Export-led and Migration-led Belle Époque in Argentina (1870-1913).
What role of the European Migrants?

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Abstract

From 1869 to 1914, the Argentinian population soared from 1.877.490 to almost 8 million people and the country became one of the main destinations of European mass migration. At the same time, Argentina's international trade (exports and imports) increased spectacularly from 10% up to 29.5% of GDP, GDP growth averaged 2.87% and Argentina became one of the top income countries worldwide. We claim that the inflow of migrants contributed significantly to reduce trade costs to the openness to trade. We provide an econometric estimation of the immigrant-trade link by augmenting the traditional gravity model. The endogeneity problem has been treated by instrumenting migration inflows by considering migration in the other South and North American destinations.

Keywords: Migration, Trade, Argentina

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1. Introduction

After the end of the civil war in 1869 and with the unification Argentina experienced its golden age that lasted until the First World War. The country increased its relevance in the world economy, moving from 0.34% in 1870 up to 2,02% of the world GDP in 1913 and GDP per capita roses from 2514 US$ up to 6505 US$. In the following decade the economy stagnated and then collapsed altogether during the Great Depression of the 1930s, as shown by Figure 1 (a 5-year moving average of the growth rates, between 1810 and 1930).

Figure 1 Argentina: 5-year economic growth rate, 1810 1930. Source: Ferreres, O. J. (2005). Dos siglos de economía argentina (1810-2004): historia argentina en cifras. Fundación Norte y Sur

In this work, we focus on the period of the Belle Epoque, from 1870 to 1913. This was also the period of the formation of the modern Argentine Republic. Deep social and institutional transformations followed the mass migration of millions of Europeans. One can think to the reduction of illiteracy (78.24% in 1869 fell to 37.87% in 1914); the construction of the most advanced railways infrastructure in Latin America; the establishment of constitutional government and the rule of law and then a system of land tenure that encouraged settlement and increasing production; the expansion of the land frontier[2] with the *Conquista del Desierto* campaign, when 15000 square leagues become part of Argentina, at the expense of indigenous people.

The Second Industrial Revolution (1856-1878), that is innovation in transportation technology and greater opportunities for the participation in the global economy, reached Latin America and Argentina later than the industrialized countries of the time. According to Bertola (2010), the first wave of globalization, which took place in Latin America roughly speaking between 1870 and 1913, is the period during which changes in transportation technology had a true impact on Latin American economy. Indeed, transoceanic shipping was easier and Argentina becomes closest to Europe. The reduction in transport costs and the increase in European

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[2] Migration, Population Composition and Long Run Economic Development: Evidence from Settlements in the Pampas F Droller - The Economic Journal, 2017

income contributed to the agro-exporter growth model of Argentina and the country became one of the most important hubs for international trade.

The main institutional, social and economic change was the mass migration from Europe, especially Southern Europe, that accompanied the integration of Argentina to the world economy. Figure 2 shows the increase in the share of immigrants over the native population, from 13% to 45%, and in the openness to trade, rising from 30.9% up to 42.6%[3].
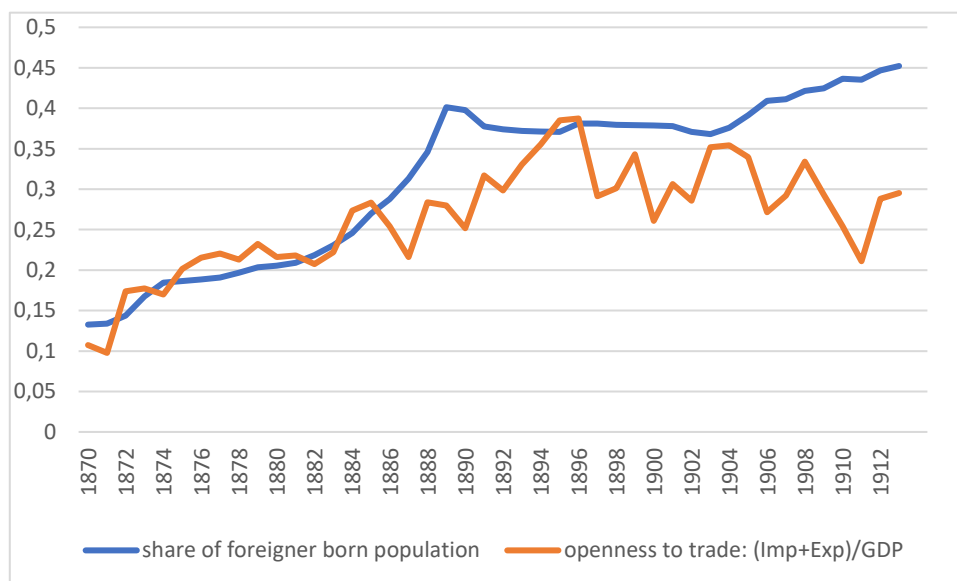

