Research Statement

Andrés César

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My research examines how globalization, technological change, and macroeconomic shocks affect economic development and the distribution of income and opportunities. Combining detailed microdata with empirical methods and causal identification strategies, I study how firms, workers, and households respond to changes in international trade, technology adoption, and relative prices. A central objective of my work is to understand the mechanisms through which these transformations reshape the allocation of resources and generate heterogeneous outcomes across firms, individuals, regions, and countries.

My research is organized around three closely related areas. The first examines how international trade affects firms, labor markets, inequality, and intergenerational mobility. The second focuses on the employment and distributional consequences of technological change, including its interaction with global production networks. The third studies how exchange rate shocks affect prices, product composition, and households' purchasing power. Together, these lines of research seek to provide evidence on the opportunities and distributional challenges associated with global economic integration and technological progress.

🌐 International Trade, Firms, and Labor Markets

A first strand of my research examines how international trade affects firms, workers, and local labor markets. Using detailed microdata from Chile, I show that trade shocks have heterogeneous effects depending on firms' initial productivity and workers' characteristics [1, 2]. Increased exposure to Chinese import competition leads to the contraction and exit of less productive manufacturing firms [1], with significant consequences for local labor markets, including wage declines and the reallocation of workers toward informal employment [2]. These findings suggest that the costs of import competition are disproportionately borne by more vulnerable firms and workers, reinforcing existing labor market disparities.

In related work for Brazil, I examine whether the consequences of import competition extend beyond directly exposed workers and affect opportunities for the next generation [3]. Combining two decades of household survey data with retrospective information on parental employment, I show that workers exposed to Chinese import competition experience wage declines and increasing informality, while their children become more likely to leave school and enter the labor market at younger ages. These early disruptions persist into adulthood: children of exposed workers attain lower levels of education and earn lower wages, with particularly adverse effects among disadvantaged families. I also document that limited geographic mobility and strong intergenerational industry and occupational persistence reinforce these inequalities, as children from less educated families are more likely to remain in sectors and places vulnerable to future trade shocks. These findings suggest that globalization can have lasting consequences for social mobility, particularly when labor

market disruptions affect families with limited resources to invest in their children's education.

International trade, however, also creates substantial economic opportunities. In the studies of Chilean local labor markets, I show that regions benefiting from increasing foreign demand experience higher wages, a reallocation of workers toward formal employment, and larger reductions in monetary poverty [2, 4]. Interestingly, these regions also exhibit smaller relative increases in tertiary education enrollment [2]. One possible explanation is that expanding employment opportunities increase the incentives for young individuals to enter the labor market rather than pursue further education, particularly among those from disadvantaged backgrounds or with a stronger preference for immediate earnings. Thus, even when trade generates substantial short-run economic benefits, its effects on human capital accumulation may introduce longer-term trade-offs. In related research, I examine how these trade shocks affected rural and urban areas of Chile over a longer period [6]. I find that Chinese import competition generated persistent losses in income, schooling, and labor market conditions in urban areas, while growing demand for primary exports improved earnings, employment, and poverty outcomes in rural regions, contributing to a narrowing of regional disparities.

Beyond these local labor market effects, my research also examines how firms reorganize internally when integrating into global markets. Using detailed data on Chilean manufacturing firms and exploiting tariff reductions from free trade agreements with high-income countries, I show that entering these export markets induces firms to upgrade product quality and develop more complex organizational hierarchies [5]. Firms add layers of skilled production supervisors and specialized workers performing export-related tasks, such as product design, certifications, logistics, customs procedures, and customer services. These findings highlight a mechanism through which access to high-income markets promotes organizational upgrading: producing higher-quality goods requires more sophisticated knowledge and coordination within firms, beyond the expansion of production scale.

