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TRADE POLICIES FOR COMBATING INEQUALITY

Equal opportunities to firms, workers and countries

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EXECUTIVE SUMMARY

In the last four decades, international trade, along with finance and technology, has been instrumental in the development process of many countries. Trade reforms undertaken in developing countries have been accompanied by more rapid economic growth, leading to a reduction in income gaps and lower levels of inequality between countries. While the process of global trade integration has contributed to broad economic gains at country levels and convergence between developed and developing countries, yet it has also been accompanied by polarization in the distribution of income, sometimes increasing within-country income inequality. The increase in within country inequality is possibly a cause behind the current reaction against globalization, international trade and the multilateral trading system.

Despite its impact on inequality, trade remains a catalyst for economic growth and development. This is recognized in the 2030 agenda for sustainable development and the sustainable development goals (SDGs). SDG 10 on reducing inequalities within and among nations makes a limited but specific reference to the contribution of trade in terms of the provision of special and differential treatment to developing countries by way of the elimination of tariffs on imports of developing countries and least developed countries. International trade has greatly benefited global citizens by increasing economic efficiency, consumers purchasing power and product varieties. Overall, international trade has contributed to lift millions of people out of poverty and reduce inequality between rich and poor nations. Therefore, while it may be tempting to conclude that in order to reduce within country income inequality it is necessary to reverse trade integration policies, this would be clearly wrong. Despite the adverse distributional consequences of trade, resorting to protectionism is not a solution. In addition, there are many other drivers of inequality within and between nations. For example, evidence shows that skill-biased technological change has had a significantly larger impact.

The effect of trade on inequality has not been the same everywhere. There is strong evidence that the impact of international trade on inequality has been very different across countries, and that context specific factors can exacerbate or alleviate the outcome. Differences in outcomes provide compelling evidence that well thought national and multilateral policies can mitigate negative effects of trade on within-country inequality or even reduce inequality. To respond to inequality, rather than limiting trade, policymakers need to focus on encouraging trade with trade policies and on ensuring that the benefits brought by international trade become more inclusive with complementary policies. This

report discusses the impact of international trade on inequality, and policy actions aimed to make the benefits brought by international trade more inclusive.

This report identifies several factors why trade has contributed to reduce between country and higher within country inequalities. The fragmentation of production processes across countries, the uneven sharing of profits across value chains and the rules governing market access and entry conditions, while greatly benefiting some, have also had negative impact on some workers, firms and countries. More in detail, the fragmentation of the production processes across countries has contributed to rising within country inequality in developing countries by increasing the wage gap between the formal and informal sectors. In developed countries, it has increased inequality by lowering blue-collar employment opportunities and reducing wages of unskilled workers relative to skilled and white collars workers. In this regard, in general both in developing and developed countries trade has provided a premium to workers at the top while negatively affecting those at the bottom of the skill ladder.

A striking characteristic of the last few decades has been the increase of market concentration. The gains from international trade have been too often captured by larger firms, leaving micro and small enterprises with little benefits from increased trade opportunities. One reason for this is economies of scale and the high entry costs which small firms need to pay to be competitive in world markets. Market concentration has also resulted in higher mark-ups which create a bias towards producers and against consumers, further increasing within country income inequality. Trade also influences inequality through market access and entry conditions. International trade is increasingly regulated through non-tariff measures. Measures such as product requirements often limit exports from countries that lack productive capacity, quality infrastructure and conformity assessment opportunities. Subsidies and quotas affect international trade in ways that are often detrimental to low-income countries. Such non-tariff measures influence international trade and can have profound effects on inequality, both within and between countries.

There is much evidence that the effects of international trade are often highly localized and long-lasting. That implies that trade integration process has often exacerbated geographical inequality within countries. Because economic activity within a country is often clustered geographically, international trade has contributed to rising economic opportunities in some areas (e.g. areas with better infrastructure, export processing zones, coastal zones etc.) while lowering opportunities in other areas (e.g. rural areas or areas specialized in sectors subject to import competition). Lastly, international trade has also affected inequality by promoting structural change. There is strong evidence that, different from middle-income countries, international trade has often resulted in low income countries specializing in the production of commodities and low value-added goods. Such specialization into capital intensive sectors has often resulted

in little or no positive effect on unskilled wages and employment opportunities. Therefore, trade integration has contributed to further exacerbated income inequalities within many low-income countries.

In rethinking their approach to trade policy, policymakers need to confront new global trade realities in a context of rising inequalities and progress towards attainment of the SDGs. In the past, trade policymaking was largely driven by gaining market access and targeting productivity. This was largely achieved, but often with the negative side effect of rising within country inequality. In today's context, the challenge faced by policymakers is to make trade policy more inclusive, while not compromising on economic development by reducing trade opportunities. Trade policy must balance the needs of businesses to those of the society at large. The question of who benefits and who loses from changes in trade policy must be a first-order concern, rather than an afterthought to be addressed by complementary policies that are often not effectively implemented. In other words, trade policy should not only pursue efficiency gains but also consider the impact on smaller firms, and marginalized workers, including women youth and less skilled.

Trade policy should consider and minimize negative impacts on marginalized workers by seeking to improve labour rights and workers skills. There is evidence that including labour rights in trade agreement will benefit workers in developing countries. This result is due to increases in worker productivity because of healthier work environments, as well as more demand by global consumers for goods produced in accordance with workers' basic rights. The demand for better working conditions and fairer remuneration of workers and agricultural producers can also be pursued by promoting the use of private standards such as voluntary sustainability standards. Moreover, trade integration strategies will be successful only if the labour force can meet the skills required by export sectors. Education and training programs suited for increasing worker skills and worker mobility from declining to expanding sectors are important. Specific chapters in trade agreements to address gender conditions should become standard features of inclusive trade policies.

Trade policy should consider and facilitate small firms' integration in world markets. Allowing micro, small and medium size to better compete in global markets should be part of any package trying to make trade more inclusive. Smaller producers often have difficulty finding information about market access conditions and ways to comply with them on a cost-effective basis. Therefore, it is important to make available up-to-date information to smaller entrepreneurs on market access conditions such as tariff preferences and non-tariff measures such as quotas, rules of origin and standards, as well as on the complex processes linked to regulatory compliance. Better information is only part of the problem. Small firms also face relatively higher costs of entering global markets. E-commence, ICT services, and export promotion initiatives have great potential for levelling the playing field between small and large firms in accessing global markets. Well-implemented

export promotion programmes have been particularly efficient in supporting small firms in entering export markets and small exporters in diversifying their product and market portfolios. It is also necessary to enhance competition, both nationally and regionally, with competition policies to help small firms benefit from international trade. International cooperation in competition law enforcement may be encouraged by introducing specific clauses in the competition chapters of bilateral and regional trade agreements.

The role that multilateral cooperation on reducing global inequalities should also be carefully considered. Multilateral trade cooperation should include safeguarding the open, transparent and predictable multilateral trading system under the World Trade Organization and ensuring that any reform process remains inclusive and equitable, aligned with the SDGs. The principle of special and differential treatment and preferences for developing countries, in particular least developed countries, should be expanded. Moreover, multilateral cooperation is essential to prevent race to the bottom not only regarding labour but also for corporate taxation. Multilateral cooperation facilitating market access conditions both at and behind the border for such countries are relevant to attenuating adjustment costs for firms and workers and to augmenting the capacities of developing countries to produce, trade and compete.

Finally, a more inclusive trade policy agenda requires resources that may not be readily available. Still, resources can be mobilized in three main ways. First, since international trade has often resulted in an outcome where a few stakeholders receive the overwhelming majority of benefits from international trade, there is scope for many governments to implement more progressive taxation and redistribution schemes. Second, development assistance programs should not only aim to reduce inequality between countries but also within countries. In this regard development assistance should focus on increasing the productive, competitive and trade capacities of small and micro enterprises. Finally, private sector engagement is essential. Corporate responsibility, especially in relation to fair wages and tax avoidance schemes, could play an important role reduce inequality outcomes.

1. INTRODUCTION

The 2030 Agenda for Sustainable Development seeks to eradicate poverty, increase access to basic services, protect and preserve the environment, foster economic growth and development, and ensure peace and stability in all countries through comprehensive and integrated actions. Within this ambitious framework, Sustainable Development Goal (SDG) 10 aims at reducing economic inequality within and between countries by targeting more rapid income growth at the bottom of the income distribution, as well as more equal opportunities and less unequal outcomes.

Until now, national and international efforts have integrated very few elements from trade policy into packages aimed at meeting SDG 10 objectives. The only mention to international trade in SDG 10 is to encourage the use of special and differential treatment in favour of developing countries in the World Trade Organization (WTO),[1] which nonetheless is an important principle and tool for facilitating the integration of developing countries into the global trading system and world economy. While other instruments that are mentioned in SDG 10, such as the elimination of discriminatory laws, fiscal and wage policies, or international migration, no doubt have an important role to play in helping reduce inequality, trade policy can also play a role beyond the use of preferential treatment in the WTO. Indeed, this is highlighted by the articulation of the contribution of trade to other SDGs such as in 1, 2, 3, 5, 8, 9, 14 and 17.[2] The ways to integrate trade policy into policies, institutions and actions into ongoing efforts to reduce inequality are the subject of analysis of this report.

This report is structured as follows. Chapter 2 assesses the connection between trade policy reforms and between country inequality in the context of rapid integration of developing countries into the global economy in the 1990s, and alongside the process of globalization fuelled by trade, finance and technology. It shows that trade reforms have contributed to reducing income inequality between countries, but they have also been accompanied by a polarization of the distribution of income in the world, and in some places with large increases in within-country income inequality. As a caveat, it is important to stress that international trade and trade policy reforms are only part of the explanation. A myriad of factors, benign and malign, affect global inequality including war, disease, technology, education, and redistribution policies (Milanovic, 2016).

[1] The WTO agreements allow for members to treat developing countries, and especially least developed countries (LDCs), in a differential and more favourable way. The "special and differential treatment provisions" include: (i) Provisions aimed at increasing the trade opportunities of developing country Members; (ii) Provisions under which WTO Members should safeguard the interests of developing country Members; (iii) Flexibility of commitments, of action, and use of policy instruments; (iv) Transitional time-periods; (v) Technical assistance; and (vi) Provisions relating to LDC Members (see WTO, 2018a).

[2] International trade, the multilateral trading system and WTO make important contributions to the achievement of the SDGs (see WTO 2018b).

Chapter 3 summarizes what has been learnt over the last two decades about the relationship between trade and income inequality. Firstly, trade has indeed led to sizeable increases in income inequality in many countries, but it is far from being the main driver of it. Secondly, to reduce within country inequality what is needed is not necessarily less but more trade, in order to give a larger number of workers access to the benefits offered by global markets. Third, inequality can be better addressed if trade reforms are accompanied by non-trade adjustment and redistributive measures that address the unintended, negative consequences of greater integration into world markets.

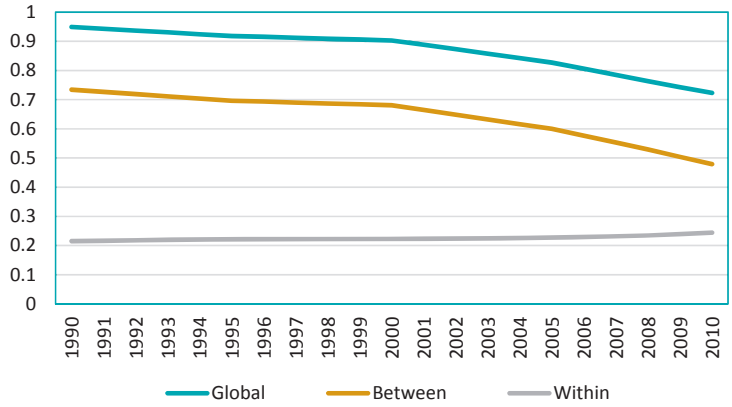
Chapter 4 examines the impact that different trade policy instruments and institutions have had on between- and within-country income inequality. The discussion covers tariffs and non-tariff measures as well as private standards. A key message from this chapter is that non-tariff measures, even if set in a non-discriminating manner, tend to discriminate against countries, especially developing countries with weaker production and trade capacities. Non-tariff measures also act as formidable barriers for small firms to enter global markets, which in turn tends to increase within-country income inequality. Chapter 5 provides some thoughts regarding the role of trade, and related complementary policies, in helping to combat inequality, and in boost the achievement of the sustainable development goals generally. The discussion identifies some of the most promising policy actions and institutions that would improve opportunities to firms, workers and countries to be beneficiaries from global markets. Chapter 6 concludes.

In sum, two major policy conclusions emerge from this report. First, in a context of rising inequalities, distributional effects of trade must be a first-order concern. Trade policy should not only pursue efficiency gains but also consider its effects on small firms and producers; marginalized workers, women and youth; and poorer countries. Second, what is needed is not necessarily less trade but more inclusive trade. Within this paradigm, several promising avenues can be considered to improve opportunities to firms, workers and countries to be beneficiaries from global markets and help reduce inequalities between and within countries and peoples.

2. TRADE AND INEQUALITY

International trade plays an important role in explaining recent trends on income inequality. The rapid integration of developing countries into world markets which began in the 1990s through deepening process of globalization of trade, finance and technology was accompanied by a significant decline in income inequality. This decline was largely driven by relatively higher economic growth in developing countries, and the consequence decrease in the gap in income per capita between rich and poor nations (see Figure 1). Decline in overall inequality started in the late 1990s, and reversed a trend of increasing global inequality that goes all the way back to the 19th century (Bourguignon, 2016).

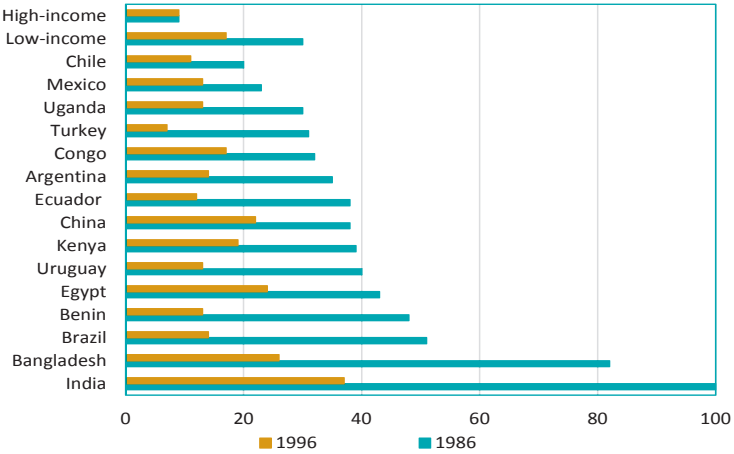
Figure 1: Global, between and within income inequality, Theil Index, (1990-2010)



Source: Bourguignon (2016). The Theil index is a measure of economic inequality. Higher values mean greater inequality. A Theil index of 0.5 means 74% of individuals own 26% of resources. In this figure, economic inequality has declined between countries, but increased within each country on average.