Figure 2 Migration and Trade in Argentina (1870-1914). Source: authors' calculation based on Ferreres, O. J. (2005) and Federico Tena (2016).

As an example of the rapid and tremendous transformation, Buenos Aires, called la *gran aldea[4]* (the big village) in the 1850, at the turn of the century became the Paris of South America for its opulent architecture (Colón Theatre was opened in 1908, Congress Palace and Tribunals were work in progress, and Carlos Thays drew Palermo's gardens), advanced infrastructures (gas, tramways, electricity, *Avenida de Mayo*), sparkling economic activity and cultural scene (the best of the European culture gave conferences in Buenos Aires: Vicente Blasco Ibáñez, Anatole France and Guglielmo Marconi were there during the 1st centenary of the May's Revolution, may 25th 1910). It seems that in Europe, sentences as "Argentina the breadbasket of the world" or "wealth as an Argentinian" were common at that period[5]. As noted by Roberto Cortés Conde "not only the physiognomy of the city changed. *Porteños[6]* changed". Since the yellow fever's time (1870), when 207.100 people lived in Buenos Aires, up to 1913 there were 1.510.200 people, and almost half were foreign born.

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[3] Source: Ferreres, Orlando J. *Dos siglos de economía argentina (1810-2004): historia argentina en cifras*. Fundación Norte y Sur:, 2005.
[4] López, Lucio Vicente, and Rafael Alberto Arrieta. *La gran aldea*. Vol. 20. Centro Editor de América Latina, 1967.
[5] There are several evidences of these sentences. For a reference Bard P., Ferrer M., Pigüé: Les Aveyronnais de la pampa, Le Monde, 8,10,2010
[6] Residents of the city of Buenos Aires.

In the first decades of XIX century, Argentina was underpopulated (600.000 inhabitants) and since the colonial era Spain had monopolized its international trade. Indeed, the Spaniard Crown had the exclusive right to deliver the permission to trade trough seaports in the River Plate, where the Buenos Aires was the main harbour. Table 1 shows the composition of exports from the River Plate's harbours:[7] the main exported products were cow leather from the pampas, gold and silver extracted from the Potosì silver mines, imports were inputs used in this industry. Spaniard vessels (privates and Real Hacienda) covered the 72% of the exports of metals, the English vessels of the South Sea Company 13% and the Portuguese 26%.

Table 1 Total export from the River Plate. Source: as in footnote n.5

Total export from the River Plate, 1715-1778 (Spanish vessels: privates and Real Hacienda).		
Commodity	Value (Spanish Dollar)	share
Gold	6,093,806	10.50%
Silver	44,420,567	76.52%
metals	50,514,373	87.02%
Leather	5,742,933	9.89%
Vicuña wool	798,620	1.38%
Others (except metals)	994,467	1.71%
Total export	58,050,393	

Independence and the first wave of globalization corresponded to a deep economic transformation. Large inflows of European immigrants and changes in the pattern of trade occurred at the same time. The most important export commodities became hides, wool, cereals, and meat [8]. Starting from the 1880s Argentina converged, and overtook for a while, the leader industrialized countries in terms of income level. It became member of the exclusive club of the top ten richest countries in the world (see Figure 3). In 1913, with a real GDP per capita of 6505$US Argentina was the richest country in Latin America.

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[7] Jumar, F. (2000) Le commerce atlantique au Río de la Plata, 1680-1778 [en línea]. Tesis doctoral. École des Hautes Études en Sciences Sociales, especialidad Historia y Civilizaciones.

