There is a very powerful link between trade and economic growth because countries that are closer to each other tend to trade more and have higher GDP per capita.  Countries that are isolated from trade due to policy or geography tend to have much lower GDP per capita. And that is not an accident. The evidence that trading and growth are strongly related to each other is overwhelming. Although trade is very effective at increasing economic growth, we have learned in the last several years that the transmission of trade into labor market outcomes is not quite as clear. Specifically, we need to understand how trade policies affect trade and how trade affects labor market outcomes.

Understanding the link between trade policy and trade outcomes (increasing trade) and its connection with the labor market has motivated many empirical studies. The findings that come out of the academic literature strongly suggest that the relationship is very strong. In most cases trade agreements increase trade and, in general, lowering trade costs by reducing trade barriers and tariffs and quotas and non-tariff barriers tend to increase trade to differing degrees.

Trade is found to promote economic growth through different channels. As trade barriers are lifted, trade agreements among countries signed, new opportunities for companies in tradable sectors expand. At the firm level, there is clear evidence that expanding export markets can increase labor demand, which in turn, increases employment and/or wages in the country. For example, in the last three decades East Asia and Pacific (EAP) experienced an impressive economic growth with rising income and increasing share of manufactures exports. Structural reforms contributed to openness to trade, which created millions of new jobs. Over the same time, poverty fell dramatically. China’s export-orientation in the last 30 years created job opportunities in manufacturing and services, rising households’ incomes though higher wages and increased remittances from migrant workers.[[1]](#footnote-1) Cambodia’s strong commitment to economic openness since the 1990s contributed to sustained economic growth averaging 7 percent per annum in the first decade of the 2000s. In 2015, Cambodia achieved lower-middle income status, coinciding with an impressive reduction of the proportion of people living in poverty from ≈40 percent to 17.8 percent between 1990-2020 (Roche et al 2024). Vietnam is another excellent example of rising trade and its positive effects on poverty reduction. Export-led growth has been critical to Vietnam's transition from one of the poorest countries in the world to a lower-middle income country (Vu et al 2024).

We know, however, that there are also concerns. Trade involves imports and exports. On the import side, for example, there are cases in which trade agreements allow for imports to expand, which can have adverse effects on import competing industries and reduce labor demand. Indeed, there is solid evidence that these import competition effects tend to be very regionally concentrated within the country. This is because, typically, there are industrial clusters of the competing sectors, and therefore labor displacement tends to be very localized. Most of the empirical evidence is in developed countries and slowly this is being applied to developing countries. In our World Bank Global Report on the “Distributional Impacts of Trade (2023)”, we present empirical evidence for countries such as Mexico, Brazil, Bangladesh, South Africa, Sri Lanka that undertook trade liberalization. For example, in the cases of Brazil and South Africa trade liberalization led to diversification of exports and an increase in income but also greater income disparity. Restrictions to mobility either geographically or deterrence to booming industries widen wage gaps. On the other hand, in Bangladesh, relatively low migration barriers meant that workers move to sectors with booming economic opportunities.

Our approach builds upon several recent empirical papers. Pioneering research by Topalova (2010) studies the effects of tariff changes on poverty rates across India’s districts. The author measured the effective changes in tariff rates for districts (zila) by weighting industry-level changes with the number of workers in each district. One of Topalova’s (2010) key contributions was to implement an approach proposed by Bartik (1991). This approach takes advantage of a concentration of production and local labor markets to identify the relationship between globalization and local labor market outcomes. More specifically, Topalova calculates the effective change in import protection for Indian districts after the 1991 trade reform. The variation in the author’s sample comes from differences among districts in their industry and import compositions. The districts with a larger share of import-competing sectors and sectors with larger tariff reductions are exposed more severely to the trade liberalization shocks. Topalova assumes that tariff reductions are exogenous to the districts, since they were planned by the central government through international agreements.

