

RESEARCH STATEMENT

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My main research fields are Economic History and International Economics. My research builds on understanding the determinants and consequences of economic integration through migration and international trade, specifically focusing on the impacts of migration and trade shocks on the local economy. My empirical research draws on the use of digitized or hand-collected historical records coupled with novel methods of linking historical data sets. By combining different empirical strategies, such as ethnically motivated immigration shocks with rich micro-level data, my research explores causal questions from different perspectives and uncovers patterns still unknown to the literature.

In my job market paper, *"Send Them Back? The Real Estate Consequences of Repatriations"* [1], we study how the United States' repatriation of Mexican immigrants from 1930 to 1936 affected housing markets in US cities. Housing is a crucial channel through which migration affects the local economy and wealth distribution. However, most of what we know about the migration effects on housing comes from studies that focus on the inflows of immigrants. This paper is the first to quantify the impact of out-migration on housing empirically. Making this distinction when studying housing markets is indispensable because housing investment is naturally irreversible. Once a dwelling unit is built, it is prohibitively expensive to convert it back to investable capital—a characteristic also known as the "putty-clay" nature of real estate investment. Because housing is durable, the effects on prices from out-migration may be asymmetric to in-migration shocks. Our paper studies one of the largest ethnically-motivated migration shocks in US history to study the impact of an out-migration shock on local housing. Specifically, we study the United States' Mexican repatriation of the 1930s—a negative, large-scale shock to the Mexican workforce in the US—to quantify its effects on real estate outcomes of US cities.

As the Mexican Repatriation led to the out-migration of a specific populational group, it is plausible that regions *within a city* were differently affected, depending on where Mexicans lived back then. Testing this, however, requires highly granular data *at the house level* in each US city. To leverage the rich micro-level data from the Census, we develop a novel automated matching technique to link addresses across the 1930 and 1940 Censuses from the IPUMS Restricted Complete Count Data. The address-matched sample allows us to track the evolution of prices of each housing unit across the 1930 and 1940 censuses. To isolate the effect of the Mexican repatriation, we employ an instrumental variable (IV) approach. Our instrument combines a measure of exposure to the shock (the share of Mexican workers in 1900) with a measure of the cost of repatriating workers (the travel distance based on the US road infrastructure in 1930).

Using the IV approach, we quantify the precise effect of the repatriation on the most affected houses and neighborhoods. We find a massive negative effect on the prices of Mexican-occupied houses. We find that the value of houses inhabited by Mexicans in 1930 devalued by an average of 8.2 percentage points between 1930 and 1940 for every percentage point drop in a city's Mexican population. Rents on houses occupied by Mexicans in 1930 also fell by more than 2 percentage points for every percentage point of Mexican outflow. We also find that the repatriation mattered for the evolution of city-level housing market outcomes. The repatriation decreased the growth rates of coincident indicators (median house value or rents) and incidental indicators (number and value of building permits) of the city-level housing markets.

My future research agenda on this topic involves extending the automated method to link addresses across all Census pairs. My goal is that this methodological contribution becomes a "public good" provided to the research community via fully anonymous crosswalks applicable to other questions. I also plan to leverage the address-matched sample by conducting further studies on the historical evolution of house prices and housing wealth in the United States, highlighting potential heterogeneity across regions or income levels.

In 1930, another policy that affected the economic integration of the US with other countries was the general increase in tariffs from the Smoot–Hawley Tariff Act. The 1930 Tariff Act is considered one of

the most comprehensive protectionist trade policies ever implemented in the United States. In work-in-progress research, “*The Consequences of the Smoot–Hawley Tariffs on US Manufacturing*” [2], we study the responses of firms and local labor markets following the Smoot–Hawley tariffs. We exploit variation in the tariff increases across industries and variation in the industry mix of local employment across US regions to measure changes in local labor demand induced by the tariffs. This work uses detailed micro-level historical data described as follow: (i) hand-collected data of quantities and values of US imports disaggregated by product; (ii) product-level tariff rates for 1928–1932 from *The Foreign Commerce and Navigation of the US*; (iii) worker-level information from full-count *US Censuses* between 1920–1940; and (iv) establishment-level data from the *US Census of Manufactures* between 1929–1935.