[8] Švepeš, Václav. "Ways to Enrichment in Argentina, 1880–1900." *Prague Papers on the History of International Relations* 2 (2016): 71-81.
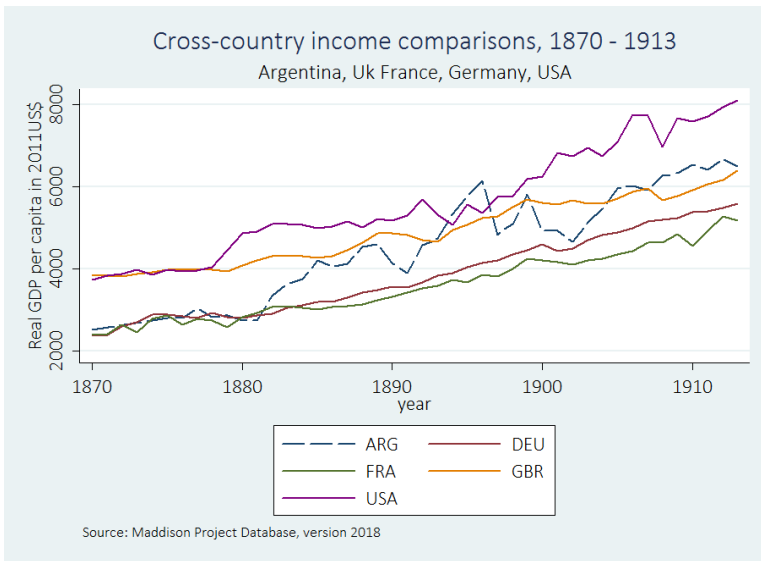
Figure 3 Real per-capita GDP of the 5 richest countries (1870-1914)

In this paper we show how immigration from Europe played a central role in the Argentine economic expansion of international trade. We provide econometric evidence of the immigration-trade link using an augmented gravity model. The endogeneity problem is treated by means of instrumental variables obtained by exploiting immigration flows in other South and North American countries in the same spirit as in Autor et al. (2013) for the identification of the China shock.

The paper is organized as follow. In the next section we present the case-study and we show some descriptive statistics. In section 3 we describe our data and the estimation strategy. In section 4 we discuss our preliminary results and section 5 concludes.

2. Descriptive statistics of the historical context

The most important domestic factor that determined the rapid and deep transformation in Argentina in the second half of the XIX century was demography, with migration playing a key role. As the British consul in Buenos Aires noted, circa 1890, "Never has such a proportionally large immigration entered in a country in a short period before" (Cortes Conde, 1993, p. 59). In 1810 in Argentina lived almost 600.000 people, one century later population increased tenfold.

The Argentine government promoted migration in order to offset the lack of labour force due to the abolition of slavery (1853) and in order to populate the new lands that followed the expansion of the land frontier. Census data are consistent with the hypothesis that immigrants crowded into cities and thus drove the dramatic urban growth of the period (Taylor, 1997). The table below shows the increase of the population and the increasingly share of immigrants, where the major nationalities were Italians and Spaniards.

Table 2 Argentina: Population, 1870-1913.

Year	Population (annual average)	Growth rate	Share of immigrants	of which Italians	of which Spaniards
1870-1880	2.208.000.00	35.70%	17.60%	43.00%	15.70%
1881-1890	3.039.000.00	31.60%	29.20%	52.70%	14.90%
1891-1900	4.118.400.00	31.10%	37.80%	61.10%	19.10%
1901-1913	6.037.923.00	57.80%	43.80%	67.00%	30.90%

Buenos Aires provides a significant example, a rather unique case of an urban labour market with an overwhelming presence of immigrant workers[9]. In the late nineteenth century, the city counted nearly 664,000 inhabitants, and among these, more than 80,000 were Spaniards (12.1%) and 180,000 Italians (27.4%). Nearly 70% of the population growth was due to immigration between 1887 and 1895. At 6.6% annually, this growth rate was similar to New York City's experience[10]. The share of foreigners residents in Buenos Aires peaked in late nineteenth century with Italians as the largest group. In the local labor market, manufacturing represents 34% of relative weight of sectors, services 25% and retail 18.1%. Spaniards and Italians covered 53.9% of jobs in the manufacturing sector, and 55.8% both in services and retail sectors. In 1895, they owned 92% of the industrial firms and 80% of the retail businesses.