Part of the explanation behind the relatively rapid economic growth of developing countries is the role of multilateral and domestic policies in supporting trade integration. Countries such as India, Brazil and China that had very restrictive trade policy in the early 1980s engaged in deep and rapid trade reforms. At the same time, the average rate of protection of high-income countries, which were already relatively opened, remained unchanged (see Figure 2). The decrease in protectionist policies contributed to the rapid integration of many developing countries into world markets.

Figure 2: Average tariffs in selected countries (1986 vs 1996)



Source: UNCTAD's Trains database. Reported tariffs are averages of Most-Favoured Nation (MFN) tariffs. MFN tariffs refer to non-preferential import tariffs applied to other WTO members. Between 1986 and 1996, the average tariff applied by low-income countries declined from 30% to 18%.

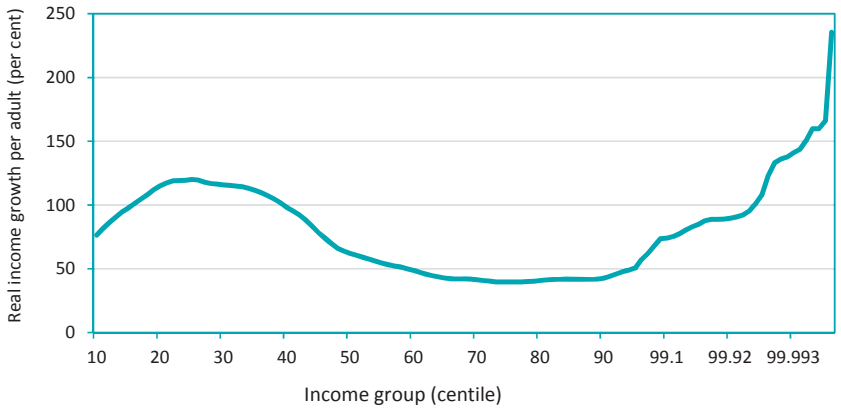
The recent pattern of global economic convergence is illustrated in figure 3 which shows the relationship between GDP growth and initial GDP per capita before and after 2000, when trade reforms accelerated in low-income countries. Prior to 2000 economic growth was not substantially different across countries. If anything, richer countries rate of economic growth was slightly higher than the average. On the other hand, with the beginning of the globalization period (around 2000), the relationship between initial GDP per capita and GDP growth becomes negative, as shown in panel b of Figure 3 for the period 2000-2017. This suggests that the economic integration of low-income countries was accompanied by relatively higher growth rates, leading to income convergence across countries.

One problem with measuring income inequality with the Theil index, Gini coefficient, or with relative income per capita growth, is that they summarize changes in the entire income distribution, without providing much details. For example, a decline in inequality measured by the Gini coefficient can be perfectly consistent with poor individuals becoming poorer, if this is balanced by a more equal income distribution between high and middle-income individuals. An alternative way of looking at inequality trends is to explore changes along the entire income distribution. This method for visualizing the evolution of global inequality was made popular by Lakner and Milanovic (2016) with the "elephant chart". Figure 4 reproduces this chart using data from the World Inequality

Report (2018). The horizontal axis ranks the world's population by their level of income (from the poorest individual to the richest). The vertical axis provides the income growth experienced by each income percentile between 1980 and 2016. The distribution of top percentile is more finely detailed to illustrate the strong income inequality at the very top of the income distribution. Income gains of the bottom 10 percent of global population are not reported because lack of reliable data.

Figure 3: Economic convergence before and after 2000

Figure 4: Changes in income across global citizens: Elephant curve 1980-2016



Source: From Figure E4 from the World Inequality Report (2018).

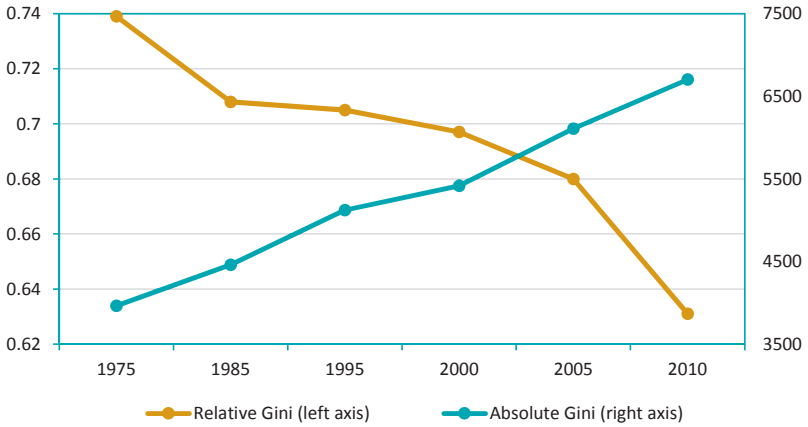
The message from Figure 4 is richer and more complex than that suggested by growing economic convergence or by the decline in inequality indices observed since the 1990s. Three stylized facts emerge. First, the poorest half of the world population has seen its income increase over the past three decades. This is generally explained by the rapid growth in emerging economies. Second, the global upper middle class (from 50 to 95 percentile) however has seen its income stagnate, which reflects the fact that the middle class in developed countries and economies in transitions has seen little income growth over the last twenty years. Finally, the global elite, those at the top of the income distribution, have experienced far greater income growth. By combining these three factors, it can be seen that the decline in global income inequality is explained by the rise of the middle classes in developing countries (although it should be noted that this rise in income of the middle classes is largely centred in the emerging economies and that it has not been adequate to also boost the income level of the poorest) . This is accompanied by a strong polarization at the top of the income distribution with those at the very top experiencing very rapid increases in income, while global middle-class individuals experienced very slow income growth.

The discussion so far has been on the evolution of what is known as relative inequality (Ravallion, 2018b), which focuses on changes in percentage terms. A complementary measure is absolute inequality, which measures the absolute difference in incomes between individuals. The difference between absolute and relative measures of inequality is important and can provide more insights on the evolution of income inequality. For instance, if the incomes of every individual were to double, then relative income inequality would remain unchanged. On the other hand, when all incomes double, the absolute increase in income (in monetary terms) is larger for individuals with high

incomes. Thus, the same changes in income can lead to different conclusions regarding the evolution of income inequality depending on whether absolute or relative inequality is being measured.

A striking characteristic over the last 40 years has been a decline of relative global income inequality accompanied by an increase in absolute global income inequality. Figure 5 reproduces the result of Niño-Zarazúa *et al.* (2017) which shows that between 1970 and 2010, relative income inequality as measured by the Gini coefficient declined by 13 per cent, while absolute inequality increased by more than 50 per cent. Notably, this occurred as low-income countries were rapidly integrating into world markets and experiencing faster growth.

Figure 5: Relative and Absolute Global Inequality (1975-2010)

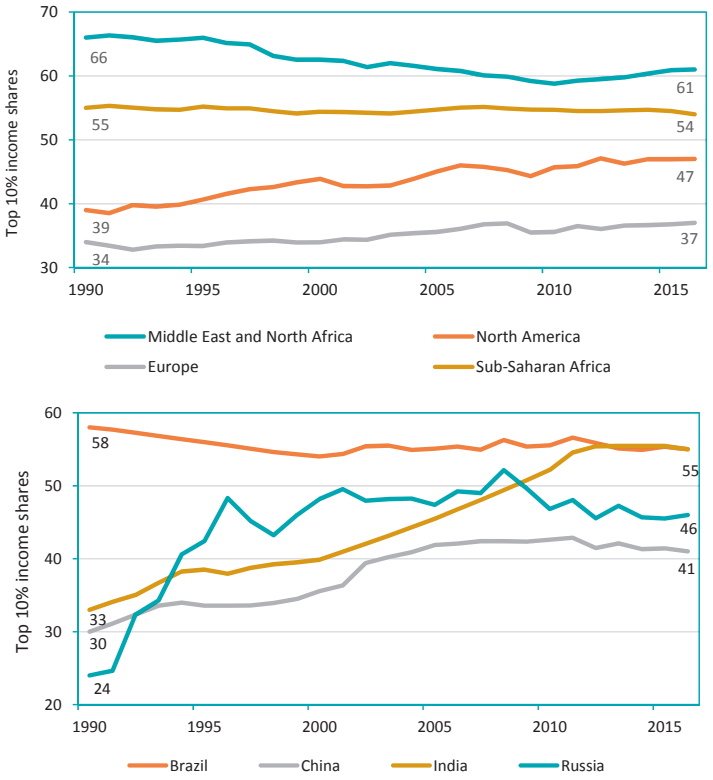


Source: Zarazúa *et al.*(2017). The relative gini coefficient is a measure of income inequality. It ranges from 0 to 1, with 1 being perfect inequality in income distribution. Absolute Gini focus on absolute differences in income. Relative Gini is measured on the left axis, and absolute Gini on the right axis.

Figure 5 complements the finding of Figure 4, but also suggests that absolute inequality accelerated after 2000. Again, this has been the result of income growth being increasingly and disproportionally captured by high income individuals. To summarize, at the global level relative inequality has declined, however within country relative inequality substantially increased. It is the increase of within country inequality that has grabbed the headlines in policy debates in high-income countries. This in turn has fuelled anti-globalization sentiment. Much less attention has been given to the role of globalization in the decline in global relative inequality. Two reasons can explain this focus on within-country inequality. First, the public is arguably more concerned by national issues. Second, the average increase in inequality within countries hides large heterogeneity. Relative and

absolute inequality has increased quite rapidly in many high-income countries; less so in developing countries.

Figure 6: Top 10 per cent income shares in selected regions and countries (1990-2016)

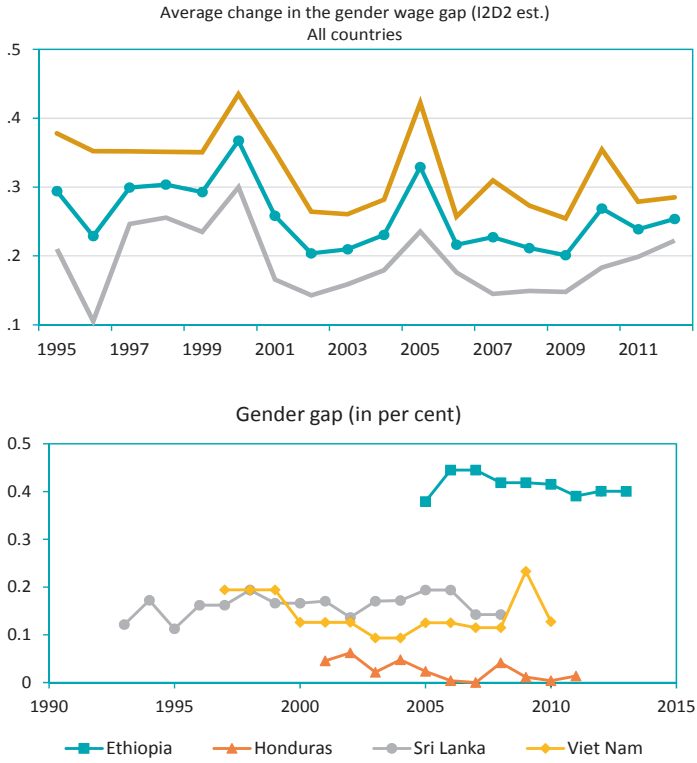


Source: World Inequality Report (2018). The figure represents the evolution of the income share held by the 10 per cent richest individuals over the period 1990-2016.

Figures 6 shows the evolution of the share of national income held by the top 10 per cent in selected regions and countries (left and right panels respectively). Data is taken from the World Inequality Report (2018). Over the last three decades, the share of the top 10 per cent has significantly increased in North America and there has been some more modest increases in Europe. The share of national income held by the top 10 per cent has not changed in Sub-Saharan Africa and has modestly declined in North African and Middle-Eastern countries. In China and India, the share of income held by the top 10 per cent of individuals increased gradually over the period to reach 41 and 55 per cent respectively by 2016. Not much change is observed in Brazil, where the top 10 per

cent still accounts for more than half of total income in 2016. In the Russia Federation, inequality increased drastically after the collapse of the Soviet bloc, and remained at around 46 per cent since then.

Figure 7: Gender wage gap (1996-2012)

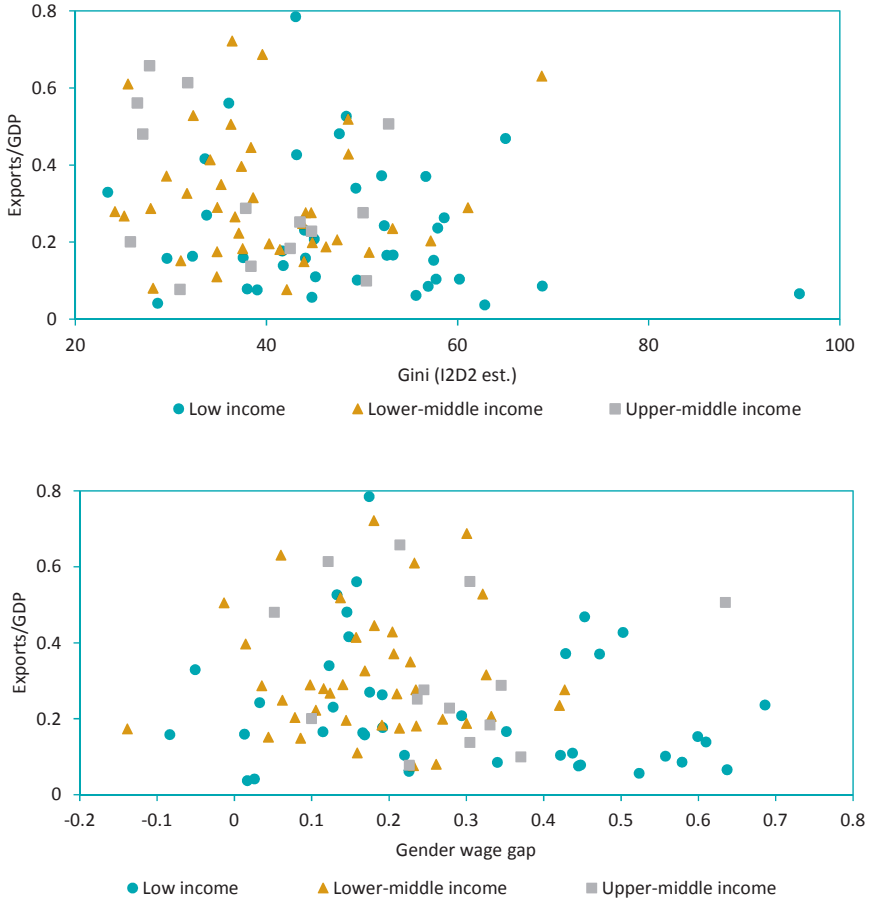


Source: Authors estimates using the World Bank I2D2 database. Estimates on the left hand-side figure are obtained by regressing the log monthly wage on a set of year dummies. It reports the average change in gender gap across all countries. Regressions are weighted using the number of workers in each country. Results show there hasn't been any significant change in the gender gap over the period 1994-2012. The right hand-side figure represents the gender gap in selected countries over the same period.

