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WIDER Working Paper 2016/139

Trade, poverty, and social protection in developing countries

Raj M. Desai^{1,2} and Nita Rudra²

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Abstract: How do shifts in trade affect social protections for the poor? Although the fraction of the world’s population considered the ‘extreme’ poor has fallen by over one-half over the past quarter century, many of those lifted above the global poverty line remain vulnerable to shocks that could place them back into poverty. These are the groups that require social protection to stabilize their incomes. Among the shocks to which the absolute poor have been exposed are those created by trade liberalization, particularly in the agricultural sector. The resulting risks, uncertainties, and significant threats to social stability from this type of trade require that the poor are provided with some forms of adjustment assistance. We examine the effects of trade movements on several dimensions of social protection, including spending, coverage, and adequacy over the past two decades. We find that, contrary to previous studies, disaggregating trade may be key to determining which international market variables drive expansion of social protections for the poor. Examining trade in agricultural goods reveals that net food and agricultural exporters provide better social protection than countries that report food deficits. We reason that although both food importers and exporters are vulnerable to shocks, net food exporters generate relatively more revenues to invest in social programs.

Keywords: globalization, social protection, trade

JEL classification: F60, I38, Q17

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1 Introduction

Between 1990 and 2010, the fraction of the world's population living on less than the extreme-poverty benchmark of US\$1.90/day was cut in half.¹ According to recent estimates, however, those still living under incomes up to approximately twice the poverty line (\$4.00/day) are between four and five times as likely to fall back into poverty than those whose incomes are higher (Lopez-Calva and Ortiz-Juarez 2014). By this standard, one-third of the world's population lives above the extreme-poverty line, but with a high degree of vulnerability. Although incomes for the poorest in the developing world have improved, their livelihoods continue to be affected by economic, political, and climactic risks. Without social protection, recent gains in reducing poverty are fragile.

During the same period, developing countries increased their share in manufacturing exports but saw little expansion in agricultural exports, barely maintaining their share of around one-third of global trade (after losing market shares during the 1980s). Such trends in globalization inevitably impact the poor in developing economies. The decades-old debate on the risks and insecurities of globalization has been influenced by greater awareness of the vulnerabilities faced by those at the bottom of the income scale. To what extent are governments in developing countries helping the poor cope with the challenges of international market integration? We have surprisingly little understanding of whether or how governments are reacting to the burdens international market exposure can place on already-vulnerable populations. This group—more so than any other—is most dependent on government support to help them survive and prosper from globalization. The loss of income, jobs, and social stability that inevitably accompanies economic restructuring as well as the financial and economic turmoil that periodically disrupts the world economy place those at or close to the poverty line at high risk for starvation, disease, and even death. Although much of the dramatic progress against poverty was achieved by increases in income, globalization and its accompanying shocks—in particular in larger middle-income countries where large groups of the extreme poor live—have increased demands for expanded social protection.

Yet, the bulk of existing research has focused on how economic openness impacts social welfare programs that benefit the better-off not the poor (see Rudra 2008). This is for two reasons. First, many scholars rely on international economic theories which predict that the poor will win—not lose—from trade liberalization in the long run, and neglect consideration of what happens when they are hit periodically with negative shocks. Second, data on social protection for the absolute poor—including cash and in-kind transfers and subsidies as well as labor-based programs—have been sparse as these are difficult variables to measure. Existing studies have focused instead on social insurance—type benefits that have more readily available data. The problem is that, as these benefits are based on formal employment, the bulk of the labor force in developing countries is often excluded from consideration.

We investigate the political dynamics of social policy, arguing that governments expand protection for the extreme poor in response to the potential instability associated with certain types of trade expansion. Trade in agriculture—foodstuffs, in particular—is likely to be associated with the greatest risk for this group. In the short run at least, the process of agricultural liberalization can displace large segments of the rural poor, such as smallholders, that

¹ This global extreme-poverty line was raised by the World Bank from US\$1.25/day (2005 PPP) to US\$1.90/day (2011 PPP) in October 2015.

struggle to compete with the rising productivity, technology, and quality demands of food importers. They are dependent on government assistance to help them integrate with global agricultural markets.

At the same time, higher levels of food trade openness expose *both* the urban and the landless rural poor (who tend to be net food consumers) to higher world food price and volatility. The adverse impacts on the urban poor are a sharp change from longstanding developing country policies that have controlled food prices for this group. Food trade liberalization, then, provides governments with incentives to increase social protection that compensate the extreme poor for these new risks and help them ride out negative shocks, maintaining social and political stability in the process. In contrast, as manufacturing exports are relatively less volatile and associated with sharper and more consistent wage growth and employment for both the rural and the urban poor, social protection may be less critical for political stability.

We examine the depth and coverage of social protection for the poor. Using cross-national, time series data covering 150 developing countries between 1960 and 2010, we find support for our argument that food trade results in increased social protection coverage for the extreme poor. Two caveats emerge, however. First, social coverage expansion of the extreme poor occurs only if food exports outpace imports, suggesting that this surplus matters for generating revenues necessary to invest in such programs. Second, the adequacy of these benefits is not (yet) being followed in kind. The total transferred amount to the poor as a fraction of their income is not increasing with agricultural trade liberalization, despite expanding coverage. In contrast, developing countries experiencing increased trade in manufacturing do not witness improved protections of any kind directed toward the extreme poor.

These findings have broad implications for scholars and policymakers seeking to understand the political-economic conditions most favorable to expanding the scope and coverage of social protections. Our analysis suggests that as the food liberalization process in lower- and middle-income countries exposes the urban and rural poor to higher risk and uncertainties, governments may be increasing social protections for these groups as a consequence. Governments transitioning away from “urban bias” and discriminating against agricultural sectors would do well to expand food exports alongside pro-poor social protections. These findings counter the common wisdom that trade in manufacturing is most likely to impact the expansion of social protections.

2 International market exposure and social protection

For over three decades, scholars in international political economy have been analyzing how international market exposure impacts the level of spending on social protections (e.g., Cameron 1978; Ruggie 1982; Rodrik 1998; Garrett 2001; Kaufman and Segura-Ubiergo 2001; Mosley 2003; Wibbels and Arce 2003; Scheve and Slaughter 2004; Hays et al. 2005; Wibbels 2006; Nooruddin and Simmons 2009; Rudra 2002, 2008). Their focus has been on how international market expansion creates “losers” and increases their sense of risk and economic insecurity.² Governments respond with higher social protections in order to maintain social stability and political support and prevent a backlash against globalization.

² This logic is rooted in embedded liberalism which predicts that expanding markets increase public social spending because perceptions of increased economic instability and insecurity prompt demands for redistribution (Polanyi 1944; Ruggie 1982).