In related research, I examine how globalization and technological change affect firms' market power in Chile and Colombia [7]. Using manufacturing firm-level data, I find that Chinese import competition reduces markups, while greater export opportunities following free trade agreements with the United States increase firms' productivity, profitability, and markups. I also show that exposure to industrial robots generally reduces markups, although the largest firms experience more favorable effects on productivity and market power. These findings suggest that trade integration and technological change can reshape competition within industries, with heterogeneous consequences depending on firms' size.

Taken together, these studies highlight the heterogeneous effects of trade integration. Access to foreign markets can foster employment growth, higher wages, and organizational upgrading, while import competition can displace vulnerable workers and generate persistent disadvantages that extend across generations. These effects also depend on firms' characteristics and local economic conditions, shaping market competition and regional disparities. Understanding these differences is essential for designing policies that facilitate productive integration into global markets while protecting workers and families from the adjustment costs of trade.

⚙ Technological Change and Inequality

Another important strand of my research examines how technological change affects labor markets and income distribution. I estimate the causal effect of robot adoption on top income inequality across U.S. metropolitan areas and find that industrial automation increases taxable incomes exclusively among the top 1 percent, with effects that become progressively larger toward the highest income fractiles [8]. Using detailed occupational data, I show that these gains are associated with two complementary adjustments: an increase in the employment shares of managers and engineers, and greater income concentration within occupations, particularly among top executives, but extending to middle-pay jobs related to production, sales, and logistics. I also document a positive association between robot adoption and the growth of billionaire wealth across countries, especially where manufacturing accounts for a larger share of this wealth. These findings suggest that the benefits of automation extend beyond conventional labor market outcomes, contributing to the concentration of incomes among top earners.

A related set of studies examines how changes in the task content of occupations shape employment opportunities in Latin America. I document a decline in employment in routine-intensive occupations, particularly among relatively low-paid jobs, suggesting a different pattern of labor market adjustment from the employment polarization observed in advanced economies [9, 11]. These changes affect workers differently depending on their education, age, and gender. Young workers face substantial exposure to automation risks, but their higher educational attainment and greater occupational mobility may also facilitate adaptation to changing labor demand conditions [10]. Similarly, although women are more concentrated in routine-intensive occupations, they have experienced a stronger reallocation toward jobs involving more flexible tasks [12]. These findings suggest that the consequences of technological change depend not only on workers' exposure to automatable tasks, but also on their opportunities to move toward occupations that complement new technologies.

Moving from occupational trends to the effects of automation exposure in Latin America, I examine how technological change affects local labor markets [13, 14]. Using variation in initial industrial specialization and robot adoption across industries, I find that automation displaces formal salaried employment in the short term in Argentina, Brazil, and Mexico, particularly among young and semi-skilled workers [13]. Informal employment acts as an adjustment mechanism, limiting the increase in unemployment. In complementary research covering seven Latin American economies, I examine longer-term automation trends associated with the routine task content of occupations [14]. I find that employment declines in more exposed labor markets, while wages increase moderately among employed workers. Unemployment rises particularly among less educated workers, whereas informality increases among middle-skilled workers. These adjustments are associated with lower relative declines in poverty and personal income inequality, without a corresponding decline in the labor share of income. These findings underscore that the distributional consequences of automation depend not only on wage adjustments, but also on workers' unequal exposure to job displacement and their opportunities to remain in formal employment.

More recent research extends this analysis to East Asia and the Pacific, where I find a contrasting pattern of labor market adjustment to industrial automation [15, 16]. Using district-level evidence from five economies, I show that robot adoption increases employment and wages, with employment gains concentrated in salaried and manufacturing jobs [15]. These benefits are unevenly distributed across workers, favoring more educated and medium-skilled workers in employment and higher-skilled workers in wages. Importantly, I find that the effects of automation depend on how local economies participate in global value chains. Employment and wage gains are weaker where exports rely heavily on foreign inputs, but stronger where domestic industries supply inputs to downstream export production abroad. In a complementary study of Vietnam, I show that industrial automation increases productivity, value added, and international trade, suggesting that production expansion offsets the displacement effects [16]. These gains attract skilled workers from other regions, while less educated workers face greater risks of informality and out-migration. I also document positive spillovers to neighboring districts, consistent with production linkages and increased demand for local goods and services. These findings suggest that export opportunities, international production linkages, and labor mobility play an important role in shaping the employment effects of automation in developing economies.