The evolution of other measures of inequality also shows significant heterogeneity during this period. For example, at the global level, the gender wage gap (average wage difference between men and women) was relatively stable at around 25 per cent between 1996 and 2012, according to our estimates reported in the left panel of Figure 7. However, this hides heterogeneity in the evolution across countries as shown in the right panel of Figure 7. The available data also fail to reveal any clear correlation between

income inequality or the gender wage gap and openness to trade, as measured by the ratio of exports over GDP (Figure 8).

Figure 8: Trade openness versus income and gender inequality



Source: Authors estimates based on World Bank I2D2 database using average export/GDP, average Gini and gender wage gap over available years. Both figures show there is no clear pattern between the ratio of export over GDP and income inequality (as measured by the Gini) and the gender wage gap.

To summarise, relatively rapid trade reforms in some poorer countries have resulted in more rapid growth, leading to a reduction in the income gap between rich and poor countries. This has contributed to the decline in global relative income inequality observed since the 1990s. However, the overall reduction in relative income inequality since the

1990s hides the fact that within country inequality has rapidly increased, especially after the 1990s.

A word of caution is necessary before concluding this chapter. It would not be appropriate to attribute any of these changes in between- or within-country income or gender wage inequality exclusively to trade reforms or integration into world markets. Ravallion (2018a) for example argues than an important share of the reduction in between country inequality is driven by factors other than trade, including redistributive, macroeconomic, fiscal and labour market policies. Technological change is another major factor behind the recent inequality trends. Also, Milanovic (2016) provides some broader factors affecting inequality in the era of globalization. Trade and trade policy reforms are only part of the explanation.

Similar arguments can be made in relation to the role of international trade in the evolution of income inequality within countries. The redistributive effects of international trade and trade policies were recognized long ago, the mechanisms were not properly understood. Recent analytical methods and availability data have allowed to pin-down more precisely the contribution that international trade and trade policy reforms have had on the evolution of inequality within each country. The next chapter summarizes the lessons that have been learnt over the last two decades about the relationship between trade and within-country income inequality.

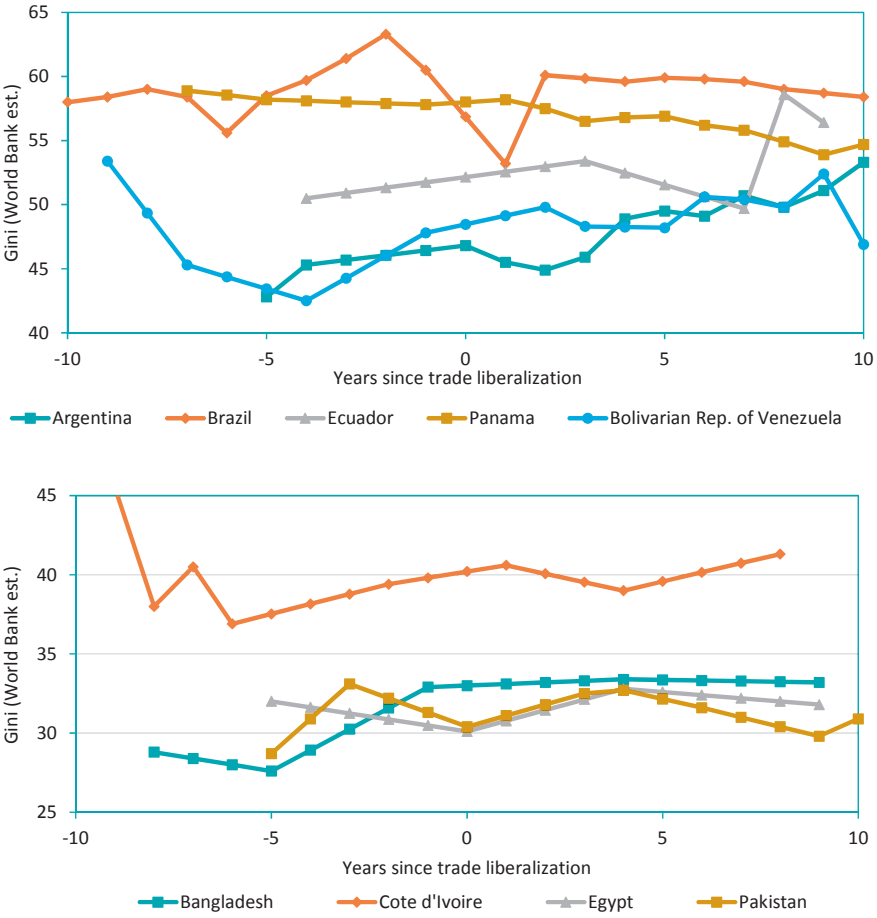
3. TRADE AND WITHIN-COUNTRY INCOME INEQUALITY

Until recently the economic literature had difficulties reconciling the empirical evidence of the increase in income inequality with the opening of the global economy (Wood, 1994). During the 1990s the economic literature indicated that not trade, but something else must have been driving changes in income inequality. The focus turned to skill-biased technological progress. It is only in the last decade that new trade models that allow for worker and firm heterogeneity provided mechanisms through which international trade can affect within country inequality that are consistent with empirical observation. The fact that micro level datasets became available allowed researchers to estimate and test these models providing some robust insights of the relationship between trade and within country income inequality.

In the 1990s trade economists expected the integration of low-income countries in the global economy to lead to a reduction in within country income inequality. According to the redistributive predictions of the Heckscher-Ohlin model, countries specialize according to their comparative advantage. As low-income countries have a comparative advantage in the supply of unskilled labour, trade should provide these workers with additional opportunities. This in turn leads to an increase in the relative wage of unskilled workers, which should lead to a reduction in income inequality.

The prediction of lower inequality in low-income countries, however, sits poorly with the experience of low-income countries that integrated into the global economy (Wood, 1994, 2002). Indeed, as discussed in the previous chapter, many developing countries, such as China and India, which were unskilled labour-abundant, have experienced an increase in income inequality over the recent decades. In Latin America there was also an increase in income inequality in many countries at the time when they opened their markets to international trade (see Argentina or the Bolivarian Republic of Venezuela in Figure 9). And many other countries did not experience any significant change in income inequality because of trade integration. These patterns cannot be explained by classic trade models, which would predict labour benefitting more than capital from trade reforms in these labour-abundant countries, leading to reductions in income inequality.

Figure 9: Income inequality before and after trade liberalization – selected countries



Source: World Bank's World Development Indicators for Gini indices and Wacziarg and Welch (2008) for the year of trade liberalization in each country.

This apparent conflict between economic models and empirical data has two implications. Firstly, other factors (skilled biased technological progress for instance) were the main forces driving income inequality, and secondly, the trade models that were used were not an adequate reflection of the world. If trade models fail to explain the increase in national inequality observed in most countries as low-income countries integrated into world markets, then technological progress may be the force behind raising national inequality. For technological progress to explain increases in income inequality, it needs

to be biased in favour of skilled workers or capital (Acemoglu, 2002). The fact that skilled labour wages have increased as the relative supply of skilled labour also increased in most countries tends to suggest that skilled biased technological progress has been driving these changes.[3] Indeed, Autor, Levy and Murnane (2003) provide strong evidence of the complementarity between technological progress and skilled workers. They split jobs into those requiring "routine" (manual or unskilled) and "non-routine" (analytical or skilled) tasks and show that there has been a rapid increase in the share of "non-routine" tasks starting in the 1970s. This shift was stronger in sectors that were adopting new technologies more rapidly, suggesting that technological progress was substituting for "routine" tasks, and therefore contributing to the increase in income inequality. Burstein, Morales and Vogel (2016) show that over the period 1984-2003 in the United States of America, the complementarities between skilled workers and technology led to an increase in relative demand for skilled workers that more than compensated the increase in their relative supply. This explains the observed simultaneous increase in employment and wages for skilled workers in the United States.

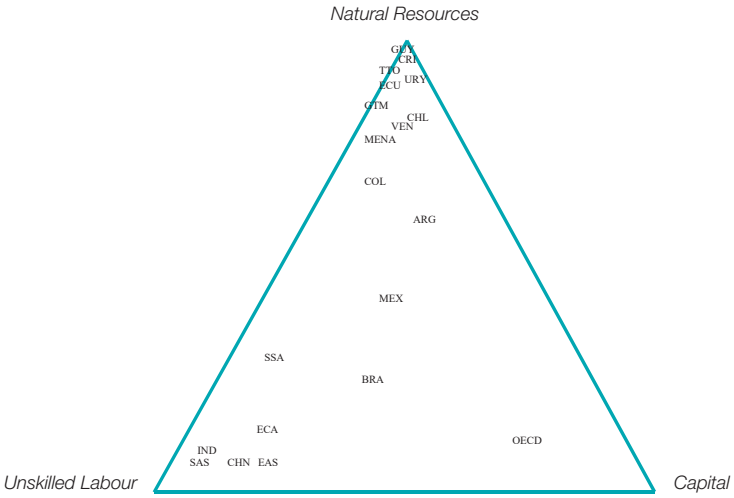
The second implication of classic trade models not being able to explain the evolution of national inequality in low-income countries is that these trade models are too simple to explain the real world. A first step towards allowing trade models to provide a more accurate description of the world involved moving beyond the two factors of production model (labour and capital, or skilled and unskilled labour) as a determinant of each country's comparative advantage. An important neglected factor of production when it comes to explaining many low-income countries comparative advantage is natural resources. Indeed, a large number of low-income countries may not have a comparative advantage in labour-intensive sectors but in natural resource abundant sectors. Thus, when countries open to trade it is the demand for natural resources and therefore their price that increases. Whether wages also increase relative to the price of capital will depend on the substitutability and complementarities between labour, capital and natural resources.

The Leamer Triangle allows us to visualize the location of each country in terms of labour, capital and natural resources abundance. It is shown in Figure 10 for a selected number of countries and regions. Developed and high-income countries are often capital abundant and therefore capital owners benefited more from international trade, which tended to increase income inequality. More interestingly, many low-income countries were abundant in natural resources and owners of these resources benefitted from integration into world markets. If owners of natural resources were located at the top of the income distribution in these countries, then national inequality would increase. Moreover, in the presence of complementarities in production between natural resources and skilled

[3] Note that technological change need not be biased in favour of skilled workers. Luo (2017) shows that as Europe was experiencing significant technological progress during the 500 years before the First World War, the wage gap between skilled and unskilled workers declined by more than 50 percent.

workers or capital, the bias towards rich individuals associated with the integration of low-income countries to world markets would only exacerbate the issue.[4] Allowing for more factors of production can help explain increases in income inequality both in high and low-income countries as the latter integrate into world markets.

Figure 10: Factor abundance in a three-factor country model: the Leamer triangle in 2000



Source: Perry and Olarreaga (2007). *Unskilled labour* is obtained from the Barro and Lee dataset assuming that unskilled or raw labour is given by the labour force with up to secondary education completed. Capital is obtained using the perpetual inventory method from *World Development Indicators* data (qualitative similar results are obtained using skilled labour calculated using the Barro and Lee dataset). *Natural Resources* are proxied by net exports of products intensive in natural resources. It is transformed into a positive number by taking the squared root of the exponential of net exports. All endowments are then normalized to be between 0 and 1. Countries in the top corner of the triangle (Chile, Uruguay, and Costa Rica) are abundant in natural resources and scarce in unskilled labour and capital. Countries in the bottom left corner (India for instance) are abundant in unskilled labour and scarce in natural resources and capital. OECD countries appear abundant in capital and scarce in unskilled labour and natural resources. SSA: Sub-Sahara Africa; MENA: Middle-East and North Africa; EAS: East Asia and Pacific; SAS: South Asia.

Offshoring models that allow for the fragmentation of production across countries into different tasks provide an alternative explanation for why as low-income countries integrated into world markets, inequality increased in low and high-income countries. Feenstra and Hanson (1996) developed an offshoring model that provides such a result

[4] Another reconciliation of early trade models with empirical observation regarding the impact of trade on within country inequality in unskilled-labour abundant countries is the specific-factor model (see Jones, 1991). Factors of production are assumed immobile across sectors (and that is why it is often seen as a model that captures short or medium-run effects). If owners of factors of production that are specific to export-competing sectors are at the top of the income distribution, then opening up to trade naturally leads to an increase in returns to those factors that are specific to the export-competing sector, and therefore an increase in the share of the top incomes.

within the classic trade framework. Instead of thinking in terms of sectors, they think of production as involving a continuum of tasks. Some of the tasks can be offshored to other countries, depending on the relative cost of these tasks in different countries, and on a trade cost as the product of the offshored tasks needs to be imported back. Given that low-income countries tend to be relatively abundant in unskilled labour, the cost of tasks requiring unskilled workers will be relatively cheaper there. Hence, unskilled-intensive tasks will be offshored to low-income countries that will specialize in the production of these tasks. High-income countries, on the other hand, will be the ones producing the skilled-intensive tasks.

When trade costs fall between high and low-income countries, there are stronger incentives to offshore more unskilled-intensive tasks from high to low-income countries. These newly offshored tasks are the least skill-intensive of the tasks performed in high-income countries. As these relatively unskilled-intensive tasks get offshored, the demand for unskilled workers in high-income countries falls, which leads to a decline in unskilled wages, and therefore an increase in income inequality in high-income countries. More surprisingly, and contrary to the prediction of the Heckscher-Ohlin model, this will also increase inequality in low-income countries. The reason is that the offshored task, which is the least skill-intensive task from the point of view of the high-income country, is also the most skilled-intensive task in the low-income country. Thus, the relative demand for skilled workers also increases in the low-income country leading to an increase in income inequality there as well. Feenstra and Hanson (1997, 1999) showed that offshoring from the United States to Mexico can explain up to 25 per cent of the increase in relative wages of skilled workers in the United States, and up to half of the increase in the relative wage of skilled workers in Mexico during the 1980s.

It is also important to note that unskilled workers may not necessarily lose from the offshoring of tasks in high-income countries if productivity gains are allowed. Grossman and Rossi-Hansberg (2008) showed that if productivity gains associated with the offshoring of some tasks are large enough, then firms will likely expand and increase its demand for both types of labour, including low-skilled workers. Whether productivity gains reflect into a decline in inequality depends on whether such gains are captured by labour through higher wages. Estimates by Wright (2014) of the impact of United States offshoring to China on the wage of unskilled workers in the United States suggest that the increase in wages dues to productivity effect does not fully compensate the decline in wages due to lower labour demand , but only reduces its impact by more than two thirds. Overall, offshoring to China is found to be a net loss for unskilled workers in the United States.

The recent availability of more detailed firm- and worker-level dataset has allowed uncovering new facts that tend to be at odds with standard trade model predictions that as countries open up to trade one should observe a reallocation of workers from

import-competing to export-oriented industries. Recent empirical evidence suggests that following a trade shock (such as a reduction in import tariffs), worker reallocation occurs mainly within industries, from low- to high-productivity firms (Pavcnik, 2002). The predictions of the classic model are also at odds with the observation that most of the increase in the wage skill premium observed in the United States in the 1980s and early 1990s also occurred within industries and between firms (Bernard and Jansen, 1997). A reason for this is that many workers have moved within industries to exporting firms, where the skill premium is higher. This of course would have an impact on wage inequality that cannot be explained in classic trade models.