To elaborate, since the 1990s, most low- and middle-income countries have opened their borders to international flows of goods and capital, but in the process they have also increased their exposure to international shocks. As protectionist barriers were lowered or removed, local and foreign firms began lobbying for lower overall tax burdens and, particularly, their contributions to social security schemes (Desbordes and Vauday 2007; Huber et al. 2008). It has become commonplace for policymakers to publicly underscore the importance of “competitiveness” and how and why labor reforms and welfare retrenchment are increasingly unavoidable. Singapore’s Deputy Prime Minister Trade Minister Lee Hsien Loong’s comments well reflect this general sentiment:

We must enhance the competitiveness of our economy . . . We undertook a fundamental review of the Central Provident Fund (CPF) Scheme, which is our social security and pension fund scheme . . . We are reducing the coverage for high-income Singaporeans, who should be able to plan and provide for their own retirement . . . These measures will make our labor market more flexible, and contribute to our economy’s overall resilience and competitiveness. (*The Business Times*, 2002: 8)

On the basis of these types of pressures from globalization, scholars argue that openness encourages business groups and investors—newly exposed to international competition—to push governments to lower taxes and expenditures and limits the bargaining ability of workers to resist these pressures (Kaufman and Segura-Ubiergo 2001; Garrett 2001; Mosley 2003; Rudra 2002, 2008; Nooruddin and Simmons 2009).

In contrast, a smaller group of scholars find that developing countries exposed to economic and social dislocations from trade or financial liberalization are more likely to provide transfers to key groups to ensure stability and prevent backlash against globalization (e.g., Rodrik 1997, 1999; Avelino et al. 2005; Nooruddin and Rudra 2014). This hypothesis seems to fit the history of Latin America particularly well, where a series of transfer-based programs were initiated at the dawn of liberalization consisting of subsidies, cash transfers to the poor, and the spread of public employment programs (Fiszbein et al. 2009).

However, little research to date provides any theoretical or empirical insights into the conditions under which developing countries might systematically expand their welfare protections for underprivileged groups concomitant with global market expansion. This is for two reasons. First, this research agenda has continued the tradition of focusing on large and well-developed social insurance programs that are assumed to cover the large majority of the working population, which is true only in industrialized countries (and select Latin American countries). In most developing countries, these programs exclude the majority working in the informal sector.³ Second, the assumed drivers of social protection in LDCs are groups associated with the manufacturing sector—organized labor and/or business groups demanding lower labor costs, not the poor (for examples, see Kaufman and Segura-Ubiergo 2001; Rudra 2002; Wibbels 2006; Nooruddin and Simmons 2009). This is because most scholars assume that low-skill abundant LDCs are earning income related to trade in labor-intensive manufacturing goods. Certainly,

³ In developing countries, modern welfare protections such as social security schemes and labor market were first established in the early 20th century, for privileged groups (military, police, judiciary, civil servants) and later extended to crucial white collar (teachers, bank employees) and blue collar (miners, railroad workers, port workers) categories (Huber et al. 2008). In most developing countries, these programs cover a small percentage of the working population.

most developing countries have prioritized industrialization,⁴ and, indeed, LDCs that export manufactured goods have experienced higher total factor productivity growth (Savvides and Zachariadis 2005).

Yet, a common feature of these studies is the focus on *total* trade [as a percentage of gross domestic product (GDP)] as a key measure of openness, and its impact on social protections. This is problematic because different types of trade specialization are likely to impact citizens of developing countries differently, creating different groups of losers, who may or may not benefit from pro-poor social protections. In manufacturing, for example, we would expect import competition to displace less-productive and once-protected firms and their employees. The losers are not the extreme poor who were never employed by these firms, and so pro-poor social assistance is less critical.

On the contrary, manufacturing trade may help marginalized groups as the rate of job expansion has increased in that sector (see Lavopa and Szirmai 2012). Employment growth occurs in the formal and informal sectors, which hosts the urban poor and rural workers that have migrated to urban centers. The United Nations (2013) estimates that nearly half of recent employment growth in manufacturing in developing countries was informal; that is, small- and medium-sized enterprises, self-employed, and workers not covered by labor laws.

The globalization-redistribution research thus overlooks the consideration that many developing countries have also been prioritizing agricultural trade liberalization in recent decades, and its effects on the poor. Commodity-dependent trade faces far more price volatility than manufacturing trade (Cashin et al. 2002; Koren and Tenreyro 2007; Elhiraika 2008). Consequently, rural and poor residents whose earnings depend on food prices and agriculture are more likely to face greater risks associated with increasing agricultural trade. In consequence, the poor are likely to be losers in the presence of high food and agricultural trade volatility and in most need of social protections.

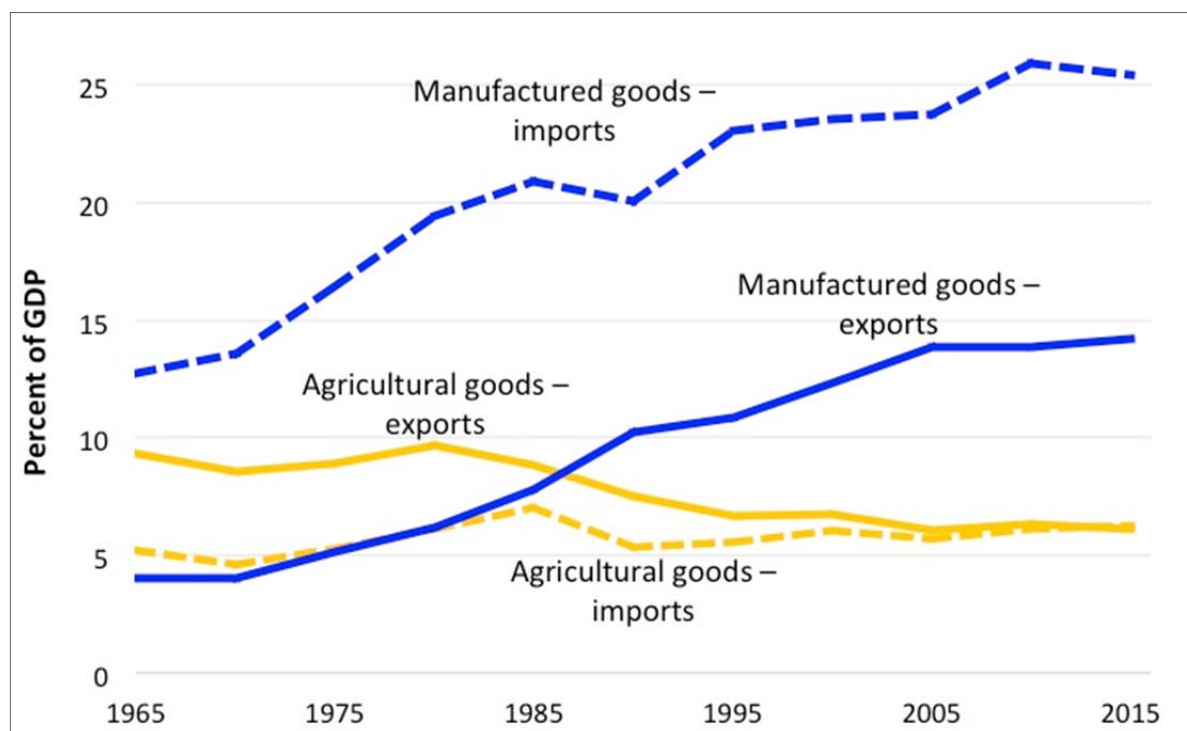
To summarize, some evidence suggests that developing countries have retrenched their welfare expenditures in an effort to cope with the demands of market expansion (low taxes, export competitiveness), but other evidence shows expansions of social protections. Little research to date provides any insights into the conditions under which developing countries might systematically expand their welfare protections for underprivileged groups concomitant with global market expansion.

