	Free	Free	<5%
Coal	Free	Free	<1%
Books	Free	Free	<5%
Glasswear for Chemicals	Free	65% ad valorem	<15%†
Bread	Free	Free	n/a
dyestuffs (coal tar)	30% + 0.05 a pound	40% + 0.07 a pound	<1%
Average Duty on all Imports	**19.30%**	**14%**	
Average on Dutiable Imports	**40.80%**	**38.50%**	

Compilation of tariff rates taken from Taussig (1922) andThe New York Times (1922). Payne-Aldrich Act was implemented in 1909, Fordney-McCumber Act in 1922. Fraction of US imports from SE Europe (last Column) calculated from Foreign Commerce and Navigation of the United States (1920). † mark products for which 1922 data was used due to missing data in the 1920 report.

Appendix

A1 Variable Definition and Sources

Polity changes during the sample period: Austria-Hungary is listed as a single entity in our sample for the years 1900 - 1918. After 1918, we aggregate the individual country data for Austria and Hungary to keep the original polity. Similarly, Russia and Finland were listed as one polity from 1900 - 1917 and separately after. Southern and Eastern European countries include Austria-Hungary, Greece, Italy, Portugal, Spain, and USSR (incl. Finland). Northern and Western European countries include Belgium, Denmark, France, Germany, Netherlands, Norway, Sweden, Switzerland, and the UK.

Immigration Data: We use the US Statistical Abstracts 1910, 1920, 1923, 1929 1933, 1936, and 1938 to obtain migration data from 1900 - 1937. In addition, migration data for Austria-Hungary and Latin American countries between 1905 and 1919 comes from the NBER statistics of migration. The data on Immigrant Aliens admitted is from the Annual Report of the Commissioner General of Immigration. The 'skilled' category includes Actors, Architects, Clergy, Editors, Electricians, Engineers, Lawyers, Musicians, Government Officials, Physicians, Artists, and Teachers. The 'agricultural workers' category includes farmers and farm laborers. The 'No Occupation' category includes the unemployed and out-of-the-labor force, including women and children. Finally, the 'Professionals' category includes mostly manual laborers, such as Plumbers, Masons, or Carpenters. Please refer to the Annual Reports for details.

Tariff Rates: We use three tariff variables in our regressions. First, a country's average tariff rate is calculated as the ratio of government revenue from customs relative to total imports. Second, for the EU-US trade regressions, we approximate for country $i's$ average export tariff to the US by calculating its exports free of duties in year t relative to its exports free of duties in year 1914. During 1914, the Underwood-Simmons tariff act set tariffs to historic lows. As such we interpret an decrease in free exports to the US relative to 1914 as an increase in the average tariff rate. Third, for the regressions involving trade between EU countries and the rest of the world we calculate country $i's$ average export tariff rate as the average tariff of country $i's$ Top Five trading partners. We interpret an increase in partner $j's$ import tariff as a rise in country $i's$ average export tariff.

Table A1: Variable Definitions and Sources

Variable	**Definition**	**Source**
US-Europe Migration	Arrivals of Immigrants/Quota Aliens Admitted	Statistical Abstracts of the United States (1910, 1920, 1923, 1929, 1933, 1936, 1938)
US Immigration Quota	Immigration Quotas Alloted	Statistical Abstracts of the United States (1910, 1920, 1923, 1929, 1933, 1936, 1938)
US-Europe Migration by Occupation	Immigrant Aliens Admitted, by occupations and race or people	Annual Report of the Commissioner General of Immigration (1900 - 1912 and 1920 - 1932)
EU Imports from US	Merchandise Imported into and Exported From the United States	Statistical Abstracts of the United States (1910, 1920, 1923, 1929, 1933, 1936, 1938)
EU Exports to US	Merchandise Imported into and Exported From the United States	Statistical Abstracts of the United States (1910, 1920, 1923, 1929, 1933, 1936, 1938)
Total Trade Volume	Sum of Total Imports and Total Exports in current British Pounds	CEPII - Bilateral Trade Historical Series (TRADHIST)
Population	Population, mid-year (thousands)	Maddison Project Database, version 2018
GDP	Real GDP per capita in 2011US$ (multiple Benchmarks)	Maddison Project Database, version 2018
Tariff Rates - European Countries	Government Revenue from Customs as a share of total imports	Mitchell: European Historical Statistics, 1750-1970
US Import Tariffs by Tariff Schedule	Imported Dutiable Merchandise - by Tariff Schedules	Statistical Abstracts of the United States (1920, 1940)
EU Imports from EU/World	Sum of Imports of country i form EU/World	Correlates of War Project Trade (v4.0)
EU Exports to EU/World	Sum of Exports of country i to EU/World	Correlates of War Project Trade (v4.0)