The introduction of firm and worker heterogeneity into trade models provides a solution to this puzzle. Recognizing that there are differences in productivity within industries and that worker characteristics also widely vary was indeed a necessary step to reconcile theory with empirical evidence. Melitz (2003) provides the basic framework to understand the reallocation of resources across firms and within industries following a trade shock. Because participation in world markets requires paying fixed costs associated with marketing, information and logistics in foreign markets, only the most productive firms are able to participate in world markets, leaving smaller and less productive firms outside world markets. Through the reallocation of resources from low to high-productive firms, trade liberalization leads to increases in average productivity.

Note that because in Melitz initial framework workers are identical and can move freely across firms, they all receive the same wage. The model therefore has nothing to say regarding wage inequality. Differences in income inequality could only be explained by differences in profits across different firms. Owners of more productive firms will see their profits increase as their firms improve their access to international markets, while owners of less productive firms will see their profits decline or even fully vanish if their firms are forced out of the market by the tougher competition brought on by trade liberalization.

For wage inequality to emerge in models with heterogeneous firms, either labour market frictions or worker heterogeneity are needed. Egger and Kreickemeier (2009) are the first to introduce labour market frictions into a trade model with heterogeneous firms. Workers have fair-wage preferences as in Akerloff and Yellen (2000), meaning that employees of more productive firms expect to be paid higher wages if they are to provide a full effort. This introduces both differences in wages for *ex-ante* identical workers, as well as unemployment as fair wages are higher than the equilibrium wage. They find that the move from autarky (absence of trade) to trade increases welfare and raises the average profit of exporting firms as in Melitz (2003), but also leads to increases in wage inequality. The reason for the latter is precisely that the average profit of exporting firms increases relatively to those that sell only in the domestic market. In the presence of fair wages, this increase in the dispersion of profits across firms will be linked to an increase in the dispersion of wages across firms leading to increases in wage inequality.

Differences in wages, depending on whether a worker is employed at an exporting firm or not, may also affect the impact of trade on wage inequality. Baumgartner (2013) uses employer-employee matched data for the German manufacturing sector and shows that part of the increase in wage inequality observed in Germany between 2006 and 2007 can be explained by the increase in wages paid by exporting firms within sectors and within skills relative to non-exporting firms. Egger and Kreickemeier (2012) introduce worker heterogeneity into a setup with two different types of workers: production workers and managers. The previous results of Egger and Kreickemeier (2009) are unchanged, but there is now an increase in wage inequality between managers and production workers following the opening of the economy to international trade. The reason is that the increase in profits of exporting firms fully translates to the wage of managers (who do not have fair wage preferences by assumption) whereas it only is imperfectly transmitted to production workers due to the fair-wage setup. Egger, Egger and Kreickemeier (2013) provide a quantification of the impact of opening to trade on wage inequality in a similar setup. The move from autarky to the observed level of trade openness in five European countries leads on average to an 8 per cent increase in wage inequality. Thus, while the impact of trade on wage inequality within European countries can be sizeable (22 per cent in Bosnia and Herzegovina), the quantification efforts suggest they can only explain a small part of the observed increases in these countries.

Felbermayr et al. (2018) reach the same conclusion for Germany. They show that the increase in inequality in Germany occurs essentially within sectors and that it can be explained by tougher competition observed at the sector level, but only a small part is due to trade. This echoes again the work by Ravallion (2018a) showing that not all change observed in inequality should be attributed to trade or trade reforms.

Another quantification exercise by Burstein and Vogel (2017) for more than 30 countries also reaches the same conclusion. As before, firms vary according to their productivity and workers can be low- or high-skilled. What is new in their setup is that high-productive firms tend to hire relatively more skilled workers. Thus, as countries open up to trade and more productive firms become larger, there is an increase in the demand for skilled workers in all countries, which leads to an increase in the skill premium and in wage inequality in all countries. However, their model can only explain an average increase of 5 per cent in the wage skill premium following a move from autarky to the observed levels of trade. The largest increase is observed in Lithuania with a 12 per cent increase in the skill premium. These are sizeable impacts, but not large enough to explain the rapid increases in wage inequality in many countries.

An alternative explanation for observing increases in the skilled-unskilled wage gap at the time of trade liberalization is provided by Bas and Paunov (2019) who examined the impact on skilled and unskilled wages when Ecuador joined the WTO in 1996. They argue that the reduction in tariffs on inputs allows for imports of more sophisticated goods,

which increases the quality of output and requires a more skilled work force. According to their estimates a 1 per cent reduction in tariffs on inputs, leads to a 0.5 per cent increase in the skilled-unskilled wage gap.

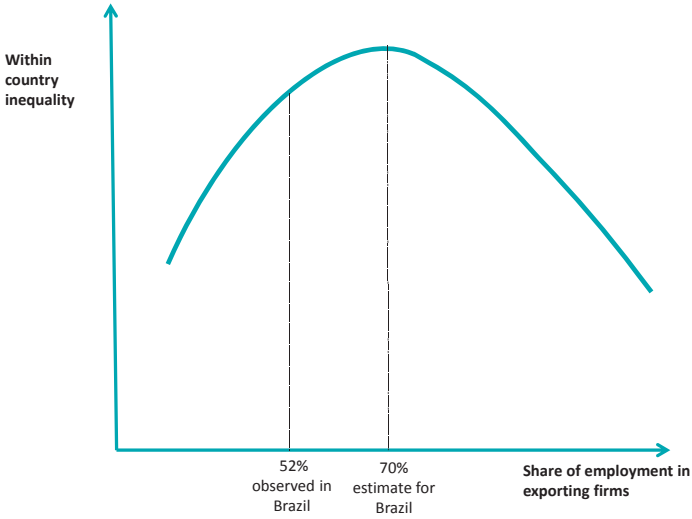
Kinuthia and Manda (2019) provide evidence for Kenya that firm participation in export markets results in a larger skilled-unskilled wage gap and therefore higher inequality. They show that exporting firms pay higher wages to tertiary and secondary educated workers, but workers with primary education or less do not receive higher wages in exporting firms. The differences in wages are quite large, with secondary educated workers getting 12 per cent higher wages in exporting firms and tertiary educated workers getting 70 per cent higher wages in exporting firms. However, the increase in wage inequality associated with exporting firms paying higher wages for secondary and tertiary education workers is less than 2 per cent.

A potential explanation for the increase in the wage gap between skilled and unskilled workers in Kenya associated with firm participation in export markets is provided in Kinuthia and Olarreaga (2019). They show that firm participation in international markets reduces the bargaining power of labour unions within firms, which then results in lower wages. They provide evidence for Kenya showing that exporting firms with a large share of unionized workers tend to pay lower wages than non-exporting firms with a large share of unionized workers. The result is fully explained by the impact of being an export firms on production workers' wages. Thus, the competitive pressure of larger international markets results in lower, not higher wages, for unskilled (or production) workers, due to the reduction in the strength of labour unions.

Introducing search frictions in the labour market instead of "fair-wages" and/or heterogeneous workers into a Melitz setup, Helpman et al. (2010) find that the relationship between trade and inequality exhibits an inverted-U shape. Like in the previous papers, as countries open to trade, income inequality increases. The difference is that after a certain trade liberalization threshold, as countries continue to open to trade, inequality starts declining. The reason is that initially only the largest, more productive firms that pay higher wages benefit from the move towards freer trade. The less productive firms cannot afford the fixed costs of exporting and are therefore reduced to selling only in the domestic market or exit all together. This implies that the already larger and more productive firms, which were paying higher wages, end up paying even higher wages as they have access to a larger international market. This leads to an increase in wage inequality. However, as trade costs keep declining, smaller firms are able to engage in world markets and benefit from better market access. Having access to world markets leads them to expand and to increase their demand for all workers. This in turn reduces income inequality by reducing the wage gap across firms. The logic is very similar to the one of the dual economies with rural and urban markets and their effect on inequality (Kuznets, 1955). Initially, reductions in trade costs offer new opportunities to larger firms only and this increases inequality. As

all firms become exporters and have access to the same world market, inequality tends to decline (see Figure 11).

Figure 11: Within country inequality and share of firms exporting



Source: Helpman, Itskhoki, Muendler and Redding, 2017.

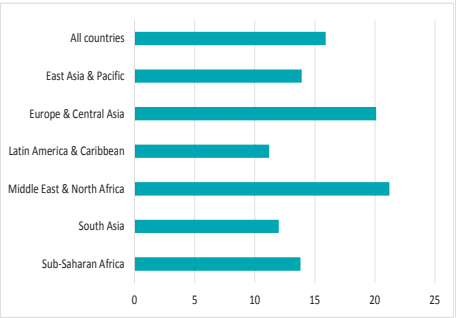
Helpman et al. (2017) provide evidence for Brazil. According to their estimates, the move from autarky to the observed level of trade in Brazil led to a 7.5 per cent increase in wage inequality. More interestingly further reductions in trade costs will lead to increases in wage inequality until the share of employment in Brazilian exporting firms reaches 70 per cent. The observed share of employment in exporting firms is 52 per cent in their dataset (corresponding to the year 1994). A reduction in trade costs that will result in an increase in the share of employment in exporting firms from 52 to 70 per cent would result in an additional increase in inequality of 3 per cent. Once the share of employment in exporting firms reaches 70 per cent, further reductions in trade costs will be associated with reductions in income inequality as a sufficiently large number of firms (and therefore their workers) has access to international markets. Thus, one could argue that, as far as international trade is concerned, the problem with Brazil's income inequality is not that there is too much trade, but rather that there is too little of it.

Allowing a larger number of firms and therefore workers to benefit from larger international markets is therefore likely to lead to reductions in wage inequality. Unfortunately, participation in international markets is not as widespread as it should be. In the Brazilian manufacturing sector only 52 per cent of workers worked in firms that

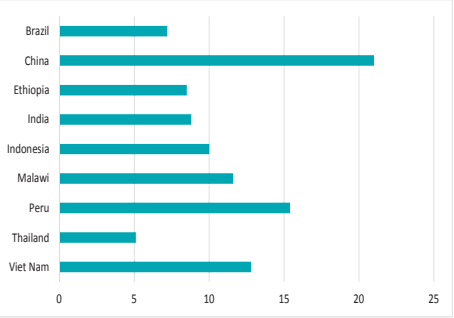
were exporting, and perhaps more worryingly, exporting firms represented only 9 per cent of firms. Such a small share of firms having access to international markets is common. Figure 12 provides the share of exporting firms in the manufacturing sector in different regions and countries. Panel (a) shows that differences between regions exist but are not that large either. The average share of exporting firms is about 16%, with this figure going up to 20% and 21% in Europe and Middle-Eastern countries respectively, and down to 12% in Latin America and Caribbean countries. These averages hide some important heterogeneity across countries, and panel (b) provides the share of exporting firms in a selected group of countries. In China for instance, more than 20% of manufacturing firms are exporting, while they are only 5% in Thailand and about 8 to 9% in Brazil, Ethiopia and India.

Figure 12: Share of exporting firms

(a) selected regions



(b) selected countries



Source: World Enterprise Survey of the World Bank. Data report the share of firms that either exports indirectly or directly at least 10% of their sales. Latest years available used for each country: Brazil (2009), China (2012), Ethiopia (2015), India (2014), Indonesia (2015), Malawi (2014), Peru (2017), Thailand (2016), Viet Nam (2015).

In addition, data also show that for most of the firms, export sales only represent a small fraction of total sales. According to Mayer and Ottaviano (2007) in Europe only 25 per cent of firms export more than 50 per cent of their turnover. And these few firms account for 70 per cent of total exports. This leads to a very large concentration of aggregate exports into the hands of a very small number of firms (UNCTAD, 2018). In a sample of 30 developing countries, Freund and Fierola (2015) show that the exports share of the *top firm* in each country is on average 14 per cent. The share of the top firm can be much larger in some Latin American and Sub-Saharan African countries. It is 65 per cent in Botswana, above 30 per cent in Burkina Faso, Niger, and Malawi, and above 20 per cent in Costa Rica and Chile.

Not only do the largest firms enjoy a large share of world trade, but the entire distribution of exporting firms is very concentrated. The share of the top five firms accounts on average for 30 per cent of aggregate exports. This extreme concentration of exports in a few large firms raises concerns regarding market power both in product and labour markets (UNCTAD, 2018).

A first step towards addressing the role played by market power is provided by Loecker et al. (2016). They show that the Indian trade reforms of the 1990s has led to a decline in prices, but also to an increase in markups because only part of the reduction in input tariffs has been transmitted to final good prices. Thus, markups have increased, even though reductions in final good tariffs had the expected pro-competitive effects. This implies that the gains for producers were larger than the gains for consumers, which is suggestive of increases in income inequality.[5]

When looking at the impact of trade on consumers, it is important to note that consumers are also heterogeneous. Rich and poor individuals do not consume the same type of goods. This implies that the same increase in *nominal* income can have a very different impact on *real* income (hence welfare) depending on the goods being consumed. Fjgelbaum and Khandelwal (2016) examined this in a sample of 20 developing and emerging countries and they found that trade tends to be pro-poor as poor households consume a disproportionate amount of traded goods, as well as goods that tend to have a lower degree of substitution with domestic goods. Nicita, Olarreaga and Porto (2014) argue that this effect is likely to be small in Sub-Saharan African countries because a large share of poor household consumption tends to be self-produced and is not affected by changes in market prices. In any case, if one consider inequality based on real income (or welfare) rather than wage inequality, differences in consumption baskets are such that the impact of trade on welfare becomes smaller.

An important dimension when examining the differences of the impact of trade across categories of workers is how this affects the incentives to further acquire skills. A growing literature now explores the short and long-run differences on income inequality of trade and generally concludes that trade leads to smaller increases in wage inequality. Indeed, as the skill premium becomes larger, individuals have incentives to acquire new skills, which in the long run leads to a smaller skill premium and therefore smaller wage inequality. Danziger (2017) estimates a dynamic model that allows for skill acquisition and shows that a move towards free trade in the United States would lead to a smaller increase in the skill premium in the long-run. Smith (2018) shows that the China shock had a smaller impact on wage inequality in the United States in the long-run. Finally, Yang (2018) provides similar evidence for 40 countries.

[5] There is currently an interesting modelling effort undertaken by Surevato and Ottaviano (2019) that aims at introducing product and market power in a trade model to understand the impact that trade has on the distribution of income.

Unfortunately, the impact of trade on skill acquisition does not always lead to more skill acquisition and to better outcomes in terms of income inequality. Atkin (2016) shows that a larger share of Mexican children dropped out of school when exposed to the creation of export-manufacturing jobs. For every 25 jobs created in the export-manufacturing sector, one child dropped out of school. This effect is explained by the increase in the short-run opportunity cost of staying at school when unskilled manufacturing jobs are offered nearby. Ensuring that global supply chains do not lead to these perverse effects is something that will be returned to in the last section.