2.1 Food and agriculture trade

Until the late 1970s and early 1980s, food exports exceeded food imports for most developing countries (Figure 1). After liberalization, food and agricultural exports from developing countries fell, driven primarily by deteriorating terms of trade relative to imported manufactured goods. Often, the anticipated benefits from food trade liberalization did not materialize because of the implementation of limited or partial reforms, the absence of incentives for exporters, high transaction costs to trade (including transport and logistics costs), farming practices that constrained productivity gains, limited access to inputs, credit and new technologies, and poor infrastructure.

⁴ Developing economies have long focused on promoting industrialization to avoid the secular decline in the terms of trade for primary commodities (i.e., the Prebisch–Singer hypothesis).

Figure 1: Trade in the developing world



Notes: Manufactured goods comprise commodities in Standard International Trade Classification (SITC, revision 3) sections 5 (chemicals), 6 (basic manufactures), 7 (machinery and transport equipment), and 8 (miscellaneous manufactured goods), excluding division 68 (non-ferrous metals). Agricultural goods refer to commodities in sections 0 (food and live animals), 1 (beverages and tobacco), 4 (animal and vegetable oils and fats), and division 22 (oil seeds, oil nuts, and oil kernels). Data are 5-year averages for 1960–2015.

Source: Authors' illustrations based on COMTRADE data.

Nevertheless, the liberalization of agricultural trade did expose consumers and producers in commodity-dependent countries to greater price volatility. Richer economies have contributed to commodity price volatility by reacting to developing-country agricultural liberalization with increased protectionism and producer subsidies (World Bank 2005). Consequent overproduction requires greater domestic adjustments, whereas the loss of export markets penalizes food exporters. The increasing flow of speculative capital from financial investors to agricultural commodity markets has also contributed to instability (Robles et al. 2009). Net food importers are particularly disadvantaged by higher food prices as biofuel cultivations—fueled by greater agricultural foreign investments—are increasingly displacing food crops. It is thus not surprising that there have been large increases in long-run food price volatility over time, reaching its highest level in almost 30 years in 2009 (Roache 2010).

Higher risks and uncertainties for the poor accompany increases in food exports and imports alike, but these tend to impact different groups. Beginning in the 1950s, many developing country governments embraced economic policies that systematically discriminated against agriculture in favor of the urban sector. A key objective was to appease politically restive urban dwellers by providing low-cost food through the disproportionate taxation of the rural sector (Lipton 1977). State agencies used several tools to ensure the price paid to farmers was lower than the world price—high rural export taxes, overvalued exchange rates, and price controls. The impact on the poor varied, however; the incomes of rural producers were the most negatively affected, whereas the landless rural and urban poor—who spend 50–70 percent of their income on food—gained from low prices.

The political incentives behind the urban bias were also strong. Appeasing the urban poor in industrialized sectors considered critical because of their relatively greater political power. As Bates (1981) famously argued, collective action problems in the rural sector were intensified because of the combinations of its large size, dispersion, and communication challenges. However, urban dwellers, both rich and poor, were more concentrated geographically, and producers had a larger share of the market that increased their incentive to mobilize. Additionally, governments depended on their cooperation to support the industrialization process.

Starting in the early 1980s, a series economic shocks prompted advances toward agricultural trade liberalization and initiated a reversal of urban bias. The 1990s Uruguay Round resulted in the first major lowering of tariffs in agriculture, as average agricultural tariffs declined from 30 percent to 18 percent. Developing nations began adopting several liberalizing measures aimed at eliminating import restrictions, devalued exchange rates, multiple exchange rate systems that penalized agriculture, and almost all export taxes (World Bank 2008).

As a consequence, developing countries have substantially reduced distortions to agricultural incentives over the past three decades, particularly relative to richer economies (Anderson 2009). On average between 1980–84 and 2000–04, agriculture-based countries further lowered protection of agricultural imports, from a 14 percent tariff equivalent to 10 percent, alongside a significant reduction in taxation of exports from 46 percent to 19 percent (World Bank 2008).

2.2 Agriculture and social protection

Three-quarters of the world's poor live in rural areas, and the vast majority of the rural poor are agricultural cultivators or casual laborers (Cheong et al. 2013). Moreover, almost two-thirds of agricultural workers around the world are in the informal sector (Bacchetta et al. 2009). Most rural households in poor countries are dependent on agricultural activities, often subsistence farming. Wages are typically the second-largest income source, with some of the wage income originating in agriculture. Agricultural trade is therefore likely to have a significant impact on poverty.

Within the food and agricultural tradable sector, then, there are compelling reasons why both net food importers and net food exporters might seek to expand social protection. On the one hand, net food importers may expand social protection if governments are principally concerned about vulnerabilities to food price shocks and about protecting net food consumers. Empirical analyses confirm that higher food prices and volatility incite social unrest (Berazneva and Lee 2013; Bellemare 2015). Although in order to safeguard supplies for domestic market and keep prices down, food exporters can restrict exports in the face of a spike in food prices, transmission of world food price to domestic food price still occurs (Mueller and Mueller 2014). However, Baltzer's (2014) analysis suggests that only a select few large economies such as India and China have been able to shield their domestic economy from high world food prices. Otherwise, even net food exporters such as Brazil and South Africa experienced an increase in food prices that disproportionately impacted the poor (Mueller and Mueller 2014).

If so, governments of net food importers have incentives to provide pro-poor policies that help mitigate the impacts of food price shocks and maintain domestic political stability in the process. The extreme poor in Brazil and South Africa were relatively unaffected by food price volatility in the 2000–10 period because of their substantive social welfare programs that protected this vulnerable population (Mueller and Mueller 2014). These programs play a critical role in

detering social unrest and political instability under these circumstances (Berazneva and Lee 2013; Bellemare 2015).