Building on these findings, my most recent research examines how industrial automation affects countries' participation in global value chains and the distribution of its benefits across economies [17]. Combining cross-country industry-level data on robot adoption and international production linkages, I find that automation increases both backward and forward GVC participation, as well as output and employment. However, these gains are concentrated in economies positioned downstream in global networks, while upstream exporters experience limited improvements in integration. I also find that robot adoption widens pre-existing wage differences across countries. These findings suggest that, although automation can facilitate participation in global production, its benefits depend on countries' initial specialization and may reinforce existing disparities rather than promote convergence.

Taken together, these studies show that technological change can promote productivity growth, employment creation, and international integration, while generating substantial distributional tensions. Its consequences depend on workers' skills and occupational mobility, the productive structure of local economies, and countries' positions within global value chains. These differences help explain why automation can create employment opportunities in some settings while displacing workers or reinforcing existing inequalities in others. Understanding these heterogeneous effects is essential for identifying the conditions under which technological progress can contribute to more inclusive economic development.

⚖️ Relative Prices and Income Distribution

The main chapter of my Ph.D. dissertation examines how import prices and product quality adjust following Argentina's 2002 devaluation [18]. I argue that a large depreciation reduces consumers' purchasing power in foreign currency and their willingness to pay for quality, creating incentives for firms to adjust markups and offer lower-quality varieties. Using a structural model of international trade, I find that quality downgrading accounts for most of

the decline in the dollar prices of imported products following the devaluation. These findings show that exchange rate shocks affect not only prices and trade flows, but also the quality composition of consumption.

More recently, I examine how large devaluations affect the cost of living across income groups [19]. Using household expenditure data collected before, during, and after Argentina's 2018 currency crisis, I find that lower-income households experienced substantially higher inflation than richer households. These differences reflect not only the composition of consumption baskets, but also households' ability to adjust their spending patterns. Richer households have greater scope to substitute toward less expensive products and lower-quality varieties, while poorer households are more exposed to price increases in small retail outlets. Complementary evidence also shows that saving capacity and asset ownership increase substantially with household income, suggesting that wealth provides an additional margin of protection against a currency depreciation. These findings highlight how differences in consumption patterns, substitution possibilities, retail access, and financial resources can amplify the regressive consequences of macroeconomic crises.

These studies show that the distributional consequences of macroeconomic shocks extend beyond changes in nominal incomes and employment. By altering relative prices, product quality, and households' purchasing power, large devaluations can generate substantial differences in real welfare across the income distribution. Understanding these adjustments is essential for assessing the full distributional consequences of macroeconomic instability.

Research Plans

Looking ahead, I plan to deepen my research on how technological change interacts with international trade to shape the allocation of resources, employment opportunities, and income distribution. A central focus will be on the effects of automation and emerging technologies beyond the industries in which they are directly adopted. On the one hand, I am interested in how technological change affects the demand for complementary services, including research and development, telecommunications, marketing, accounting, and other specialized business activities. On the other hand, I aim to examine its consequences for natural resource sectors supplying critical inputs, such as copper, lithium, and rare earth minerals. By studying these production linkages, I seek to better understand how the benefits and costs of technological progress spread across industries, workers, and countries.

A complementary part of my research agenda will examine the broader social and political consequences of globalization and technological change. I am particularly interested in how economic shocks influence electoral outcomes, employment stability among middle-class workers, and intergenerational social mobility, with special attention to gender differences. These questions build on my previous work on labor market adjustment and inequality, extending the analysis to how economic transformations shape political preferences, long-term opportunities, and the distribution of economic security across households.

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