An additional phenomenon when it comes to income inequality is the premature deindustrialization of low-income countries highlighted by Rodrik (2016). The manufacturing sector is an important source of unskilled labour employment, and there is an inverted-U shape relationship between the share of manufacturing employment and GDP per capita. The problem is that before the 1990s low-income countries used to reach the peak share at levels of GDP per capita around $12,000 (in 1990 US$). After the 1990s the U shape relationship has shifted to the left and the maximum is reached at much lower levels of GDP per capita (around $4,500 in 1990 US$). This implies that manufacturing and its demand for unskilled workers is no longer the main source of employment growth after countries reach a GDP per capita level of $4,500. Most of the employment growth after this relatively low level of GDP per capita comes from the service sector. The issue with this is that the service sectors that are creating the new jobs are not sectors that boost overall productivity, and ultimately wages. Firms in wholesale, retail, or transportation sectors may create jobs for unskilled workers, but there is little room for productivity gains in these sectors. Service sectors such as new information and telecommunication technologies are very likely to generate productivity gains, but these sectors employ mostly skilled and highly trained workers. Rodrik (2016) suggests that this rapid deindustrialization observed across the world is due to both the globalization of production, which allows to produce from a single location and reach all consumers, as well as technological progress. However, such deindustrialization patterns need to be considered also as a result the increase in the use and supply of services by the manufacturing sector as shown by Crozet and Milet (2017). Such services increasingly accompany manufacturing goods in including not only transport but also training, after-sale services, and financial services for instance. Note that this implies that improving efficiency in the service sectors can also significantly contribute to the growth of the manufacturing sector. For evidence of this for India, see Arnold et al. (2016).

In economic terms, whether premature deindustrialization contributes to income inequality depends on whether the manufacturing sector is more unskilled-intensive than the service sector. However, most of the existing evidence suggests that the service sector is often more skilled-intensive. As the economy deindustrializes, the relative demand for unskilled workers falls, and this in turn leads to an increase in the wage gap between skilled and unskilled workers. For instance, Mehta and Hasan (2012) provide evidence

that trade in services has led to increases in wage inequality in India. Amoranto et al. (2010) provide evidence for the Philippines of increases in wage inequality associated with services trade in the banking, distribution, and telecommunications areas as they provide relatively more job opportunities for skilled workers. Cassette et al. (2010) show that the long-run effects of trade in services on income inequality are much larger than the long-run effects of trade on goods in a sample of 10 OECD countries. Interestingly, the increase in income inequality associated with trade in services is more pronounced at the top of the income distribution.

Income inequality is not the only type of inequality that is targeted by SDG 10. Decreases in gender inequality are also a goal of SDG 10. Trade integration has often been associated with a rise in the female share of employment, or feminization of labour, thus leading to a reduction in gender inequality. Pieters (2018) identifies three reasons why trade may reduce gender inequality. First, the pro-competitive effects of trade should reduce discrimination, as discriminating firms tend to be less efficient and they are either pushed out of the market or they need to adopt their behavior and discriminate less. Second, trade may induce technological innovation, which generally implies that manufacturing jobs are less physically demanding and therefore more adapted for women, increasing the relative demand for female employment although mainly for lower skilled tasks that prior to the introduction of technological improvements required the use of physical strengths. Third, if the comparative advantage of a country lies in products that are more traditionally female-intensive, then trade will increase the demand for these products and therefore the relative demand for female workers.[6]

There is evidence in the literature for these three effects. Yahmed (2017) provides evidence that firms subject to import-competition in Uruguay discriminate less than firms that are not exposed to import competition. Juhn et al. (2013) provide evidence for the second effect in Mexico. They show that the demand for unskilled women increases in Mexico as technological progress associated with trade reforms reduced the need for physical-intensive tasks. Finally, there is evidence in support of the third effect for Colombia. Ederington et al. (2009) show that as Colombia opened up to trade in the late 1980s and early 1990s, the share of female employment increased, and that this increase was larger in sectors that became more exposed to international trade. This is consistent with the idea that Colombia had a comparative advantage in traditionally female-intensive sectors.

It is important to note that the third effect is conditional on countries having a comparative advantage in female-intensive products. By definition, not all countries can have a comparative advantage in female-intensive products. Some need to have

[6] A caveat is the competitive advantage effect. Firms that open to international competition tend to hire more women, who often are paid less and have less bargaining power, as a cost-cutting strategy. So even though female employment increases, gender wage gap may increase as well. The early phases of trade liberalization in Asia offer such evidence.

a comparative advantage in male-intensive products and therefore trade is likely to increase the relative wage of men. Gupta (2015) provides evidence for India where trade reforms led to an increase in the male-female wage gap and the gap became larger as sectors became more exposed to international trade in the early 1990s. The gap also increased due to skilled-biased technological progress in sectors more exposed to import-competition, which hurt female employment more as in India when men tend to be more involved in technology-based production than women are on average.

This ambiguity in empirical results leads Pieters (2018) to conclude that the literature does not offer a clear pattern in terms of the impact of trade on gender inequality. However, it provides some interesting guidance, suggesting that the impact will depend on whether the country has a comparative advantage in female-intensive sectors. It also provides policy guidance in terms of education policies needed to address increases in gender inequality associated with trade or trade reforms. Other suggestions can also be garnered from UNCTAD country and regional studies on the impact of trade reforms on women.[7]

In conclusion, if the early literature had trouble reconciling increasing income inequality in low-income countries with the theoretical understanding provided by classical trade models, simple extensions of these models could easily explain it without any need for the introduction of heterogeneous firms or workers. Indeed, allowing for several factors of production and introducing complementarities between natural resources and skilled labour could provide some explanation for the increases in income inequality associated with trade reform in the low-income countries. Similarly, models of trade in tasks rather than trade in goods could also provide an explanation. Skilled-biased technological progress accompanied or induced by trade can also explain increases in income inequality as low-income countries integrate into world markets.

What models of heterogeneous firms and heterogeneous workers with large datasets matching employers and employees allow us to do is to more precisely estimate the role played by different mechanisms and the importance that trade played in the increases in income inequality. One important conclusion from these quantitative exercises is that trade has indeed led to sizeable increases in income inequality, but it is by far not the main driver of the observed increases in income inequality in both high and low-income countries (Helpman, 2018).

A second conclusion is that in order to reduce income inequality what is needed is to give access to a larger number of workers to the benefits offered by global markets. Facilitating micro, small and medium size enterprises to enter global markets should be a priority when considering trade reforms. This implies that trade reforms should also consider reducing anti-competitive behaviors by large firms in international markets. To tackle this concentration of market power by large firms, it seems unlikely that a reversal

[7] See https://unctad.org/en/Pages/DITC/Gender-and-Trade/Trade,-Gender-and-Development.aspx

towards more protected national markets could help, as this is likely to increase large firms' market power at the local level.

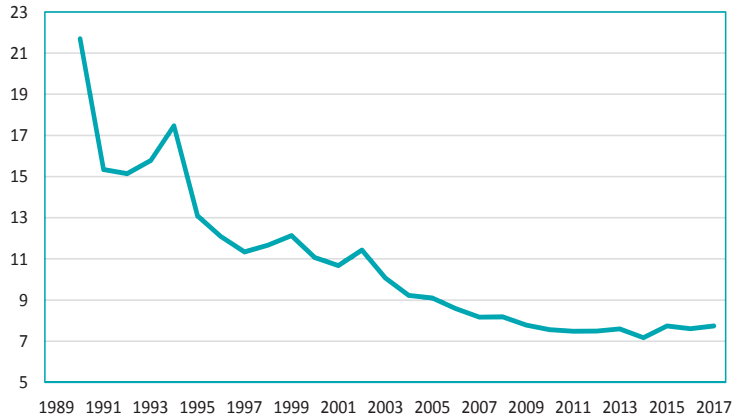
A final message is that trade reforms need to be accompanied by other non-trade adjustment and redistribute policy measures that address some of the unintended consequences of greater integration into world markets. Examples of accompanying, flanking measures should consider the indirect effect of economic integration. For example, measures to prevent children dropping out of school because of trade-related job opportunities, or measures counteracting the increases in gender inequality often due to technological progress associated with trade. Training, education and social programmes that address these unintended consequences need to be put in place if they do not exist before countries engage in trade reforms. All this indicate the need to conduct ex-ante assessments of trade reforms that allow to assess the impact of such reforms on specific segments of the population, such as women or youth, and not only on a country as a whole.

4. TRADE POLICIES, MARKET ACCESS AND INEQUALITY

The objective of this chapter is to examine the impact that different trade policy instruments and institutions have had on between- and within-country income inequality. It starts with examining how market access conditions to high-income countries affects inequality in low-income countries. Both tariff and non-tariff measures (NTMs) are examined, as well as private standards. Fair Trade initiatives, for example, often aim to a fairer distribution of gains along international value chains. The chapter concludes with examining the impact that trade policies and market access have on within-country income inequality in low-income countries.

When looking at trade policies particular emphasis is given to NTMs because tariffs have become less and less restrictive over time. Figure 13 provides the world's import-weighted average tariff between 1989 and 2017 and shows a quite steady reduction in average levels of tariff protection around the world.

Figure 13: World import-weighted average tariff, 1989-2017

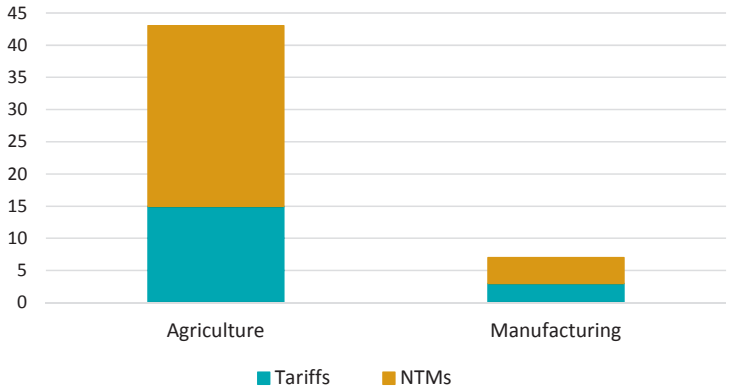


Source: UNCTAD Trains database.

At the same time, NTMs have become more common. According to UNCTAD (2018) technical regulations were imposed on 37 per cent of tariff lines in 1999. The equivalent figure for 2014 is above 60 per cent. Maggi, Mrazova and Neary (2018) explain this phenomenon using a political economy model whereby as tariffs are reduced through multilateral cooperation, governments turned to NTMs for protective measures. Because NTMs are less transparent instruments than tariffs, they are able to set them at even

more restrictive levels than pre-existing tariffs in order to redistribute income to domestic lobbies. Figure 14 provides estimates of the relative restrictiveness of tariffs and NTMs in high-income countries. In both agriculture and manufacturing, the trade restrictiveness of NTMs is larger than the trade restrictiveness of tariffs, with NTMs in agriculture being almost twice as restrictive as tariffs.

Figure 14: Relative trade restrictiveness of tariffs and NTMs in high-income countries



Source: Kee, Nicita and Olarreaga (2009). NTMs are expressed in "tariff-equivalent" units. The level of NTMs in agriculture is equivalent to an additional 28 per cent tariff.

An important concern with NTMs is that even when set in a non-discriminatory manner, they may end up having discriminatory effects. Penello (2014) shows that their discriminatory effect may end up hurting the poorest countries and exacerbate income inequality between countries. Focusing on sanitary and phyto-sanitary (SPS) measures imposed by European countries in the agricultural and food sector, the study finds that each additional SPS measure leads to a reduction in exports from low-income countries that is almost twice as large as the reduction in exports from the rest of the world. So even if the motivation behind the imposition of NTMs may not be protectionist and motivated by health or environmental concerns, the increase in the cost of exporting for low-income exporters associated with the measure is larger than for other exporters, which leads to a redistribution of market share away from the poorest countries.

To overcome this problem Murina and Nicita (2017) examine the role that can be played by Preferential Trade Agreements (PTAs) between high and low-income countries. The idea is that the stronger impact of NTMs on exports from low-income countries is explained by the weaker capacity of firms in low-income countries to comply with

the technical or sanitary and phyto-sanitary requirements imposed by NTMs in high-income countries. PTAs between high and low-income countries often have technical assistance components to address this lack of capabilities in low-income countries, including in PTAs signed by the European Union. Murina and Nicita (2017) show that when low-income countries have a PTA with the European Union, the negative effect of the NTM in the European Union is reduced. This result suggests that promoting the inclusion of technical assistance in PTAs in order to address the discriminatory impact of NTMs on low-income exporters is one way through which trade policy can address the potential increase in between country income inequality associated with the increase in the prevalence of NTMs.

In a similar vein, Nicita and Seiermann (2016) call for more technical assistance and "aid for trade" granted to least developed countries to overcome the barriers imposed on their exports by NTMs in rich countries. They point out that most G20 countries have schemes in place that provide duty free access to least developed countries. Even if rules of origin associated with duty free access in some G20 countries are quite restrictive and the exceptions to duty free access occur in products in which low-income countries have a comparative advantage, the removal of all tariff barriers would increase Least Developed Country (LDC) exports by only $10 billion. On the other hand, the removal of the cost imposed by G20 NTMs on low-income countries exporters, through technical cooperation and "aid for trade" would increase their exports by more than $20 billion. If SDG 17.11, which aims at doubling LDCs global export share by 2020 is to be achieved, a boost to technical assistance and "aid for trade" towards LDCs is needed, especially in building capacities to meet product standards and other NTMs. This would not only help to ensure that SDG 17.11 is reached, but it will help reach SDG 10 as well.

As discussed in the previous chapter an important concern when countries integrate global markets is that the increased opportunities are only offered to large and highly productive firms, which then leads to increases in within-country inequality. There is a need to ensure that "aid for trade" initiatives targeting SDG 17.11 does not hurt the objective of SDG 10 of reducing income inequality within countries. To help reach these two goals, the "aid for trade" to LDCs should pay particular attention to helping small and medium size firms as well as women entrepreneurs. This issue is raised again at the end of the chapter.

In addition to addressing regulatory and government measures imposed by countries to respect public policy objectives so as to minimize their impact on trade-related inequality between or within low-income countries, the matter of private standards is becoming increasingly relevant. Private standards, e.g. certain product quality standards or product characteristics demanded by value-chain managers or retailers, impose a similar challenge as NTM measures to exporters in low-income countries, the difference being that private standards do not rely on government regulation of safety, health or

technical concerns, but on the taste and preferences of consumers in global markets. Like NTMs and government- imposed trade regulation, private standards are likely to be relatively costlier for firms in low-income countries, particularly when they are required to get certified for standards by third-party certifiers. This creates a wedge between large and highly productive firms that have the means to adopt the private standards and small and less productive firms which may be left outside of global markets. Thus, private standards, like NTMs and other trade regulations can lead to lower participation in global trade and in turn to increases in both between- and within-country inequality.

As regards inequality, a type of private standard that may transmit the impact from trade more directly to changes in within-country inequality involves Voluntary Sustainability Standards (VSS). The United Nations Forum on Sustainability Standards (UNFSS)[8] defines VSS as "standards specifying requirements that producers, traders, manufacturers, retailers or service providers may be asked to meet, relating to a wide range of sustainability metrics, including respect for basic human rights, worker health and safety, the environmental impacts of production, community relations, land use planning and others." Like Sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT) measures, VSS address product quality and attributes, but VSS also set standards for production and processing methods. Today, there are more than 240 VSS in more than 80 sectors and 180 countries (UNFSS, 2018).