On the other hand, if the government is concerned with absorbing price shocks for the urban and rural poor, and/or if they are committed to assisting integration of small producers into global agricultural markets (e.g., technology upgrading), then one would expect net food exporters to be better-positioned to expand social protection.

3 Data, methods, and results

Our chief aim is to examine how trade balances affect the breadth and depth of social protection. We use the World Bank’s Atlas of Social Protection—Indicators of Resilience and Equity (ASPIRE) database for our indicators of social protection, covering a sporadic number of years between 2004 and 2011. We rely on a simple measure of total expenditure on all forms of social protection, as well as measures of “coverage” and “adequacy” of various components of social protection. Coverage is simply the percentage of population participating in social protection and labor programs (including direct and indirect beneficiaries) by program type. Adequacy of benefits is the total transfer amount received by all beneficiaries as a share of the total income or consumption of those beneficiaries.

Programs are divided into social assistance, social insurance, and labor market programs. Social assistance are programs targeted toward the poor, such as all cash transfers, in-kind provisions, subsidies, fee waivers, (non-contributory) pensions, as well as public works and workfare. In contrast, social insurance refers to contributory pensions such as old age, survivors’, and disability pensions, along with employment-related benefits such as paid leaves for sickness, maternity/paternity, as well as health and injuries benefits. Finally, labor market programs cover both active and passive labor-market policy measures focused on unemployment benefits (whether contributory or non-contributory), but also entrepreneurship support, training, employment, and self-employment incentives. The latter two categories are more likely to cover formal sector labor.

3.2 Estimation

Our benchmark specifications take a simple linear-log form with finite distributed lags:

$$S_{i,t} = \beta_0 + \beta_1 \text{Ln}(X)_{i,t-1} + \beta_2 \text{Ln}(M)_{i,t-1} + \beta_3 \text{Ln}(Y)_{i,t} + \beta_4 \text{Ln}(Y)_{i,t-1} \\ + \beta_5 \text{Ln}(P)_{i,t} + \beta_6 \text{Ln}(P)_{i,t-1} + \beta_7 \mathbf{R}_{i,t-1} + \mu_t + \varepsilon_{i,t}$$

where S is any measure of social protection, X and M are total exports and imports with the rest of the world, respectively, in constant dollars, Y is total GDP in constant dollars, and P is total population. In subsequent estimations, we separate out exports and imports of agricultural and manufactured goods. Vector \mathbf{R} contains as controls: household consumption in constant dollars and a measure of change in the current account, $\Delta C = C_{i,t} - C_{i,t-1}$, where C is an indicator coded 1 if the current account is “open” and 0 otherwise. We rely on the Quinn et al. (2011) measure of openness of the current account. Their measure is an aggregate of *de jure* and *de facto* indices of the current account, and is generally considered superior to exclusive measures based on policy or outcomes such as trade openness. Here, μ is a country-invariant time-fixed effect, and ε is a random, independent, and identically distributed disturbance. All variables are indexed by

country i and time period t ; we use 5-year averages, thus each period represents a 5-year timespan. Note that we take the natural logs of X , M , Y , P , and household consumption, rather than relying on percentages of GDP or per-capita terms. This permits us to examine, simultaneously, several combinations of GDP and population without creating unnecessary problems of collinearity between regressors.

In our specification, then, $(\beta_3 - \beta_5)$ can be interpreted as the effect of GDP per capita, whereas $(\beta_3 - \beta_4)$ and $(\beta_5 - \beta_6)$, respectively, are effects of changes in GDP and population growth, and $(\beta_3 - \beta_4) - (\beta_5 - \beta_6)$ is the effect of the change in per-capita income. Where possible, we also use the natural log of S (when estimating total spending on social protection in constant dollars, or total coverage under social protection programs in number of people), thus allowing the estimated parameters to be interpretable as elasticities. Our sample has 116 country-year observations covering low- and middle-income countries. Because of the scarcity of the social protection time series, most social protection indicators encompass, at maximum, two 5-year periods. Summary statistics of all variables are in Table 1.

Table 1: Trade and social protection—regression results

	(1) Government expenditure	(2) Social spending	(3) Coverage	(4) Coverage (bottom quintile)	(5) Coverage (poorest)	(6) Adequacy	(7) Adequacy (quintile)	(8) Adequacy (poorest)
$\ln(X)_{t-1}$	-0.335*** (0.000)	-0.974*** (0.000)	-0.255 (0.321)	-0.527* (0.057)	-0.716** (0.020)	0.197 (0.235)	0.614 (0.139)	0.335 (0.143)
$\ln(M)_{t-1}$	0.326*** (0.000)	1.139*** (0.001)	0.628* (0.051)	0.927** (0.019)	1.048** (0.019)	0.00388 (0.985)	-0.444 (0.304)	-0.192 (0.584)
$\ln(Y)_t$	1.059*** (0.000)	2.694** (0.012)	0.731 (0.436)	0.954 (0.305)	1.251 (0.255)	-0.931 (0.219)	-1.718 (0.393)	0.315 (0.775)
$\ln(Y)_{t-1}$	0.348** (0.010)	-1.595 (0.121)	-0.552 (0.544)	-0.552 (0.579)	-0.321 (0.774)	0.698 (0.359)	1.569 (0.356)	0.197 (0.871)
$\ln(P)_t$	-1.552*** (0.000)	-6.869* (0.051)	-5.201** (0.016)	-9.336*** (0.001)	-13.77*** (0.001)	-6.819*** (0.008)	-4.312 (0.372)	-8.493** (0.040)
$\ln(P)_{t-1}$	1.131*** (0.000)	6.627** (0.047)	4.845** (0.018)	8.745*** (0.001)	12.74*** (0.001)	6.915*** (0.005)	4.329 (0.334)	7.951** (0.049)
$\ln(Consumption)_t$	-0.362*** (0.000)	-0.0197 (0.969)	-0.229 (0.671)	-0.558 (0.407)	-0.989 (0.227)	0.0150 (0.974)	0.0969 (0.912)	-0.386 (0.508)
ΔC	0.0167 (0.627)	-0.0901 (0.735)	0.745*** (0.001)	0.728*** (0.001)	0.969*** (0.002)	-0.154 (0.445)	0.0945 (0.805)	0.228 (0.484)
R^2	0.975	0.875	0.499	0.498	0.460	0.370	0.249	0.483
N	899	91	119	123	93	108	111	83