The Argentine government supported European migration with relevant subsidies for transoceanic travels. An illustrative case is the "Ley Avellaneda" (Ley Nacional n. 817/1876). In May 1876 President Avellaneda declared to the National Congress "the imperative need to attract migration" and created the Immigration

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[9] Abad, L. A., & Sánchez-Alonso, B. (2018). A city of trades: Spanish and Italian immigrants in late-nineteenth-century Buenos Aires, Argentina. *Cliometrica*, *12*(2), 343-376.

[10] Lattes, A., & de Lattes, Z. R. (1992). Auge y declinación de las migraciones en Buenos Aires. *Jorge Jorrat y Ruth Sautu (comps.), Después de Germani. Exploraciones sobre estructura social Argentina, Paidós, Buenos Aires*, 176-196.

National Direction, which encouraged migration from Europe through immigration agencies in Europe. The main pull factors to migrate to Argentina for European workers were the income differential and the expected

Figure 4 Income comparisons and migration
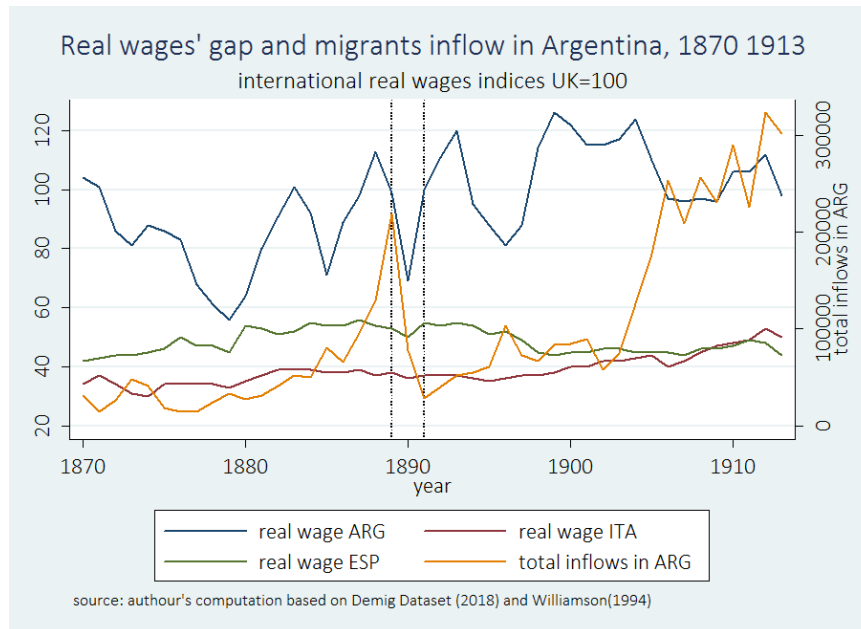
high labour demand. As shown in figure 4, there is a positive correlation between the real wage gap Argentina-origin countries (Italy and Spain) and the immigrant inflow (respectively 0.16 for Italy and 0.32 for Spain) [11]. Both origin countries experienced an economic crisis at the end of the XIX century due to the transition to the industrialization and the modern market economy where a large part of the population was excluded from the industrialization process and looked for a better life in the new world. The vertical lines represent the years of the Baring crisis of 1890, that hit Argentina very hard, with his GDP growth rate equal to -8.2% in 1890 and -5.3% in 1891. And, as suggested by the Italian diplomatic reports [12] of the period, the observed reduction in immigrant inflow was a consequence of the economic crisis hat Argentina in that period. Baring crisis of 1890

The Argentine integration in the world economy coincided with the first wave of globalization, characterized by technological progress and decreasing transportation costs. Over the period, as shown by Jacks and Pendakur (2008), freight rates fell on average by 50% while global trade increased by 400%. Growth was undoubtedly export-led (between 1870 and 1913, average growth rate of the economy was 5.93%, average export growth rate was 7.97%) with a trade pattern based on agricultural and mining products. Exports soared between 1850 and 1923 and Argentina succeeded in increasing its share in world exports, from 0.8% to almost

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[11] We used the setting by Williamson (1994) and the migration data from the DEMIG database (2018). The real wage is constructed as an index where the real wage in UK is = 100.
[12] Chicco, A. (1893), Buenos Aires, in Emigrazione e Colonie, Raccolta di rapporti dei R.R. Agenti diplomatici e consolari, Roma, MAE

4%[13]. This powerful expansion was part of a more general increase in world trade and Argentina was one of the winners. [14]