The idea of VSS is to introduce economic incentives for firms to adopt production processes that are healthier, more respectful of workers, the environment and other socio-economic objectives that consumers, and producers as global citizens, care about. The majority of VSS aim at reducing the potentially negative impact of agro-forestry and fishery production or low-tech manufacturing in developing countries on local and global development challenges such as child labour, better wage to primary-sector producers, loss in biodiversity, among others (Table 1). Since 2016, global firms increasingly see VSS as a tool to capture market share in dynamically growing sectors by demonstrating that they contribute to the achievement of the SDGs (UNFSS 2018, UNFSS 2016, WWF 2017). Figure 15 shows the number of requirements (covered by at least one VSS) that directly speak to this goal and its associated targets.

[8] The UNFSS is an establishment under the coordination of 5 UN agencies, FAO, ITC, UNCTAD, UN Environment, and UNIDO. UNFSS functions through regular exchange of information and forward plans on VSS-related policy activities by pooling resources in order to synchronize efforts in ensuring 'policy coherence, coordination and collaboration'. This cooperative effort is mainly represented through: 1) Informed policy dialogue; 2) Research and analysis; 3) Support for national initiatives. UNCTAD serves as the Secretariat of UNFSS

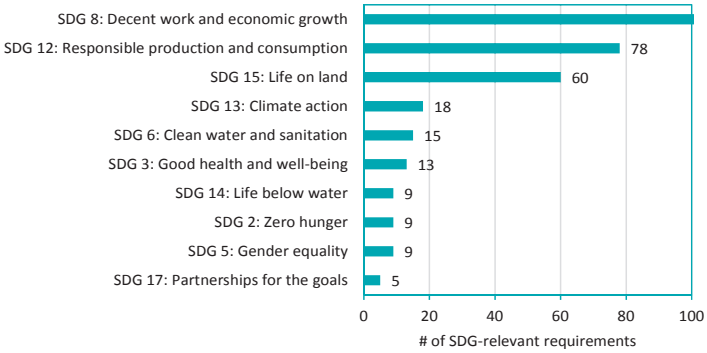
Table 1. Issues related to sustainable development addressed by VSS

ISSUE AREA	Specific Issues
Environmental sustainability	(e.g.) Animal Welfare, Biodiversity, Carbon & Climate Change, Forest Management, Organic production, Renewable energies, Soil management, Use of Chemical Substances, Waste management, Water management
Social development	(e.g.) Child labour, Collective bargaining, Discrimination at work, Freedom of association, Gender issues, Health and safety at work, Human Rights, ILO 8 core conventions, Local communities, Work and labour rights, Living wages
Ethics	(e.g.) Anti-bribery, Anti-corruption, Business relationships, Due-diligence assessments, Gifts, Political contributions

Source: Sustainability Map (International Trade Centre).

Note: The above is a non-exhaustive list of developmental issues addressed by the ITC Sustainability Map database which covers 241 VSS applicable to more than 80 sectors and 180 countries.

Figure 15 Goal-To-Goal Comparison of VSS and SDGs



Source: UNFSS 2018.

Note: Using the ITC Sustainability Map database; Benchmarking 10 selected SDGs against the requirements of the 122 VSS in the sample, the analysis reveals a significant potential to create institutional complementarities between VSS and the SDGs.

The economic rationale for VSS is linked to the existence of asymmetric information regarding production processes. The markets for environmentally safe or socially responsible goods may not exist if producers that are respectful of the environment and other social goals associated with SDGs cannot credibly convey this information

to consumers who care about how products are made. Setting of sustainability standards, labelling and third-party certification schemes through VSS are the private sector response to this market failure.[9] For example, the theory of labelling shows that the introduction of this type of schemes improves welfare in both low-income producing and high-income consuming countries as they help provide information in a market that needs it (Podhorsky, 2013).

However, there is not enough evidence that VSS have genuinely contributed to the improvement of living conditions of developing-country producers, for the following reasons. First, the impact of VSS adoption on local producers is highly context specific. Labelling and certification costs faced by low-income country producers can be quite high, which means that labelling may not necessarily increase welfare for certified farmers even if they receive higher prices. In a study of a Fair Trade scheme in Guatemala de Janvry et al. (2014) report certification costs as high as $1500, with expected profits from participation in the Fairtrade coffee cooperative close to zero. More generally, non-certified growers are often too poor to afford certification. If the introduction of private standards ends up hurting the poorest of the poor, this will lead to undesirable increases in income inequality at the very bottom of the income distribution. Dragusanu and Nunn (2018) find that certified coffee producers in Costa Rica do receive higher prices, but that skilled growers benefit the most from certification, suggesting that attention should be paid to how gains are distributed to achieve SDG 10.

Second, imposing certain standards on certified firms, but not others, can also have unintended consequences. Bad practices may simply be displaced from certified to non-certified firms, without changing the aggregate environmental or social problem. In some cases, certification can even make things worse. Basu and Zarghamee (2009) show how consumer boycotts in high-income countries of products produced in low-income countries with techniques that are not aligned with SDGs, such as the use of child labour, can lead to more unsustainable production, not less.

Lastly, the proliferation of multiple VSS within a same sector (e.g. coffee) focusing on similar issues without interoperability creates confusion for producers, buyers, and consumers. The current multiplicity of VSS makes it difficult to keep track of them, which ends up increasing costs related to information and certification. It can also lead to a "race to the bottom" in terms of certification requirements, as different schemes compete to attract producers into their standards. The outcome of this race-to-the-bottom among multiple VSS agencies can lead to less, not more, sustainable production as shown by Fischer and Lyon (2014). There is an emerging need to increase transparency and seek mutual recognition and harmonization across sustainable standards and labels.

[9] VSS can act as mechanisms that consider impacts on sustainability associated with the production of goods and services and help consumers that care about dimensions of production that cause environmental harm or violate norms and social preferences to allocate their expenditures to products that do not do so (Auriol & Schilizzi, 2015; Baron, 2011; Jahn, Schramm & Spiller, 2005; Podhorsky, 2013).

In practice, it is difficult to assess quantitatively whether the benefits of VSS adoption outweigh the potential unintended effects. While the large empirical literature suggests that price, quality and workers' welfare in certified firms is higher than in non-certified firms, the majority of studies shows simple correlations (de Melo and Olarreaga, 2019). Due to limitations in data availability, it is usually not possible to establish the causal impact of certification on prices, quality and working conditions, which hinders the public-sector policy making in this area.[10]

The emphasis so far has been essentially on the impact of trade policies of high-income countries and market access of low-income countries to their markets. Trade policies between low-income countries, and access to their respective markets also have an impact on income inequality within low-income countries as they tend not to have a homogeneous impact on the opportunities offered to different firms and their workers.

In a study of how market access barriers including tariffs and NTMs, faced by Peruvian exporters in Latin America, Fugazza et al. (2019) find that the imposition of new barriers in destination markets hurts small exporting firms, by reducing the likelihood that they will export to that market, as well as the value of their exports. Surprisingly, the increases in protection in destination markets helps the large exporting firms, by increasing their likelihood of continuing to export and the value of their exports. Fugazza et al. (2019) show that this is consistent with the idea that large firms when facing new barriers are able to concentrate their exports on a few core products that benefit from the reallocation of resources within the firm, whereas small firms that tend to export a single product, do not have that margin of adjustment. In any case, their results suggest that when countries face a deterioration of their market access to foreign markets, this tends to hurt small exporters more than large exporters. In this case, increases in trade protection often leads to a stronger concentration of foreign exports in the hands of few very large firms.

Thus, while policy measures that restrict imports can reduce income inequality at home as smaller and less productive firms are able to participate in the domestic market, the same policy measures generally hurt small foreign firms, therefore creating problems of income inequality abroad. If governments individually set trade policy to reduce income inequality, this is likely to be inefficient from the world point of view, as governments will not consider the impact of their actions on income inequality in other countries. This highlights the importance for cooperation in trade policy at the bilateral, regional or multilateral level to address issues associated with income inequality.

[10] To tackle the data challenge, UNCTAD has developed a VSS "Perception" Assessment Toolkit to help the government systematically collect data and fact-based information on the preparedness of different stakeholders towards adopting a VSS in a specific agricultural value chain. The outcome of this assessment can help policy makers detect areas where policy could play a role in mitigating unintended effects of VSS.

Social issues such as income inequality are currently not addressed at the multilateral level in the World Trade Organization (WTO). Bilateral agreements however often address such issues. Many include labour clauses, which do not focus on income inequality issues directly, but promote the respect of workers' rights, or gender equality. The inclusion of these types of clauses in trade agreements is sometimes seen as hidden protectionism in high-income countries towards exports from low-income countries with perhaps lower labour standards (Bhagwati, 1995). Some recent trade agreements introduce gender-specific chapters to overcome trade obstacles to the fuller and more equal participation of women.

Carrère et al. (2018) use a new dataset of labour clauses in bilateral and regional trade agreements to show that if anything, the inclusion of labour clauses in bilateral and regional trade agreements tends to increase, not reduce, exports from low-income country to high-income countries. This is consistent with the literature showing that better working conditions increase labour productivity in low-income countries, as well as demand for those products in high-income countries. Unfortunately, the inclusion of labour clauses in trade agreements among low-income countries is very rare. Carrère et al. (2018) find that less than 3 per cent of agreements among low-income countries have social clauses that have any enforcement or deep cooperation provision. The trend towards including this type of provision in trade agreements among low-income countries is not growing either. Low-income countries concerned with the impact of trade and trade agreements on income inequality should be more open to including this type of chapter in trade agreements they negotiate among themselves.

Improving the access of small firms to global markets is also likely to help reduce income inequality as small firms generally employ mostly unskilled labour. In a sample of low-income countries, and using labour survey data provided by the World Bank's I2D2 dataset, Cruz et al. (2018) show that the share of skilled workers (defined as those with completed secondary education) in small firms (defined as those with less than 10 employees) is on average 25 per cent. In large firms, the share of skilled workers doubles. By improving the relative access of small firms to global markets, the relative demand for unskilled workers increases, reducing the wage gap between skilled and unskilled workers.

One promising way of improving the access of small firms to global markets is to promote online trade. Online platforms significantly reduce the cost of reaching foreign consumers for firms that do not have the capacity or the volume to otherwise promote their products in foreign markets. There is evidence suggesting that online markets and the services they offer are particularly helpful for small firms, and have little impact on large firms (Hui, 2019). The result of the reduction in the cost of exporting on online platforms in favour of small firms is that almost all firms participating on online platforms sell to foreign consumers (see Figure 16). This must be compared to the overall share of firms

participating in global markets that was also reported in Figure 12. The differences are striking. While only a few large firms are able to export offline, almost all firms on online platforms are able to export.

Figure 16: Share of exporting firms online and offline

Source: Lendle and Olarreaga (2017) with data from eBay and World Bank's Enterprise Survey.

According to Cruz et al. (2018), the rapid increase in online exports in some low-income countries has contributed to the decline in the wage gap between skilled and unskilled workers. The economic impact of their estimates is relatively small because online trade is still relatively small. However, it has been growing at a pace 7 times faster than traditional trade over the last decade. Their results suggest that if this trend continues, online platforms have the potential to make trade more inclusive by allowing smaller firms to access global markets.

Export promotion efforts also often focus on small firms. It is sometimes suggested that this may be a waste of resources given that small firms do not have the ability to compete in global markets. However, the rapid growth in online exports by small firms has challenged this. Moreover, there is strong evidence suggesting that focusing export promotion efforts on small firms is the right strategy. Volpe and Carvallo (2010) disentangle the impact of Prochile's programmes on exports of Chilean exporting firms across their size distribution. They find that small firms benefit more from export promotion than large firms. This result is confirmed in a sample of Argentinean exporting firms in Volpe, Carballo and Garcia (2012). In the same vein, De Falcis et al. (2018) find that allocating a higher export promotion budget to *new* exporters raises the number of exporters. Interestingly, the share of the budget allocated to small firms also delivers this result, whereas when a large share of the budget is allocated to large firms, the number of exporters declines.

All the above papers used firm-level data on exporting firms. Often a relatively small exporting firm may be a relatively large firm in the domestic market. This creates complications in the analysis. To overcome this, Cruz (2014) uses firm-level customs data in Brazil and provides evidence that suggests that export promotion helps medium-size firms enter export markets. This is also consistent with Olarreaga, Sperlich and Trachsel (2019) who find that in a sample of around 100 export promotion agencies in high and low-income countries, a broader focus of export promotion on medium-size firms rather than large firms is associated with a higher GDP per capita. Combining these results with the results of Volpe et al. (2010), Volpe et al. (2012) and De Falcis et al. (2018), it can be inferred that export promotion helps medium-size firms enter export markets and small exporting firms diversify across products and markets. Thus, targeting medium size domestic firms or small exporters with export promotion efforts seems to be an efficient way of allocating export promotion resources. It is also a way of ensuring that gains from trade are better distributed.

To summarize, it was shown in this chapter that trade policies and institutions can affect income inequality both within and across countries. They can therefore be a powerful tool to achieve the targets of SDG 10. Market access barriers faced by exporters in low-income countries can affect both between- and within-country income inequality. NTMs, in particular, even if set in a non-discriminating manner, tend to discriminate against low-income countries. In addition, they also discriminate against the smallest firms forcing them to drop out of export markets or reduce their market share, which tends to increase within-country income inequality. Technical assistance in bilateral or regional trade agreements to address NTMs, as well as the inclusion of labour clauses, can help address these barriers and their consequences on income inequality.

Private institutions, such as VSS, can also help address income inequality. Some of them, such as the fair-trade schemes, are probably too small to have a significant impact at this stage. Even if they were large enough, it would also be naive to consider them as the silver bullet to address poverty and income inequality associated with participation of low-income countries in global markets. These schemes can have unintended consequences and therefore need to be accompanied with adequate policies, and programmes that directly target poverty and income inequality.

Finally, improving small firms' access to global markets can help make international trade more inclusive. Both online platforms and export promotion programmes that target small firms appear effective tools to address the barriers faced by smaller firms in world markets. By doing so they provide equal opportunities to both unskilled-intensive small firms and skilled-intensive large firms in global markets, which then contributes to reducing income inequality.

5. A TRADE POLICY AGENDA TO HELP REDUCE INEQUALITY

The objective of this chapter is to propose a trade policy agenda to help reduce income inequality. The discussion is organized around three pillars that aim at designing trade policies and institutions that provide equal opportunities to firms, workers and countries. Each of these three pillars is discussed in turn.

5.1 Equal opportunities for firms

The first pillar is providing equal opportunities to firms. As discussed in earlier chapters, the high concentration of market power in global markets has implications for how trade policy affects economic performance and income inequality. The same non-discriminatory trade barrier affects differently small and large firms. This differentiated impact in turn affects the distribution of income. Curbing the market power of large firms and allowing small and medium size firms to participate in global markets should be part of any package trying to make trade more inclusive.