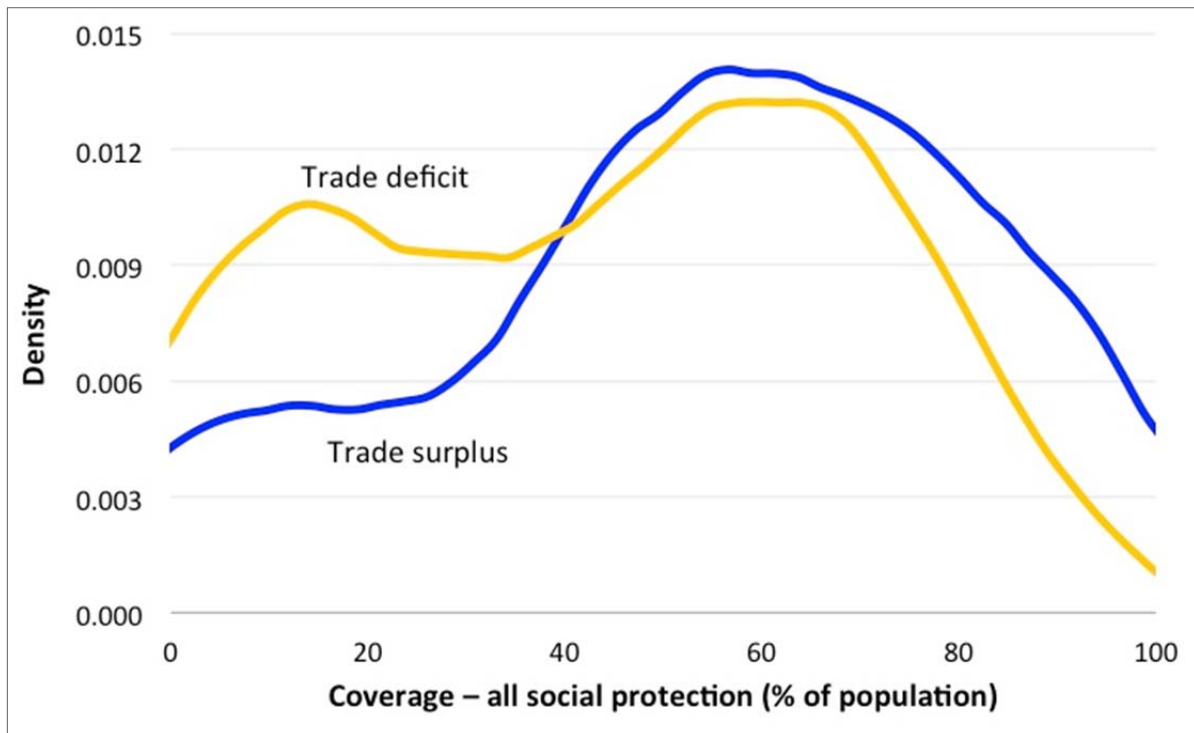
Notes: OLS results with robust standard errors in parentheses. Expenditure, spending, and adequacy are in constant dollar (natural logs). Coverage members are in total persons covered (natural logs). X (total exports), M (total imports), Y (income) and $Consumption$ (household consumption) are in constant dollars (natural logs), and P (total population) is in natural logs. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Source: Authors' compilation based on data sources cited in the text.

3.3 Descriptive analysis

Figure 2 shows the smoothed distributions for total coverage of all categories of social protection for countries with surpluses or deficits in their trade accounts. The mean level of coverage for all country periods where the trade account was in surplus is the same as for those in which a deficit is posted. Approximately 60 percent of the population of the countries examined here have been covered by some social protection program in developing countries, regardless of whether these are in surplus or deficit; there is little difference between net importers and net exporters overall.

Figure 2: Distribution of social protection coverage in overall trade surplus/deficit countries



Notes: Distributions are estimated using density functions with Epanechnikov kernels and Silverman bandwidths. Periods are five-year means for 2000–14.

Source: Authors' illustrations based on data sources cited in the text.

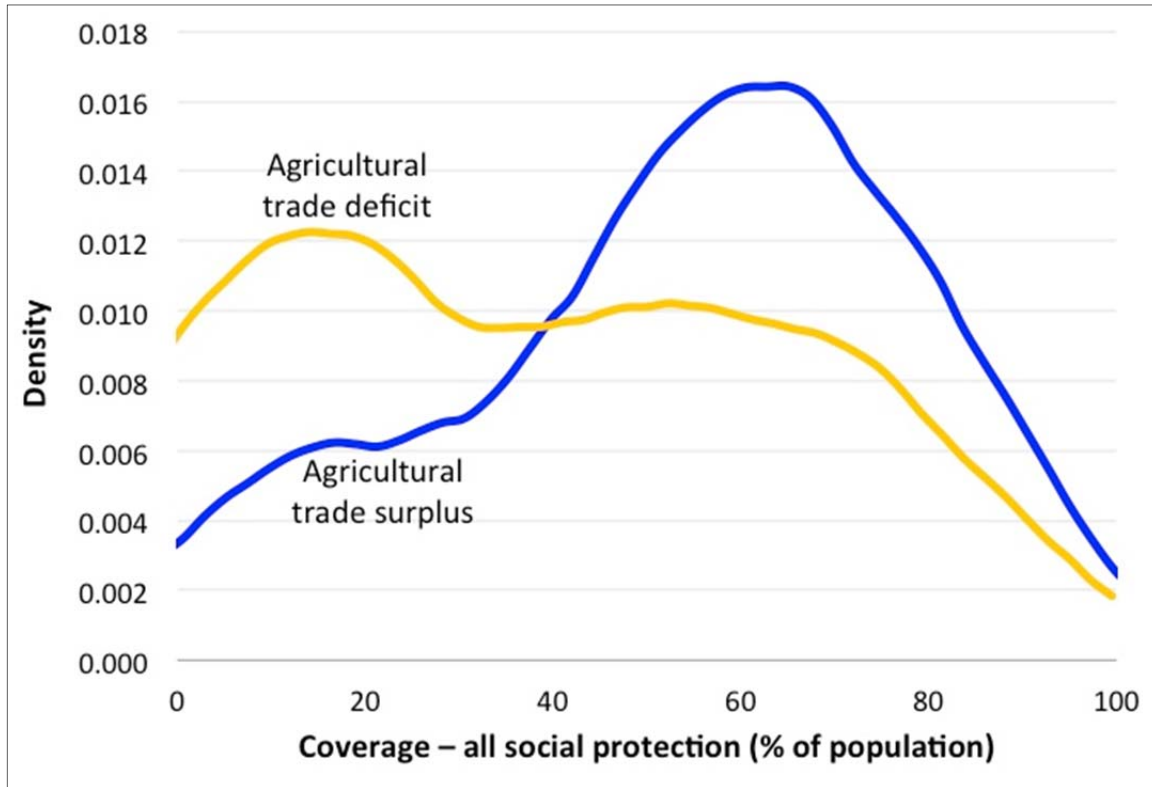
We are principally interested in the special effects of agricultural versus non-agricultural sector trade on social protection and, in particular, whether a food-driven trade surplus raises or lowers the level of social protection. If net importers and/or net food exporters protect their citizens more, we would expect that the main objectives of social protection would be to lessen food price shocks and help small producers adjust to the global economy. If, on the other hand, we see non-food exporters protecting their citizens more, we would conclude that the fact that citizens obtain a larger portion of their income from manufacturing or service activities may be driving social protection.