Several studies have used variations of this approach but have reached different conclusions. Topalova (2010) shows that poverty rates increased (or decreased more slowly) in districts that were more exposed to the trade shocks. One concern about the Topolova (2010) study, however, is that the study assumes zero tariffs for nontraded sectors such as services, and includes those sectors in the analysis. In reality, however, nontraded sectors face trade costs that are prohibitive, which is more consistent conceptually with infinite tariffs than with zero tariffs. Hasa, Mitra, and Ural (2007) argue that changing the zero tariffs to prohibitive levels generates results that suggest that trade shocks potentially reduced poverty in India. Although their results contrast with Topalova (2010), they use a similar Bartik (1991)-based instrument in their research.

Using an empirical approach suggested by Hasan, Mitra, and Ramasmawy (2007), Krishna, Mitra, and Sundaram (2010) show that the positive impact of trade liberalization on poverty reduction is less significant in lagging regions in India, Sri Lanka, Bangladesh, Pakistan, and Nepal. In a related study, Hasan et al. (2012) show that trade protection is negatively correlated with state-level unemployment; this correlation is especially strong for states that have high employment in exporting industries.

In Brazil, Menezes-Filho and Muendler (2011) find that low tariffs on intermediate inputs were associated with a lower likelihood of unemployment and higher formal sector employment. Kovak (2013) uses an instrument based on tariff changes, similar to Topalova (2010), to analyze the impact of trade liberalization on Brazil’s labor markets. Unlike the previous research, the study uses a semi-structural approach based on a general theoretical model. Kovak shows the exact specification for the instrument that is consistent with the economic theory. The author argues that the effects of trade shocks on local labor markets are larger when localities are more exposed to trade through higher producer prices, larger employment shares in import-competing sectors, and higher elasticities of labor demand. Dix-Carneiro and Kovak (2017) find that, lower tariffs had the opposite effect, result­ing in higher informality in Brazilian micro-regions that were more exposed to tariff reductions, even 20 years after the trade reform. Similarly, after examining annual vari­ations in tariffs between 1993 and 2001, Sarra and Bombarda (2018) find that regional exposure to Mexican tariff reductions boosted the probability of formal employment in tradable sectors, especially for men. This may have been driven by the fact that export-oriented sectors benefited from the fall in Mexican tariffs as intermediate inputs became cheaper.

There is evidence that export growth has resulted a large and persistent beneficial impact on informality and wages. Hasan et al. (2012) find that trade protection is negatively correlated with state-level unemployment, a correlation that is especially strong for states with high employment in exporting industries. They also find that lower tariffs reduce unemployment rates by about 41 percent in states with flexible labor markets and large export shares. Using a similar methodological framework as ADH, Artuç et al. (2019) find that, more recently, larger exports per worker have resulted in higher wages for those typi­cally working in the formal sector (especially high-skilled workers) and less infor­mality for many marginalized groups in India (1999–2011) and Sri Lanka (2002–13). In districts in India that are more export-intensive, a US$100 export increase per worker resulted in an annual wage increase of Rs 572 per worker. Higher exports also drew workers from the informal sector into the formal sector, especially women and low-skilled workers. For Sri Lanka, a US$100 increase in exports per worker resulted in an average wage increase of SL Rs 975 and an average income increase of SL Rs 206.

Unlike with India, not many studies of Bangladesh have investigated how trade impacts local labor markets. Bangladesh has been successful in accelerating its export growth over the years by mostly concentrating on the ready-made garments sector. In turn, its exports are far less diversified than those of its neighbors and other com­parators. There is, though, a dearth of empirical evidence on how this sector-specific export growth has affected local economic outcomes in the country. A recent study finds that a greater export orientation triggers a short-term increase in both formal and informal employment, as well as a longer-run increase in self-employment (Goutam et al. 2017). Using a reduced form model such as ADH, Goutam et al. 2017 find that trade increases labor force participation and formal employment in Bangladesh. Moreover, there is an even larger impact on labor force participation if the indirect impacts of trade in the form of induced demand through supply chain linkages are included.