There are five promising avenues to provide equal opportunities to small and large firms in global markets. First, addressing non-tariff measures and non-tariff barriers. It requires promoting transparency in tariffs, NTMs and the processes linked to regulations. Gathering such information, in particular NTMs, is very costly and complex. Transparency initiatives such as the Transparency in Trade Initiative by the African Development Bank (AfDB), International Trade Centre (ITC), UNCTAD and the World Bank as well as the "TOP 25 Markets" project by UNCTAD and the World Bank aim to fill this gap. Under the coordination of UNCTAD, comprehensive information on NTMs covering more than 90 per cent of world trade have been collected and disseminated (trains.unctad.org). This provides traders as well as policy makers and researchers with the information about all requirements for specific products. UNCTAD is also supporting regional institution, such as the African Union, in developing tools and systems to address non-tariff barriers that can arise in the conduct of regional trade under preferential arrangements. Transparency in the requirements for VSS is equally important. Smaller producers need the availability of information about standards and their possibility to comply with and getting certified producers.

Trade portals (see e.g. https://businessfacilitation.org/) aim to provide transparency on processes linked to regulations. Indeed, this concerns also targeted national efforts to reduce overly bureaucratic and cumbersome domestic regulations that often impair SME investments in developing countries. Unlocking business opportunities for SME´s through more transparent and pragmatic national regulations are often overlooked and need to be addressed.

Second, the promotion of online trade has the potential for levelling the playing field between small and large firms in global markets. By providing a relatively cheap way of creating reputation through online platforms' feedback mechanisms and providing services that particularly address barriers faced by small firms (such as the global shipping programme put in place by eBay or Amazon for instance), online platforms disproportionately help reduce the costs faced by small firms when participating in global markets. Moreover, e-commerce as the potential to be a powerful tool for women entrepreneurs, but for this to be realized it is essential to bridge the digital divide for women. However, it is worth noting that many online platforms have a dual role: a marketplace and retailer at the same time. Therefore, they are in a position to potentially impose disadvantageous terms and conditions on sellers competing with their products on their platform. In this regard, online platforms should be required to provide services in a fair and non-discriminatory manner. India, for example, has instituted new e-commerce rules that took effect on 1 February 2019.[11] The new rules are expected to prevent anticompetitive and abusive practices, as well as predatory pricing by big e-commerce platforms to the detriment of local small and medium sized online traders.[12]

Online cross-border trade remains limited compared to traditional trade, but it has been growing fast in recent years, and it is expected to double over the next 5 years. Importantly, as highlighted in UNCTAD (2015) encouraging online trade also requires the adequate transport and logistic infrastructure, as well as reliable access to the internet. It is also equally important to ensure that online platforms are not abusing their own market power in developing and developed countries. In addition to a comprehensive domestic regulatory framework for online platforms, regulations at the international level may be needed to ensure that the behaviour of some of these large platforms (Amazon, eBay or Alibaba) is not hurting more than helping small firms through abusive pricing for example. Furthermore, to increase trust consumer protection in e-commerce needs to be appropriately ensured.

The third avenue for equal opportunities for firms of different size is to encourage the targeting of small and medium size firms by export promotion programmes and increase their participation in international trade fairs. This could also be combined with the promotion of online trade. Export promotion has been seen as particularly efficient at encouraging medium size firms to enter export markets and small exporters to diversify their product and market portfolio. There is evidence that the efficiency of this is leveraged when programmes *explicitly* target small and medium size firms. It has also been shown that the targeting of medium size firms by export promotion programmes is associated with higher levels of GDP per capita.

[11] Press Note No. 2 (2018 Series), Government of India, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion, *Review of the policy on Foreign Direct Investment in e-commerce.*

[12] UNCTAD secretariat background note on "Competition Issues in the Digital Economy" (upcoming) for the 18th session of the Intergovernmental Group of Experts on Competition Law and Policy to be held on 10-12 July 2019.

The fourth avenue involves promoting the inclusion of technical assistance and "aid for trade" programmes in bilateral and regional agreements that help firms in low-income countries, in particular small and medium size firms, to overcome barriers imposed by NTMs. Such programmes should also target barriers that prevent women from fully participating in international trade. There is evidence that the technical assistance provided by the European Union within European Union bilateral trade agreements has helped exporters in low-income countries, and in particular LDCs, to overcome these barriers. Other agreements between high- and low-income countries should encourage this type of assistance and cooperation to ensure that all firms benefit from trade agreements

The fifth avenue for equal opportunities for firms is to foster competition in national and regional markets. This requires effective competition law enforcement. National and regional competition authorities may investigate and sanction anti-competitive conduct by dominant firms. Considering the challenges faced by competition agencies of developing countries and LDCs in competition law enforcement, there is a need for promoting international and regional cooperation in competition law enforcement. For example, the Common Market for Eastern and Southern Africa (COMESA) Competition Commission is the regional entity in the COMESA region, which has the authority to review mergers having an effect within the common market.[13]

Another way of promoting competition is by introducing clauses, which may facilitate cooperation and exchange of information for law enforcement between relevant authorities, in competition chapters of bilateral and regional trade agreements. National competition authorities may not have the right incentives to restrict the abusive behaviour of their large exporters or importers in international markets. Moreover, many low-income countries do not have well-functioning competition authorities. Technical assistance and cooperation among trading partners can help internalize these types of externalities in order to ensure that large firms from high-income countries are not the only ones benefiting from international trade.

Importantly, addressing international competition issues may require also addressing cooperation in other areas. Liu, Mian and Sufi (2019) argue that part of the increase in market power in the United States has to do with the low-interest rate environment that provides an edge to large firms relative to new entrants and small firms. This implies that in the current low-interest rate environment there is the need to adopt a more aggressive competition. This recommendation should also apply in the case of large inflows of capital that would keep interest rates low.

[13] https://www.comesacompetition.org/

5.2 Equal opportunities for workers

The second pillar involves bringing equal opportunities for participating in global markets to all workers, including women and youth. Three potential avenues can be considered to address this. First, the introduction of labour clauses with the objective of promoting workers' rights in trade agreements, particularly in trade agreements involving low-income countries. Contrary to what is sometimes suggested, trade agreements with labour clauses tend to lead to more, not less, exports from low to high-income countries, because of higher worker productivity in healthier work environments, as well as more demand by global consumers for products produced in accordance with workers' basic rights. It has also been shown that the inclusion of labour clauses in trade agreements is also correlated with fewer violations of workers' rights in low-income countries (Raess and Sari, 2018). Labour clauses are sometimes criticized as a form of hidden protectionism (because their imposition on some low-income countries raises their production costs and reduces their competitiveness relative to high income countries where labour standards are already high). But more importantly they also seem to improve workers' welfare and open market opportunities for exports because many consumers refuse to buy products from countries with poor labour rights performance. On a related matter, the inclusion of a gender chapter in trade agreements could help address (with targeted technical assistance programmes) gender inequality originating from economic integration.

The second approach for introducing equalizing outcome for workers in low-income countries is promoting the use of private standards such fair trade or voluntary sustainability standards. However, the evidence of their effectiveness in increasing living standards among the poorest individuals in low-income countries is rather mixed. A necessary condition for this type of mechanism to have the intended consequences is that there is a sufficiently large demand for certified products. This requires transparent and credible agencies, and accessible certification costs for producers. The proliferation in the number of standard and certifying agencies is not a step in the right direction, and more cooperation between the public and private sector is needed to correctly regulate the evolution of private standards and enhance their credibility. More importantly, the introduction of these standards may have unintended consequences on those left outside the certification system. These are often individuals or households that are the most in need of assistance. It is therefore important that accompanying measures and policies and financing tools be put in place when these standards are introduced.

Third, investment in education and training of poor households which are at the margin of these types of standards is another way equalize workers' benefit from global markets. Many sustainability initiatives provide training, as well as scholarships to the children of certified producers. While these are initiatives to encourage progress, they can also further increase the gap between certified and non-certified households. Thus, a third avenue to explore is for governments to ensure that education opportunities and training

is provided to all, and not only to those benefitting from private initiatives. As shown by Dynarski et al. (2018), this does not always require a lot of additional investment. The provision of information regarding education and training opportunities to excluded individuals is often not expensive and can result in very large changes in education outcomes, and therefore in social mobility and long-term income inequality. This could have large implications for reducing gender inequality. Solutions through credit markets, universal minimum income, or efficient safety nets need to be considered as well.

5.3 Equal opportunities for countries

The third pillar has to do with providing equal opportunities to trade to all countries, which would obviously have an important impact, not only on inequality between countries, but also within country. This third pillar provides a more important role to transnational governance. A key issue is safeguarding the open, transparent and predictable multilateral trading system (target 10 of SDG 17) and ensuring that in any reform process that it remains inclusive and becomes more "equitable", including in terms of updated, modernized and suitable special and differential treatment (target 10.A of SDG 10) directed at attenuating the adjustment costs falling on firms and workers and at augmenting the capacities of developing countries to produce, trade and compete; addresses meaningful market access opportunities that goes beyond tariffs to also address non-tariff barriers; removal harmful fisheries subsides as per SDG goal 14; or addressing tariff escalation and trade distorting subsidies in agriculture; and improving access conditions for LDCs to boost their exports (targets 11 an 12 of SDG 17).

Exploiting existing trade facilitation agreement and frameworks to reduce trade costs for SMEs will remain important. E-commerce and online platforms have great potential for levelling the playing field between small and large firms in accessing global markets. Regulation at the international level may be needed to ensure that large e-commerce platforms do not operate in a monopolistic manner, for example through exclusivity agreements or abusive pricing. Equally important, development assistance linked with trade commitments, as demonstrated in the WTO trade facilitation agreement, is also an option. In addition to facilitating trade, aid-for-trade should be aimed to increasing productive capacity. In this regard, foreign investments should play a more important role in increasing long-lasting productive capacity in developing countries, particularly LDCs and small island developing States.

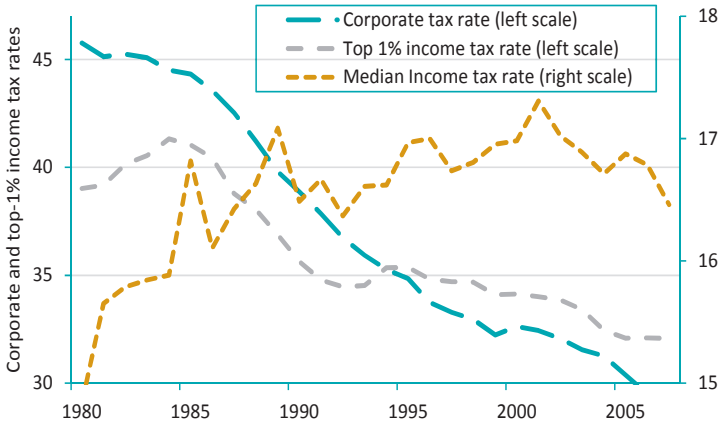
The impact that bilateral and regional trade agreements can have in promoting more equal opportunities for workers and firms has been discussed above. Regional trade agreement as well as South-South cooperation and regional economic integration processes provide a viable avenue to developing countries in boosting regional production and trade in support of industrialization, growth and inclusive development. New steps

being taken in this direction include the signing, ratification and entry into force at the end of May 2019 of the Agreement establishing the African Continental Free Trade Area.

A final area for cooperation at the multilateral level has to do with taxation. Egger, Nigai and Strecker (2019) examine the effects of globalization on the distribution of taxes in a sample of high-income countries. They find that prior to 1994 countries that were more open with regards to trade and factor mobility, also taxed more progressively high-income individuals. They explain this with the fact that the reallocation of resources implied by globalization requires adjustment, which itself increases the demand for the provision of public goods. To satisfy the larger demand for public goods in more open economies higher taxes are needed (see Rodrik, 1998). Prior to 1994, the higher taxes in more open economies were collected on the high-income individuals. After 1994, the intensification of globalization and the higher mobility of both workers and capital imposed a limit on the extent at which high-income individuals could be taxed. This led to a significant decline in the taxes paid by the top 1 per cent, while taxes paid by the middle class increased (see Figure 17).

In other words, before the 1990s tax redistribution was used to mitigate the adverse effects of trade openness on income inequality. After the 1990s, the relatively greater mobility of top earners and corporations across countries led to a reduction in their income tax rate, while leaving the needs for public goods unchanged. As such, the middle class paid the bill. Thus, part of the recent increase in after tax income inequality is due to a less redistributive tax system that is itself induced by globalization. Cooperation at the global level, on income taxation with the aim of harmonizing and reducing the incentives for tax-avoidance may help bring back the original redistributive nature of tax systems. This will not only directly help reduce after-tax income inequality, but also better fund some of the complementary programmes that are needed to ensure that international trade is consistent with SDG 10.

Figure 17: Corporate taxation and labour income taxation for top 1 per cent and median worker



Source: Egger, Nigai and Strecker (2019).

6. CONCLUDING REMARKS ON POLICY ORIENTATION

Trade reforms have contributed to reducing income inequality between countries. They have, however, also been accompanied by a polarization of the distribution of income within many countries. The latter is possibly the main cause behind the current backlash against international trade. Resorting to protectionism to reduce trade is not a solution to addressing the adverse distributional consequences of trade. Trade is a catalyst for economic growth and development as recognized in the SDGs. Accordingly, to respond to inequality, rather than focusing exclusively on productivity and economic growth, policymakers need to focus on encouraging trade and on ensuring that the benefits brought by international trade must become more inclusive and responsive to the imperatives laid out in the Sustainable Development Goals.

Two broad policy orientations emerge. First, in a context of rising inequalities within countries, the distributional effects of trade must be a first-order concern. Trade policy should not only pursue efficiency gains but also aim to help small firms and producers; marginalized workers, women and youth; and poorer countries to more equally benefit from international trade. Second, what is needed are not policy actions which restrict trade but policies that would make international trade more inclusive so to give access to a larger number of especially marginalized peoples, firms and countries to the benefits offered by global markets.

BIBLIOGRAPHY

Acemoglu D (2002). *Technical Change, Inequality and the Labor Market*. Journal of Economic Literature 40, 7-72.

Agrawal A, Lacetera N and Lyons E (2016). *Does standardized information in online markets disproportionately benefit job applicants from less developed countries?* Journal of International Economics 103, 1-12.

Akerlof G and Yellen J (1990). *The fair wage-effort hypothesis and unemployment* Quarterly Journal of Economics, 105: 255-283.

Amoranto G, Brooks D and Chun N (2010). *Services Liberalization and Wage Inequality in the Philippines*. ADB Economics Working Paper Series 239.

Arnold J, Javorick B, Lipscomb M and Mattoo A (2016). Services reform and manufacturing performance: evidence from India. Economic Journal (126), 1-39.

Atkin D (2016). *Endogeneous skill acquisition and export manufacturing in Mexico*, American Economic Review 106(8), 2046-2085.

Autor D, Levy F and Murnane R (2003). *The Skill Content of Recent Technical Change: An Empirical Exploration*. Quarterly Journal of Economics 118, 1279-1334.

Baland J-M and Duprez C (2007). Made in Dignity: The Impact of Social Labels. Working Papers 1001, University of Namur.

Baland J-M and Duprez C (2007a). Are Fair Trade Labels Effective Against Child Labour? CEPR discussion paper 6259.

Balineau G (2013). Disentangling the Effects of Fair Trade on the Quality of Malian Cotton, World Development 44(C), 241-255.