These relationships are depicted in Figures 3a–3d, which separates distributions of social protection coverage based on agricultural and manufacturing trade balances. Here, we separate social coverage for the whole population (Figures 3a and 3b) and social coverage for the extreme poor (i.e., those earning less than US\$1.25/day in PPP-adjusted dollars; Figures 3c and 3d). In the case of agriculture, mean levels of social protection for everyone and for the poorest shifts rightward—dramatically, in the case of the poorest—for net exporting nations are compared

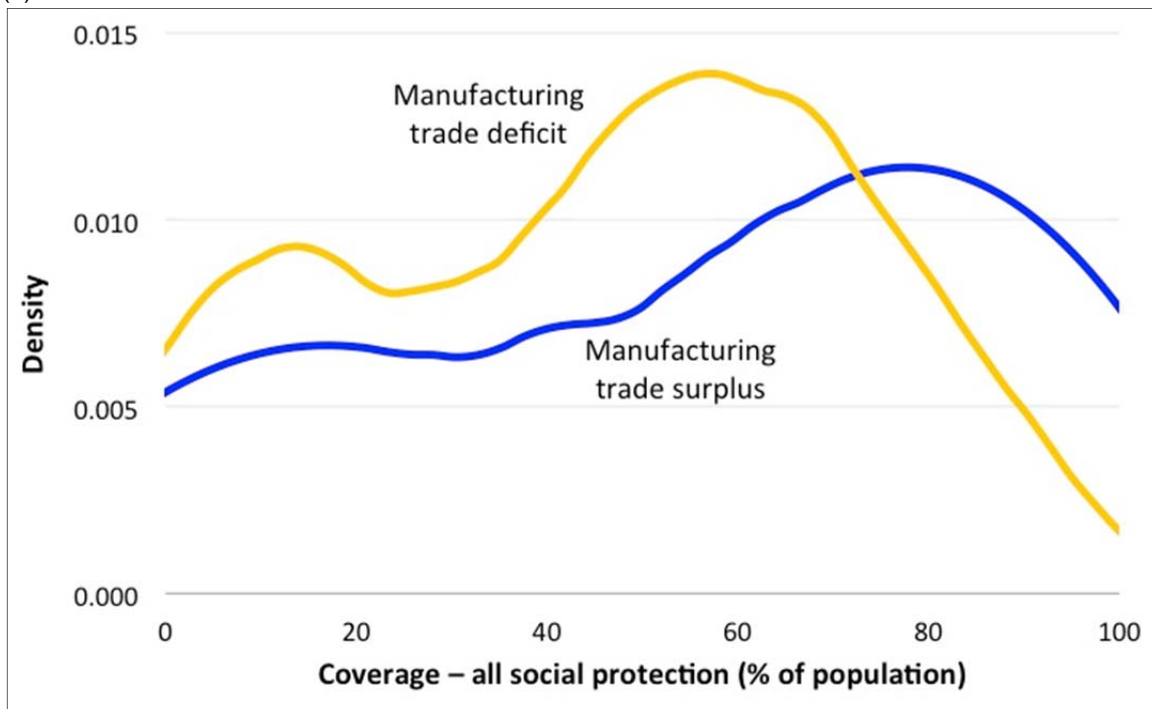
with net importers. A slight shift is noticeable in terms of coverage for the whole population, but there is no difference in mean coverage for the poorest between net importers and exporters of manufactured goods.

Figure 3: Distribution of social protection in agriculture and manufacturing trade surplus/deficit countries for the whole population (a, b) and the extreme poor (c, d)

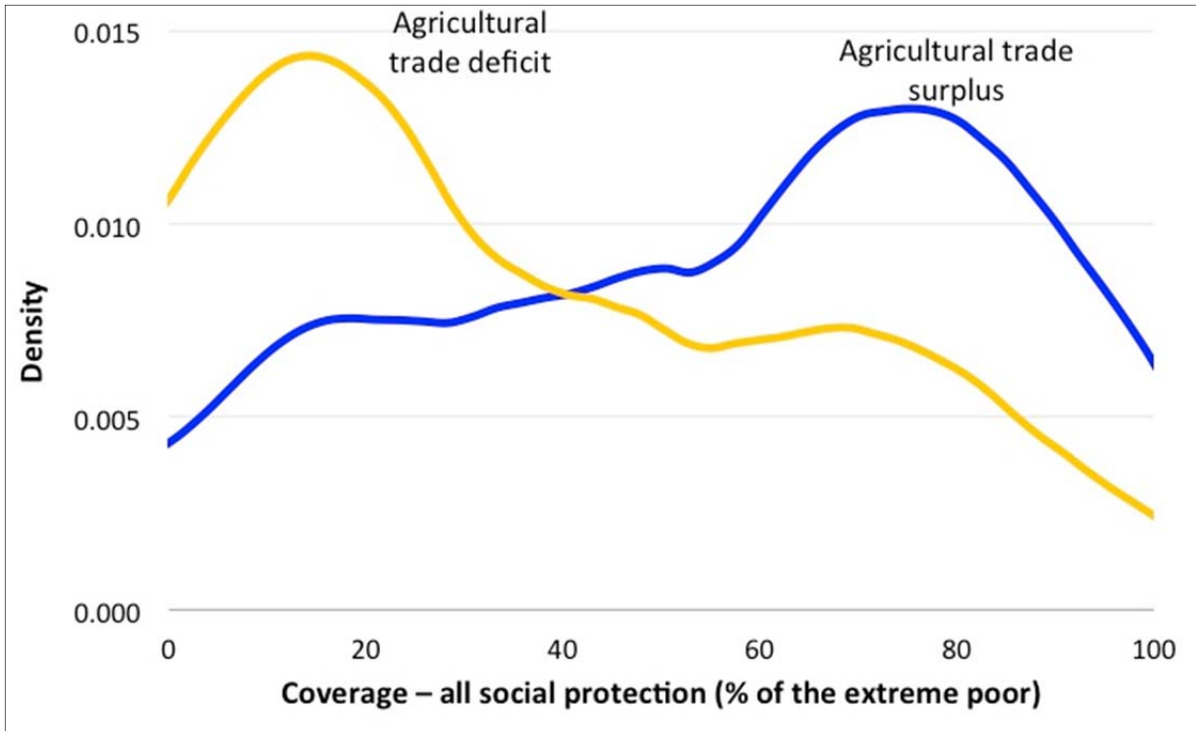
(a)