For Brazilian workers, empirical evidence shows that the dynamic process of adjust­ment to trade liberalization reforms has been painful, bringing bigger declines in wages and lower employment over time. Between 1991 and 2002, Kovak (2013) finds that microregions in Brazil facing liberalization-induced price declines greater than 10 percent experience 4 percent more declines in wages. Building upon this work, Dix-Carneiro and Kovak (2017) show that microregions facing larger tariff cuts experience prolonged declines in for­mal sector employment and earnings relative to other microregions: the impact of tariff changes on regional earnings 20 years after liberalization is three times the effect after 10 years Workers initially working in tradable sectors are more likely to locally transition to nontradable sectors, but this response is not enough to offset the strong declines in formal employment in tradable sectors. Workers in nontradable sectors in harder-hit areas are similarly affected, indicating large spillovers from tradable to nontradable sectors. Why does this occur? The authors suggest there is a mechanism involving imperfect interregional labor mobility and dynamics in labor demand, driven by slow capital adjustment and agglomeration economies. These unfavorable results are consistent with conclusions by Góes et al. (2019), who deviate from the reduced-form methodology employed by these earlier studies and instead use a general-equilibrium model that aggregates information on production, employment, wages, prices, imports, and exports in 57 economic sectors in Brazil.

Most of the adjustment in Brazil takes place through the informal sector, which acts as a buffer for trade-displaced workers. Dix-Carneiro and Kovak (2017) show that, after Brazil’s trade liberalization in the 1990s, microregions more exposed to foreign competition faced higher unemployment in the medium term relative to the national average. In the long run, however, foreign competition had no effect on unemployment, but there was a significant positive effect on informal employ­ment at the local level. This view of the informal sector serving as a buffer is cor­roborated by Ponczek and Ulyssea (2018), who show that the medium-term effect of liberalization-induced foreign competition on unemployment was larger in microregions where labor market regulations were more strictly enforced, making labor shifts harder. The role of the informal sector as an important margin of labor market adjustment to trade has gained prominence in the literature in last two decades.

What about the effects of an import and export shock on migration across microre­gions and labor reallocation from the formal sector to nonemployment within these regions? Using an instrumental-variable approach, Brummund and Connolly (2019) examine Brazil’s unique trade relationship with China to analyze this question. They find that export exposure reduces the movement of workers from the traded sec­tor to nonemployment and increases the movement of workers from nonemployment to the nontraded sector. These movements are primarily driven by the manufacturing sector. This is in stark contrast to the negative impacts on microregions that are more exposed to imports, which show more reallocation from manufacturing to nonem­ployment, and less movement from the traded sector to the nontraded sector. It thus seems that Brazilian labor markets responded more dynamically to the China shock than they did to the 1990s trade reforms.

Trade liberalization has had mixed effects on poverty in Brazil. While some studies show that trade has contributed to poverty reduction by lowering the cost of goods and creating new job opportunities, others highlight that the benefits are unevenly distributed, often favoring those who are already better off. Consequently, while some individuals have moved out of poverty, others have seen little change or even worsening conditions due to job displacement or wage reduction in vulnerable sectors.

Unlike Brazil, Vietnam’s experience of reallocation after trade reforms has been starkly different. In a study analyzing the labor market impacts of Vietnam’s free trade agreement with the United States, McCaig and Pavcnik (2018) find a significant reallocation of labor from informal household businesses to employers in the formal enterprise sector. The reallocation was larger in industries and regions that experi­enced larger declines in US tariffs on Vietnamese exports and also among younger workers.