Table 3 Indexes of Argentine Trade

year	Value of exports (millions of USD)	value of imports (millions of USD)	openness of the economy (IMP+EXP)/GDP
1870	29.16	47.39	30.96%
1880	56.32	43.93	31.15%
1890	97.27	137.23	49.28%
1900	152.29	111.79	32.35%
1913	497.85	475.86	42.64%

Imports also increased tenfold. The main trading partners were Great Britain, France, Belgium and Germany, i.e. European countries that experienced an increase in income levels. Spain and Italy played an important role in trade with Argentina too. In terms of value, Argentina traded 4.45 million of US$ with Italy in 1881 and the flow reached 59.27 million in 1913. The trade flow with Spain soared from 3.82 million in 1881 to 18.96 million in 1913. Trade openness increased by almost 12% during that period as shown in Table 3.

As underlined in the migration-trade literature, migration facilitates international trade with origin countries by lowering trade costs. Transactions costs decrease in several ways. Migrants can reduce information costs via a pure network effect that tends to reduce uncertainty and increases trust between commercial partners. Gould (1994) investigating the immigrant links to the home country and implications for U.S bilateral trade noted that: "immigrants' ties to their home countries can play a key role in fostering bilateral trade linkages. Immigrant ties include knowledge of home-country markets, language, preferences, and business contacts that have the potential to decrease trading transaction costs. The empirical results indicate that immigrant information can play an important role in determining U.S. bilateral trade flows". Moreover, European migration induced a change in consumers' tastes and consequently in the composition of imports – the so-called "olive oil effect".

The pro-trade effect of migration has also been suggested by many economic historians in analysing foreign trade during the period of the European mass migration. As shown by Ramon-Muñoz[15] Argentine imports of

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[13] Federico, Giovanni, and Antonio Tena Junguito. "A tale of two globalizations: gains for trade and openness 1800-2010 [Data set]." (2016).

[14] Source: Ferreres, Orlando J. *Dos siglos de economía argentina (1810-2004): historia argentina en cifras*. Fundación Norte y Sur:, 2005

[15] Ramon-Muñoz, Ramon. "MIGRATION AND TRADE: THE CASE OF SOUTHERN-EUROPEAN IMMIGRATION AND OLIVE OIL IMPORTS IN THE AMERICAS (1875-1930)." *8th Conference of the European Historical Economics Society (EHES), Geneva, Graduate Institute of International and Development Studies*. 2009.

olive oil and wine increased after European mass migration. Since colonial period, Argentina imported from Spain wines from Catalonia and Valencia and up to 1880 wine was the main commodity imported from Spain. In 1887 Spanish immigrants established the Spanish Chambers of Commerce of the Argentine Republic in order to promote Spanish trade penetration in the former colony.

Some authors have suggested the link between migration and trade in the historical literature. Alejandro Fernández (2004: 70-76) has underlined the correlation between overall Argentine imports and immigration flows from both Spain and Italy before World War I. Vera Zamagni has argued that the growth of Italian exports to Argentina and the United States prior to 1913 could be partly explained "*by the massive presence of Italian immigrants in these countries*" (Zamagni 1993:125). Following the intuition by Zamagni, our work verifies empirically the impact of European migration on international trade of Argentina.

3. Data and Method

Our empirical strategy relies on the standard gravity model augmented by immigration:

$$TRADE_{A,B,t} = \left[\frac{(GDP_{A,t})^\alpha (GDP_{B,t})^\beta X_{A,B}^\xi}{DIST_{A,B}^\gamma V_{A,t}^{\theta_1} V_{B,t}^{\theta_2}}\right] IMM_{A,B,t}^\delta \qquad (1)$$

where $TRADE_{A,B,t}$ is the trade flow from country B to any country A at time t. $(GDP_{A,t})^\alpha$ and $(GDP_{B,t})^\beta$ are the GDP of both countries at time t. $X_{A,B}^\xi$ is a time-invariant dummy variable that indicates whether the country pair shares a common language. $DIST_{A,B}^\gamma$ is the geographic distance between each country weighed by their populations. $V_{A,t}^{\theta_1}$ and $V_{B,t}^{\theta_2}$ represent the aggregate trade protection of country A and country B. The flows of immigrants from country A to country B, $IMM_{A,B,t}^\delta$, is our primary variable. A log-linear transformation is estimated by Pooled OLS or Pseudo-Poisson Maximum Likelihood method.