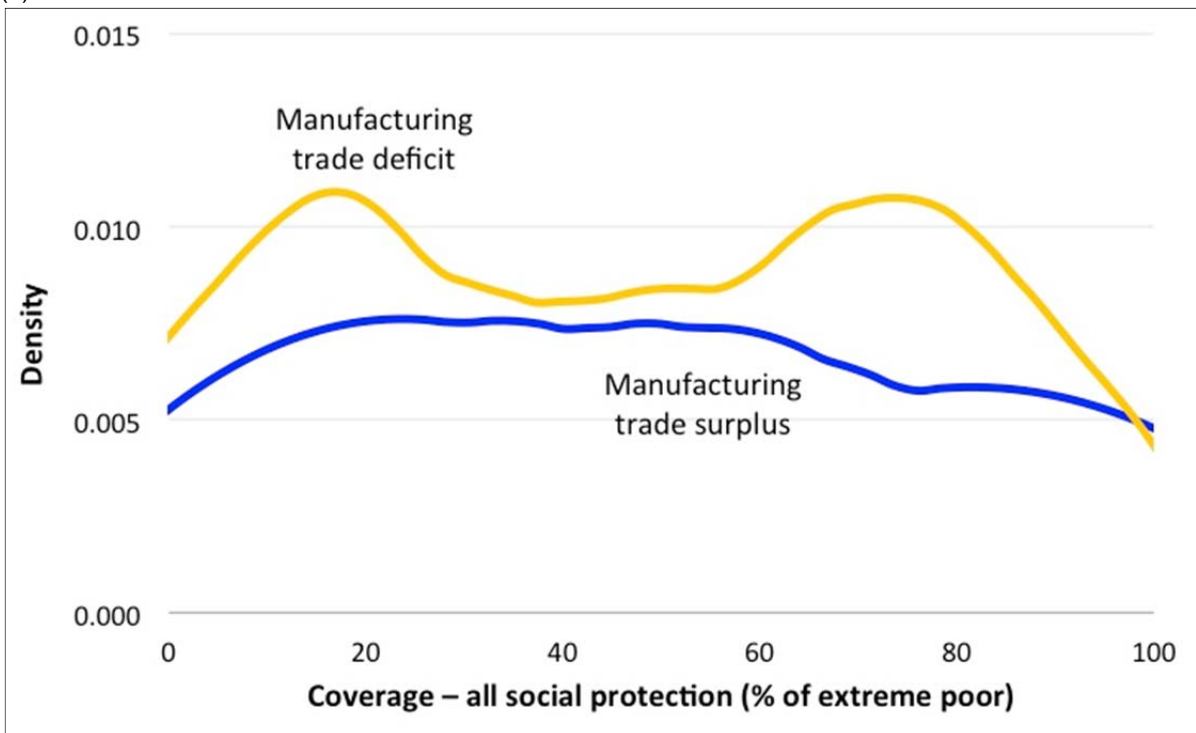
(b)



(c)



(d)



Notes: Distributions are estimated using density functions with Epanechnikov kernels and Silverman smoothing half-widths as bandwidths. Periods are five-year means for 2000–14. “Extreme poor” are those earning less than US\$1.90/day (2011 PPP). Agriculture and manufacturing trade are defined according to SITC used in Figure 1.

Source: Authors’ illustrations based on data sources cited in the text.

Together, Figures 3a–3d show three stylized facts. First, agricultural trade surpluses are associated with a rightward shift in the mean coverage ratio by, on average, between 10 and 15 percentage points. Second, the non-agricultural sector, in contrast, is associated with far less of a change in mean, although the distribution of coverage ratios is more single-peaked for surplus

countries. Third, these changes are constant in terms of the population as a whole and for the poorest quintile, suggesting that the effects of agricultural surpluses on the expansion of social protection are not restricted to the non-poor themselves.

3.4 Regression results

Benchmark results for our basic specification are presented in Table 1. Given our specification, one must examine coefficients β_1 and β_2 in order to identify the effects of trade balances on social protection. In column (1) we estimate the effect of trade on final government expenditure. Interestingly, exports serve to reduce spending on the poor whereas imports increase them. This same effect is found when we examine only social spending in column (2), despite the reduction in the number of observations. Although the effect on government expenditure of an extra dollar of imports is actually smaller than that of an extra dollar of exports in column (1), the effect of imports on social spending is larger than the effect of exports, suggesting that countries running trade deficits tend to have more social protection than those with surpluses. These same effects are present, though weaker, with social coverage. Moreover, the “importer effect” on social coverage is consistent whether the outcome is social protection for the whole population, for the bottom quintile, or for the extreme poor. This finding is consistent with globalization skeptics who argue that net exporters reduce taxes and spending in order to attract capital and promote exports. This may be political strategy directed toward appeasing politically organized exporting industries. At the same time, governments appear to compensate import-competing industries in net importing countries.

However, countries that run trade deficits, while they may show more breadth of social coverage, do not exhibit any greater depth in social protection. Columns (6)–(8) examine the adequacy of social protection, or the total transfer amount received by all beneficiaries (across the population, in the bottom quintile, or among the extreme poor) as a share of the total welfare of beneficiaries in that cohort.

The results in Table 1 suggest that trade deficits may spur governments to enhance their social protection across groups, including vulnerable segments of the population. Estimating the effects of total trade obscures how liberalization of different sectors can generate different demands for social protection differently. Disaggregating trade by sector allows us to get a more precise assessment of globalization variables impacting social protections. Turning to agricultural versus non-agricultural trade, we replace the overall export and import terms in our basic specification with agriculture and manufacturing sector-specific trade terms. These results—given in Table 2—show that agricultural trade is characterized by strong countervailing effects to the overall trade account when it comes to social protection.