The study also suggests that expanded export opportunities increased employment among manufacturing firms by 15 percent. At the same time, the aggregate share of household businesses declined in Vietnam during the early 2000s. Within the context of trade theory, the results indicate that the removal of export market distortions, which harm the profitability of more productive firms, induces a movement of labor away from less productive employers in the small business sector toward the more productive formal enterprise sector. In turn, this leads to sizable gains in aggregate productivity.

As for Indonesia, which has one of the highest mobility costs among developing countries, Agustina (2018) finds negative impacts of increased import competition between 2007 and 2013 on manufacturing employment share, nonmanufacturing employment share, and wages. And Cali, Hidayat, and Hollweg (2019) suggest that workers in more remote regions (especially in eastern Indonesia) face particularly high mobility costs. Not surprisingly, then, workers were unable to adjust to these trade shocks and became unemployed, with the highest impact driven by imports of con­sumption goods.

By contrast, the work of Kis-Katos and Sparrow (2015) and Kis-Katos, Pieters, and Sparrow (2018) shows positive labor market consequences across Indonesia’s regions following the liberalization of trade in intermediate inputs. Specifically, the authors find that poverty decreased more in regions that were more strongly exposed to the liberalization of tariffs for intermediate inputs. Among the potential channels behind this were the formalization of the unskilled labor force and structural reallocation of labor. Job formation and increases in unskilled wages were related to lower import tariffs on intermediate goods and retaining import tariffs on final outputs at their cur­rent levels. This reiterates the point that it is vital to distinguish between the type of imports being affected by tariff reductions when analyzing the impacts of greater import competition on welfare.

Not much is known about the local labor market impacts of trade in sub-Saharan Africa, but a recent study shows that trade impacts operate through the employment channel rather than the income channel. Erten, Leight, and Tregenna (2019) provide strong causal evidence on the effects of a quasi-exogenous reduction in import tariffs on local economies in South Africa between 1994 and 2004, the period of rapid trade liberalization. The results suggest that workers employed in districts facing larger tariff reductions experienced a significant decline in employment driven primarily by a decline in manufacturing sector employment relative to workers in districts facing smaller tariff reductions.

These displaced workers were unable to reallocate into other sectors. Instead, they were more likely to become discouraged, unemployed workers or exit the labor force entirely. Unlike in other countries, they also were not absorbed by the informal econ­omy. When examining differences with respect to education and race, the observed employment effects were consistent for individuals at varying education levels, but among relatively less-educated workers, non-white workers faced a higher likelihood of employment loss. By contrast, there was no evidence of significant differences with respect to gender, age, or location.

This study shows a concentration of negative impacts of trade on employment in certain regions or local labor markets and groups (black and other nonwhite workers), despite the reintegration of homelands into South Africa after 1994. This report adds to this evidence base by further analyzing how persistent these impacts on local labor markets are in the medium to long term—given the sharp tariff reductions observed after the democratic elections—by drawing upon municipal-level data from South Africa for the period 1996–2011.

Overall, substantial methodological advances in the literature have strengthened our ability to understand the complex relationship between trade, labor income, and con­sumption at the subnational level within countries. Trade clearly has brought overall gains to households and is critical to the reduction of poverty, but labor market and consumption gains have been concentrated in some regions and groups.

Our empirical approach is similar to these previous studies because we also employ the Bartik (1991) approach. Our approach is different from previous studies because we focus on exports, while most previous research on trade and local labor markets focuses on negative shocks, such as increasing competition due to growth of China, automation, exchange rates, or tariff reduction. One significant exception to the negative focus of the literature is Hasan et al. (2012). Although they use a measure based on protection (rather than exogenous export shocks), they also discuss the role of export-sector employment shares on trade shocks, with a partial focus on export shocks. From this perspective, this paper is closely related to Hasan et al. (2012) and provides evidence consistent with their findings, despite the use of a different methodology and the focus on different economic outcomes.

1. Chen and Ravallion (2004); Hertel, Zhai, and Wang (2004); and Sicular and Zhao (2004) [↑](#footnote-ref-1)