Other interests on my research agenda include studying the determinants of international trade flows. In “*Port Efficiency and Brazilian Exports*” [3], published by *The World Economy*, we study the role of port efficiency in shaping international trade. We estimate the impact of vessel turnaround time on Brazilian exports. The main empirical challenge is to control for non-observed local factors that determine trade flows. We address this challenge by combining detailed data of Brazilian exports with an empirical strategy that controls for various unobserved local determinants of exports. We use a unique database with vessel turnaround time at each port and city-level exports. The data include information on the Brazilian port used, the destination country, and products. The empirical strategy relies on a difference-gravity equation to explore the variation of turnaround time in port procedures. This approach controls for unobserved characteristics and determinants common to geographically close cities, exporting the same product to the same destination country. We find that each additional hour of port procedure delay is equivalent to a reduction in relative local exports of 2%. On average, a 10% relative reduction in vessel turnaround time increases the number of exported product categories by 1%. Our findings suggest that delays in port procedures represent costs to Brazilian exporters, that may lead to loss of competitiveness of Brazilian products abroad, affecting both the intensive and extensive margins of trade.

In “*Determinants of Bilateral Trade in Manufacturing and Services*” [4], we study the determinants of international trade in services and manufacturing within a gravity framework. Gravity models have been extensively used as workhorse models to explore the determinants of international trade. While most of the literature has focused on trade in manufacturing, recent literature has emerged that uses gravity models to study international trade in services. Despite showing that gravity equations are well suited to studying trade in services, there is little research on the systematic differences and specificities when using gravity models for each type of trade. This paper addresses the determinants of aggregate bilateral trade in services *vis-à-vis* manufacturing. The main objective is to understand the systematic differences between services and manufacturing trade that are borne out empirically. In doing so, we derive a joint theory that brings out “systematic” differences in response to scale and trade cost variables between trade in manufacturing and services. We build a unified theoretical framework incorporating a *demand bias* towards services and a difference in *national product differentiation* between the two sectors. The *demand bias* yields larger income elasticities for trade in services compared to trade in manufacturing, and differences in *national product differentiation* produce a higher elasticity of bilateral trade in manufactures for the exporting country’s size than in services. We show that the model predictions find support on traditional gravity equation estimates using various specifications and estimation approaches. We also investigate the role of virtual proximity and internet infrastructure in international trade. Our findings demonstrate that virtual proximity is a strong predictor of aggregate trade in services and manufacturing.

My research interests also include the firm-level factors that determine international trade activity. Recent literature has shown that a firms’ ability to engage in international trade depends crucially on its access to credit. A growing body of research seeks to study the role of credit availability to international trade activity. However, the limited availability of firm-level data and the difficulty in separating credit supply shocks from other economic factors pose a significant challenge for these studies. In “*The Direct and Indirect Effects of Credit Shocks on Exporter and Importer Firms*” [5], we use a combination of highly granular and unique Brazilian databases hosted by the Central Bank of Brazil to investigate and quantify the effects of a sudden change in credit availability on international trade activity, including potential spillovers to the rest of the domestic economy. We study the general credit expansion from Government-owned banks in Brazil following the 2008 Global Financial Crisis to estimate these effects. Before the Financial Crisis, private and Government-owned banks behaved similarly regarding their credit operations

and growth rates. After Lehman's bankruptcy, however, increased risk concerns spread across financial institutions causing them to reduce credit availability. To prevent the adverse effects of credit constraints from spreading throughout the economy, the Brazilian Government pressed Government-owned banks to act counter-cyclically. This research contributes to the understanding of the Global Financial Crisis in 2008 to the Brazilian economy in the context of international trade. This novel work has potential policy implications for credit expansion policies in supporting exporters and importers during financial crises.

I am also interested in the consequences of international economic integration to patterns of income inequality that we observe in developing countries and developed economies. The main challenge in estimating these effects is to deal with the potential endogeneity between the labor market conditions and a country's level of international trade integration. The China's rise has provided a rare opportunity for studying the impact of a large-scale trade shock on labor markets. During the 2000s, bilateral trade between China and other developing economies such as Brazil have increased dramatically. Over the same period, Brazil and other Latin American countries experienced a large decline in wage inequality. In *"International Trade and Wage Inequality: Evidence from Brazil"* [6], we investigate the relationship between the Brazilian wage inequality and the increased international trade exposure of the country to China. Using a detailed employer-employee database, we identify the direct winners and losers from the trade shock between and within sectors. We also find that indirect exposure to trade shocks through industry production networks has important effects on wages. To understand the mechanisms behind this result, we derive a model with sector heterogeneity and selection into imports. Our model provides a reasonable approximation of first and second-order statistics observed in the economy. We then propose different counterfactual scenarios where we isolate the impact of export and import exposure. We show that the China shock is responsible for a fall of 1 percent in the overall wage variance, driven by losses in the higher-paying manufacturing sector. Average wages remain relatively unchanged. In a counterfactual scenario where tariffs were 20 percent lower, wages across the economy would have increased substantially, but at the expense of increasing the wage variance. Although highlighting the winners and losers from trade, our findings suggest a mild impact on the between-firm inequality compared to other papers in the literature. However, the wage gains could be substantially larger under counterfactual scenarios with lower tariffs, increasing wage inequality.

REFERENCES

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