Table 2: Agricultural and manufacturing trade and social protection—regression results

	(1) Government expenditure	(2) Social spending	(3) Coverage	(4) Coverage (bottom quintile)	(5) Coverage (poorest)	(6) Adequacy	(7) Adequacy (quintile)	(8) Adequacy (poorest)
$\text{Ln}(\text{Food/Agro } X)_{t-1}$	0.047*** (0.008)	-0.146 (0.276)	0.247** (0.050)	0.281* (0.099)	0.339* (0.065)	0.145 (0.101)	0.142 (0.316)	0.056 (0.708)
$\text{Ln}(\text{Food/Agro } M)_{t-1}$	0.008 (0.790)	-0.334 (0.346)	0.142 (0.467)	0.001 (0.995)	-0.039 (0.907)	0.001 (0.996)	-0.238 (0.412)	-0.476 (0.162)
$\text{Ln}(\text{Manufactures } X)_{t-1}$	-0.008 (0.704)	0.0389 (0.733)	-0.166** (0.023)	-0.112* (0.070)	-0.197** (0.018)	-0.067 (0.276)	-0.0232 (0.840)	-0.116 (0.195)
$\text{Ln}(\text{Manufactures } M)_{t-1}$	-0.100* (0.055)	0.0951 (0.827)	0.242 (0.359)	0.160 (0.673)	0.312 (0.490)	-0.251 (0.241)	-0.0672 (0.838)	0.314 (0.419)
$\text{Ln}(Y)_t$	0.966*** (0.000)	0.911 (0.385)	0.701 (0.455)	0.651 (0.471)	1.086 (0.300)	-0.157 (0.810)	0.188 (0.854)	1.052 (0.305)
$\text{Ln}(Y)_{t-1}$	0.168 (0.189)	-0.342 (0.764)	-0.459 (0.587)	-0.261 (0.751)	-0.170 (0.863)	0.413 (0.515)	-0.352 (0.735)	-0.491 (0.655)
$\text{Ln}(P)_t$	-1.233*** (0.000)	-4.516 (0.168)	-6.632** (0.015)	-10.170*** (0.001)	-18.480*** (0.000)	-5.896** (0.033)	-5.714 (0.134)	-8.452* (0.096)
$\text{Ln}(P)_{t-1}$	1.096*** (0.000)	5.096 (0.116)	6.129** (0.021)	9.580*** (0.002)	17.35*** (0.000)	5.846** (0.031)	6.033* (0.095)	8.114* (0.092)
$\text{Ln}(\text{Consumption})_t$	-0.074 (0.258)	0.669* (0.094)	-0.325 (0.594)	-0.528 (0.429)	-1.268 (0.114)	0.115 (0.778)	0.565 (0.390)	0.096 (0.901)
ΔC	0.0135 (0.703)	-0.008 (0.976)	0.677*** (0.009)	0.704*** (0.008)	0.945*** (0.005)	-0.142 (0.508)	0.251 (0.442)	0.304 (0.386)
R^2	0.977	0.865	0.511	0.460	0.476	0.396	0.316	0.491
N	805	88	118	119	91	107	109	82

Notes: OLS results with robust standard errors in parentheses. Expenditure, spending, and adequacy are in constant dollar (natural logs). Coverage members are in total persons covered (natural logs). X (agro/manufacturing exports), M (agro/manufacturing imports), Y (income) and $Consumption$ (household consumption) are in constant dollars (natural logs), and P (total population) is in natural logs. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Source: Authors' compilation based on data sources cited in the text.

Column (1) in Table 2 shows, for example, that an extra dollar in food or agricultural exports increases government spending. In contrast, an extra dollar worth of manufactured goods imports has a negative effect on total government spending. Although we do not see effects on social spending, the same pattern prevails when examining beneficiary coverage of social protection. For the whole population, the bottom quintile, and the poorest, food exporters have greater coverage and manufactured goods exporters have lower coverage. Again, these results suggest that any effect on social coverage is “shallow,” as the adequacy of those benefits does not seem to be increased. Future research should explore whether manufacturing goods exporters have lower demands for compensation.

We also control for the effects of openness of the current account. Our results show that developing countries that have opened their current accounts have larger fractions of their population covered by some social protection scheme compared with those that have not. The effects are symmetric regardless of whether overall trade or trade in agricultural and manufacturing sectors is being examined. This suggests that, at least since 2000, developing countries that have undertaken financial liberalization of their current account (eliminating exchange rate restrictions and the like) may have improved their social welfare—reversing a two-decades-long trend that came before.

4 Conclusion

Although much has been written regarding the implications of globalization and the adjustment process stemming from economic integration for welfare systems in developing countries, there is much less analysis of the ways in which trade balances affect social protection. Liberalization and openness have increased the access of developing countries to traded goods, including agricultural commodities. However, that openness has also increased pressures on vulnerable groups.

In this paper, we argued that there are compelling reasons why net food importers and net food exporters would seek to expand social protection. For net importers of food and agricultural products, the potential for social unrest—by rural and urban poor—in the face of food price hikes would necessitate social protection. For net exporters, the presence of a relatively large food-producing sector (and the share of labor tied to the rural sector, and possibly in subsistence agriculture) would raise the imperative for larger-scale antipoverty efforts to address volatility and adjustment costs.

Our aim was to provide a preliminary empirical test of these countervailing possibilities. We examined social spending and social protection for developing countries after 2000, that is, after the era of trade reforms. In this liberalized period, we found that when it comes to the agricultural and food sector, net food exporters exhibit greater social protection than net food importers. One might have expected the prospect of food price shocks and other vulnerabilities more likely to affect food consumers would expand the public safety net in developing nations. Instead, social policy in developing nations, all else equal, seems to be partially shaped by the presence of food producers.

There are several possible reasons for this, all of which deserve further research. We raise two here, however conjectural. First, it is plausible that the main vulnerability-inducing factors in agriculture cannot be easily mitigated by traditional forms of social protection. As is well known, new factors are contributing to a rapidly changing and globalizing political economy of agriculture. These include expansion of biofuel production and related agro-processing, changing

nutritional needs, issues related to food insecurity, land grabbing, and climate change. Although some of these factors might induce price shocks, and thus impact food purchasers adversely, most will not necessarily affect commodity prices. Therefore, it is possible that, unlike in previous periods where a pro-urban bias forced governments to provide safety nets for those adversely affected by food prices, governments in developing countries in recent years are equally as likely to focus on nutrition programs, acquiring high-yield and drought-resistant crops, land title reforms, and other efforts more precisely targeted.

Second, most developing countries are in the midst of a transition away from traditional agriculture. Consequently, as food exporters move up the value-added chain toward processed agriculture, as multinational firms with global production and distribution systems play a greater role in developing country agricultural exports, the vulnerability of those rural populations excluded from higher value-added agriculture may be increasing.

The share of processed products in the agricultural exports of most developing countries is low, and governments are keenly aware of the costs of adjustment that accompany a shrinking agricultural sector. These costs can be affected by the lack of mobility of the rural population—particularly among smallholders, as leaving rural areas often means giving up land. Moreover, lower-skilled rural workers can find themselves at a competitive disadvantage compared with the urban workforce. Urban areas may also have shortages in housing stock and in public services, raising the costs of rural-to-urban migration. Consequently, policies that ease rural–urban mobility can have high pay-offs for economies undergoing a transformation of their agricultural sector, and, in this situation, governments may be prompted to increase the provision of social protection to these vulnerable groups.

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