The main source of data is the TRADHIST dataset. [16] Bilateral nominal trade flows, nominal GDPs, population, and factors that are known to favor or hamper trade, including geographic distance, linguistic links and bilateral tariffs, are all included in TRADHIST.

The dataset on migration in Argentina from 1870 to 1913 has been put together by collecting information in several historical archives (Sources: Extracto estadístico de la República Argentina correspondiente al año 1915, Biblioteca Tornquist, Banco central de la República argentina; Annuario statistico dell'emigrazione italiana / a cura del Commissariato generale dell'emigrazione 1876/1925). The migration flows have been obtained for 8 European origin countries – Austria-Hungary, Belgium, France, Germany, Italy, Spain, Switzerland and United Kingdom.

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[16] Michel Fouquin & Jules Hugot. 2016. "Two Centuries of Bilateral Trade and Gravity Data: 1827-2014". CEPII Working Paper 2016-14. CEPII

4. Empirical Results

We first estimate the log-linearized version of model (1) by OLS with three different specifications to highlight different channels of the pro-trade effect of immigration on bilateral trade flows, on exports and on imports from the European origin countries.

The log-linearization of the gravity model has been criticized because of the heteroskedasticity of non-negative trade data (Anderson and Van Wincoop, 2003; Santos-Silva and Tenereyo, 2006; Head and Mayer, 2014). The most reliable method to estimate the gravity equation is then Pseudo-Poisson Maximum Likelihood. In Table 4, we show the results with both methods.

The coefficients of the migration inflows are positive and significant at the 95 level and the magnitude is never lower than 0.08. Most estimated coefficients have the expected sign. The GDP and the common language between country pairs *(A,B)* have a positive effect on trade, while the level of trade protection show a negative effect. The distance variable is dropped from the OLS and the PPML estimation because of collinearity with all the dummy variables– country-pair and year fixed effects. Therefore, the preliminary results confirm our hypothesis of a pro-trade effect of immigration to the trade pattern of Argentina during the *Belle Epoque* period.

As expected, the coefficient estimated with the PPML method are greater than the coefficients of the OLS regression, and this is typical of small-sample estimations (Head and Mayer, 2014).

Table 4 The Gravity Model Estimation

	[POLS]	[EXP]	[IMP]	[PPML]	[EXP]	[IMP]
ln GDP origin	0.750***	0.005	0.510***			
	[0.101]	[0.075]	[0.091]			
ln GDP Dest.	0.643***	0.883***	-0.004			
	[0.100]	[0.158]	[0.045]			
ln Imm. Flows	0.096***	0.112**	0.080***			
	[0.028]	[0.045]	[0.030]			
ln Dist. (weigthed)	0.000	0.000	0.000			
	[.]	[.]	[.]			
ln Tariff Dest.	-0.096***	-0.109***	0.000			
	[0.024]	[0.034]	[.]			
ln Tariff Origin	-0.104***	0.000	-0.091***			
	[0.023]	[.]	[0.019]			
Common Lang.	0.122***	0.141***	0.048	0.083	2.225***	0.604**
	[0.034]	[0.051]	[0.029]	[0.492]	[0.634]	[0.275]
GDP origin				5.751***		5.075***
				[0.793]		[0.509]
GDP Dest.				9.115***	10.346***	
				[0.939]	[1.181]	
Imm. Flows				2.525***	3.253***	1.949***
				[0.315]	[0.528]	[0.224]
Tariff Origin				-1.602***	-1.903***	
				[0.552]	[0.698]	
Tariff Dest.				-1.807***		-2.190***
				[0.533]		[0.413]
R-squared	0.927	0.942	0.952	0.898	0.895	0.977
Obs.	264	132	132	264	132	132

Notes: The dependent variable in column 1 and 4 is bilateral trade flows. The dependent variable in column 2 and 5 is Exports from Argentina and in column 3 and 6 is Imports to Arg. All the regressions include country-pair and year fixed effect. For the OLS Estimations, robust standard errors and reported in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$

4.1. Identification Strategy

Like in most of the analyses that try to assess the effect of immigration, we need to instrument migration flows in order to avoid endogeneity issues related to reverse causality or confounding factors. In particular, the main concern relays on the effect that the attracting factors of the Argentine growth pattern have had on the arrival of foreign-born workers. Indeed, migration decisions are the combination of *pull-* and *push-factors*. The firsts relate to the destination-country conditions and the seconds to the origin-country conditions. What we need is a variable that capture only the push factors of European migration to the New World.

Therefore, we implement an IV approach that uses migration to the United States as instrument. The idea is that the push factors of the migration decision are common with all the destination countries, as in Autor et al. (2013). At the same time, the trade pattern of Argentina did not affect the migration flows to United States. Our instrument is then:

$$z_{A,B,t} = IMM\_FLOWS_{A,B,t}^{USA}$$

Data of migration flows into the United States from 1870 to 1913 are sampled from the U. S. Bureau of the Census Historical Statistics.[17] We obtained migration flows from 6 European national entities: Italy, other Southern – which includes Spain, Portugal and Greece – Austria-Hungary, Germany and other North-Western – which includes France, Belgium, Nederland, Switzerland and Luxembourg. To merge the instrument with our trade data, we sum trade flows from France, Belgium and Switzerland. The results of the IV estimations are reported in

Table 5

Table 5.

Table 5 IV Estimation

	[POLS]	[EXP]	[IMP]	[IV]	[EXP]	[IMP]
ln GDP origin	1.344***	0.000	0.982***	1.341***	0.744	0.981***
	[0.076]	[.]	[0.073]	[0.067]	[0.616]	[0.055]
ln GDP Dest.	1.221***	1.592***	0.000	1.219***	1.583***	-0.251
	[0.076]	[0.114]	[.]	[0.067]	[0.087]	[0.390]
ln Imm. Flows	0.060***	0.050**	0.069***	0.094***	0.048***	0.069***
	[0.016]	[0.024]	[0.016]	[0.019]	[0.019]	[0.012]
ln Dist. (weighted)	0.000	0.000	0.000	50.500***	65.041***	22.239***
	[.]	[.]	[.]	[11.209]	[12.534]	[7.873]
ln Tariff Dest.	-0.159***	-0.192***	0.000	-0.149***	-0.201***	-0.107
	[0.055]	[0.069]	[.]	[0.049]	[0.053]	[1.011]
ln Tariff Origin	-0.197***	0.000	-0.153***	-0.200***	-0.862	-0.155***
	[0.056]	[.]	[0.044]	[0.049]	[1.598]	[0.034]
Common Lang.	0.321***	0.206***	0.200***	35.036***	45.123***	15.451***
	[0.056]	[0.032]	[0.049]	[7.733]	[8.650]	[5.434]
R-squared	0.990	0.992	0.996	0.990	0.992	0.996
Obs.	239	120	119	239	120	119

Notes: The last 3 columns show the results of the IV approach for different trade variables. The F-Statistics of the first stage are respectively 156.83, 192.84 and 394.03. All the regressions include country-pair and year fixed effect. Robust standard errors and reported in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

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[17] U. S. Bureau of the Census Historical Statistics of the United States, 1789-1945, Washington, D. C., 1949

The OLS results are confirmed and also instrumented immigration shows a significantly positive effect on Argentinian trade pattern, with a stronger effect on imports rather than exports. All the other standard variables of the gravity model preserve the expected sign, but the distance, and their significance.

5. Conclusions

In this paper we analyze the relationship between immigration and trade, focusing on a unique case-study – the European mass migration to South America at the end of the 19th century. This is the Argentine golden age, when the Argentine Republic was founded, and the country experienced its most spectacular growth ever. Two main changes characterized that period. The demographic transformation, where migration from Europe played a key role, and a tremendous increase in openness to trade due to technological progress and a reduction in transport costs.

We claim that immigration helped open the economy by favoring both exports and imports. We assess this effect by estimating a gravity model augmented by immigration. Both OLS and PPML results show that migration from 8 different European countries fostered Argentinian bilateral trade interactions with those countries.

Because of some concerns with endogenous migration flows, we implement an IV approach by means of an instrument alike in Autor et al. (2013). We consider migration flows from Europe to USA so that we can capture the common push factors of the migration decision, but not the pull factors related to Argentinian economic conditions.

The IV results confirm the OLS estimations. We conclude that international interactions, such that migration and trade, have been interconnected for a long period and their relationship can date back to the XIX century in the context of an emerging economy.

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