Bas M and Paunov C (2019). What gains and distributional implications result from trade liberalization? UNU-MERIT working paper series 2019-003.

Baumgartner D (2013). *Exporters and the rise in wage inequality: evidence from German link employer-employee data*. Journal of International Economics 90, 201-217.

Bernard A and Jensen B (1997). Exporters, Skill Upgrading, and the Wage Gap. Journal of International Economics 42, 3-31.

Bhagwati J (1995). *Trade Liberalization and 'Fair Trade' Demands: Addressing the Environmental and Labour Standards Issues.* World Economy 18(6), 745-759.

Bourguignon F (2016). The globalization of inequality. Princeton University Press.

Burnstein A and Vogel J (2017). *International trade, technology and the skill premium,* Journal of Political Economy 125(5), 1356-1412.

Burnstein A, Morales E and Vogel J (2016). Changes in between-group inequality: Computers, occupations and international trade. UCLA, Mimeo.

Carrère C, Olarreaga M and Raess D (2018). Labor clauses in trade agreements: worker protection or protectionism? University of Geneva, mimeo.

Cashore B (2002), "Legitimacy and the Privatization of Environmental Governance: How Non-State Market-Driven (NSMD) Governance Systems Gain Rule-Making Authority". Governance 15(4), 503-529.

Cassette A, Fleury N and Petit S (2012). Income Inequalities and International Trade in Goods and Services: Short- and Long-Run Evidence. The International Trade Journal 26(3), 223-254.

Chisik R and Emami Namini J (2017). International trade and labor market discrimination. Ryerson University, mimeo.

Collier P (2007). The bottom billion. Oxford University Press.

Crozet M and Milet M (2017). The servitization of French manufacturing firms. In Factory-free economy: outsourcing, servitization, and the future of manufacturing, by Lionel Fontagné and Anne Harrisson (editors), Oxford University Press.

Cruz M (2014). Essays in trade and development economics. Phd dissertation: Graduate Institute of International and Development Studies, Geneva.

Cruz M, Milet E and Olarreaga M (2018). Online exports and the skilled-unskilled wage gap. University of Geneva, mimeo.

CUTS (2018). Internationalisation of micro and small enterprises through e-commerce. CUTS International, Jaipur.

Danziger E (2017). Skill acquisition and the dynamics of trade induced inequality. Journal of International Economics 107, 60-74.

De Falcis E, Rollo V, Solleder O and Ticku R (2019). What bang for the buck? Export promotion and trade extensive margin. International Trade Center working paper series 02-2018.

De Loecker J, Goldberg P, Khanhelwal A and Pavcnik N (2016). Price, markups and trade reform. Econometrica 84(2), 445-510.

De Melo J and Olarreaga M (2019). Trade related institutions and Development. In Economic Development and Institutions, by Jean-Marie Baland, François Bourguignon and Jean-Philippe Platteau, and Thierry Verdier (Eds.). Oxford University Press.

Dinopoulos E and Segerstrom P (1999). A Schumpeterian Model of Protection and Relative Wages. American Economic Review 89:3, 450-72.

Dix-Carneiro R (2014). Trade Liberalization and labor market dynamics. Econometrica 82, 825-885.

Dragusanu R, Giovanucci D and Nunn N (2014). The Economics of Fair Trade. Journal of Economics Perspectives 28(3), 217-236.

Dragusanu R and Nunn N (2018). The Impacts of Fair Trade Certification: Evidence from Coffee Producers in Costa Rica. NBER working paper 24260.

Dynarski S, Michelmore K, Libassi CJ and Owen S (2018). Closing the gap: the effect of a targeted, tuition free promise on college choices of high-achieving, low-income students. NBER working Paper 25349.

Ederington J, Minier J and Troske K (2009). Where the Girls Are: Trade and Labor Market Segregation in Colombia. IZA Discussion Paper No. 4131.

Egger H, Egger P and Kreickemeier U (2013). Trade, wages and profits. European Economic Review 64, 332-350.

Egger H and Kreickemeier U (2009). Firm heterogeneity and the labor market effects of trade liberalization. International Economic Review 50(1), 187-216.

Egger H and Kreickemeier U (2012). Fairness, trade and inequality. Journal of International Economics 86, 184-196.

Egger P, Nigai S and Strecker N (2019). “The Taxing Deed of Globalization.” American Economic Review 109(2):353-90.

Fagjelbaum P and Khandelwal A (2016). Measuring the unequal gains from trade. Quarterly Journal of Economics 131(3), 1113-1180.

Feenstra R and Hanson G (1996). Foreign Investment, Outsourcing and Relative Wages. In R.C. Feenstra, G.M. Grossman and D.A. Irwin, eds., The Political Economy of Trade Policy: Papers in Honor of Jagdish Bhagwati. Cambridge, MA: MIT Press.

Feenstra R and Hanson G (1997). Foreign Direct Investment and Relative Wages: Evidence from Mexico’s Maquiladoras. Journal of International Economics 42 (3-4), 371-393.

Feenstra R and Hanson G (1999). The Impact of Outsourcing and High-Technology Capital on Wages: Estimates for the U.S., 1979-1990. Quarterly Journal of Economics, 114(3), 907-940.

Felbermayr G, Impulliti G and Prat J (2018). Firm dynamics and residual inequality in open economies. Journal of the European Economic Association 16(5), 1476-1535.

Fischer C and Lyon TP (2014). Competing Environmental Labels, Journal of Economics & Management Strategy 23(3), 692-716.

Freund C and Pierola M (2015). Exporter superstars. Review of Economics and Statistics 97(5), 1023-1032.

Fues T and GrimmS (2017). Low-income countries powers begin shaping sustainability standards. https://www.die-gdi.de/en/the-currentcolumn/article/low-income countriesern-powers-begin-shapingsustainability-standards-1/

Fugazza M, Mrazova M, Olarreaga M and Ugarte C (2019). On the heterogeneous effects of market-access barriers: Evidence from small and large Peruvian exporters. Mimeo, UNCTAD

Glickman L (2004). Buy for the Sake of the Slave: Abolitionism and the Origins of American Consumer Activism. American Quarterly 56(4), 889-912.

Goldberg P and Pavcnik N (2007). Distributional effects of globalization in developing countries. Journal of Economic Literature 45(1), 39–82.

Grossman G and Helpman E (2018). Growth, Trade and Inequality. Econometrica 86, 37-83.

Grossman G and Rossi-Hansberg E (2008). Trading Tasks: A Simple Theory of Offshoring. American Economic Review 98(5), 1978-1997.

Gupta A (2015). Effect of trade liberalization on gender inequality. Indian Statistical Institute, mimeo.

Harrison A, McLaren J and McMillan M (2010). Recent findings on trade and inequality. NBER working paper 16425.

Helpman E (2018). Globalization and Inequality. Harvard University Press.

Helpman E, Itskhoki O, Muendler M-A and Redding S (2017). Trade and Inequality: from theory to estimation. Review of Economic Studies 84, 357-405.

Helpman E, Itskhoki O and Redding S (2010). Inequality and unemployment in a global economy. Econometrica 78(4), 1239-1283.

Huber K and Winkler E (2019). All you need is love? Trade shocks, inequality and risk-sharing between partners. European Economic Review 111, 305-335.

Hui Xiang (2019). Facilitating Inclusive Growth Trade: Evidence from a Field Experiment. Management Science, forthcoming.

Janvry A de, McIntosh C and Sadoulet E (2015). Fair Trade and Free Entry: Can a Disequilibrium Market Serve as a Development Tool? The Review of Economics and Statistics 97(3), 567-573.

Jones R I (1971). A Three-factor Model in Theory, Trade and History. In J. Bhagwati et al., eds: Trade, Balance of Payments and Growth: Essays in Honor of C.P. Kindleberger. Amsterdam: High-income countries Holland.

Juhn C, Ujhelyi G and Villega-Sanchez C (2014). Men, women and machines: how trade impacts gender inequality. Journal of Development Economics 106, 176-193.

Kee H L, Nicita A and Olarreaga M (2009). Estimating trade restrictiveness indices. Economic Journal 119, 172–199.

Kinuthia B and Kulundu Manda D (2019). Exports, skills and wage inequality in Kenyan manufacturing firms. Mimeo, University of Nairobi.

Kinuthia B and Olarreaga M (2019). Exports, wages and the decline of labor unions: evidence from Kenya. Mimeo, University of Nairobi.

Kuznets S (1955). Economic growth and income inequality. American Economic Review 45(1), 1-28.

Lakner C and Milanovic B (2016). Global Income Distribution: From the Fall of the Berlin Wall to the Great Recession. World Bank Economic Review 30(2), 203-232.

Liu E, Mian A and Sufi A (2019). Low interest rate, market power and productivity growth. NBER working paper 25505.

Luo R (2017). Skill Premium and Technological Change in the very Long Run: 1300-1914. Discussion Papers in Economics 17/09, University of Leicester.

Maggi G, Mràzovà M and Neary P (2018). Choked By Red Tape? The Political Economy of Wasteful Trade Barriers. NBER Working Paper 24739.

Mayer T and Ottaviano G (2007). The happy few: the internationalization of European firms. Bruegel blueprint series vol. III.

Mehta A and Hasan R (2012). The effects of trade and services liberalization on wage inequality in India. International Review of Economics and Finance 23, 75-90.

Melitz M (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. Econometrica 71, 1695-1725.

Milanovic B (2016). Global Inequality: A New Approach for the Age of Globalization. Cambridge: Harvard University Press.

Murina M and Nicita A (2017). Trading with conditions. The effects of sanitary and phytosanitary measures on the agricultural exports from low-income countries. World Development 40(1), 168-181.

Nicita A, Olarreaga M and Porto G (2014). Pro-poor trade policy in Sub-Saharan Africa. Journal of International Economics 92, 252-265.

Nicita A and Seiermann J (2016). G20 policies and export performance of least developed countries. Policy issues in International Trade and Commodities Research Study Series no. 75. UNCTAD.

Niño-Zarazúa M, Roope L and Tarp F (2017). Global inequality: relatively lower, absolutely higher. Review of Income and Wealth 63(4), 661-684.

Olarreaga M, Sperlich S and Trachsel V (2019). Exploring the heterogeneous effects of export promotion. World Bank Economic Review, forthcoming.

Ottaviano G and Surevato D (2018). Market power and wage inequality in the new global economy. Bocconi University, mimeo.

Pande M (2017). The India Story: Impact of private sustainability standards on market access and sustainable development. UNCTAD research paper no. 9. United Nations, Geneva.

Pavcnik N (2002). Trade liberalization, exit and productivity improvements: evidence from Chilean plants. The Review of Economic Studies 69 (1), 245–276.

Pavcnik N (2017). The impact of trade on inequality in developing countries. Dartmouth, mimeo.

Penello Rial D (2014). Study of average effects of non-tariff measures on trade. Policy issues in International Trade and Commodities Research Study Series no. 66. UNCTAD.

Perry G and Olarreaga M (2007). Trade liberalization, inequality and poverty in Latin American. In F. Bourguignon and Boris Pleskovic, eds. Beyond Transition.

Pieters J (2018). Trade liberalization and gender inequality. IZA discussion paper.

Podhorsky A (2013). Certification Programs and High-income countries–Low-income countries Trade. Journal of Public Economics 108, 90–104.

Podhorsky A (2015). A Positive Analysis of Fair Trade Certification. Journal of Development Economics 116, 169–185.

Raess D and Sari D (2018). Do labor provisions in PTAs reduce labor rights violations? The role of institutionalized cooperation. Paper presented at the Workshop "Past and Future of Labor Provisions in the Context of Trade," Harvard Law School, August 31st.

Ravallion M (2018a). Inequality and Globalization: a review essay. Journal of Economic Literature 56(2), 620-642.

Ravallion M (2018b). What might explain today's conflicting narratives on global inequality? UNU-WIDER Working paper 2018/141.

Rodrik D (1998). Why Do More Open Economies Have Bigger Governments? Journal of Political Economy 106(6), 997-1032.

Rodrik D (2016). Premature deindustrialization. Journal of Economic Growth 21(1), 1-33.

Rodrik D (2018). New Technologies, Global Value Chains, and the Developing Economies. Pathways for Prosperity Commission Background Paper Series; no. 1. Oxford.

Smith A (2018). Trade and Inequality: educational and occupational choice matters. Boston University, mimeo.

Suominen K (2017). The silver bullet for fueling small business exports in the e-commerce area: a plurilateral on de minimis. Mimeo.

Surevato D and Ottaviano G (2019). Market Power and Wage Inequality in the New Global Economy. Paper presented at the Villars workshop on International Trade.

Thoenig M and Verdier T (2003). A Theory of Defensive Skill-Biased Innovation and Globalization. American Economic Review, 93(3):709-728.

UNCTAD (2015). Information Economy Report 2015: Unlocking the potential of E-Commerce for developing countries. UNCTAD/IER/2015.

UNCTAD (2018). Market access, trade and sustainable development: the labor market channel. Developing Countries in International Trade Studies. United Nations, Geneva.

UNCTAD (2018a). The African Continental Free Trade Area: the day after the Kigali summit. Policy Brief no. 67. United Nations, Geneva.

UNCTAD (2018b). Power, platforms and the free trade illusion. Trade and Development Report. United Nations, Geneva.

UNFSS (2013). 1st Flagship Report of the United Nations Forum on Sustainability Standards (UNFSS). UNFSS. United Nations Geneva

UNFSS (2016). Meeting sustainability goals: voluntary sustainability standards and the role of the government. Second Flagship Report of the United Nations Forum on Sustainability Standards. United Nations, Geneva.

UNFSS (2018). Voluntary sustainability standards, trade and sustainable development. Third Flagship Report of the United Nations Forum on Sustainability Standards. United Nations, Geneva.

Urata S and Narjoko D (2017). International trade and inequality. ADBI working paper 675.

Volpe C and Carballo J (2008). Is export promotion effective in developing countries? Firm-level evidence on the intensive and the extensive margins of exports. Journal of International Economics 76, 89-106.

Volpe C and Carballo J (2010). Beyond the average effects: The distributional impacts of export promotion programs in developing countries. Journal of Development Economics 92, 201-214.

Volpe C and Carballo J (2010a). Export promotion: bundled services work better. World Economy 33, 1718-1756.

Volpe C, Carballo J and Garcia PM (2012). Public programs to promote firms' exports in developing countries: Are there heterogeneous effects by size categories? Applied Economics 44(4), 471–491.

Wacziarg R and Welch K (2008). Trade Liberalization and Growth: New Evidence. World Bank Economic Review 22(2), 187-231.

Wood A (1994). High-income countries-Low-income countries Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World. Oxford University Press.

Wood A (2002). Globalization and wage inequalities: A synthesis of three theories. Review of World Economics (Weltwirtschaftliches Archiv) 138(1), 54–82.

World Inequality Report, 2018. https://wir2018.wid.world/

Wright G (2014). Revisiting the employment impact of offshoring. European Economic Review 66, 63-83.

WTO (2018a). Special and differential treatment provisions in WTO agreements and decisions. Note by the secretariat, WT/COMTD/W/239.

WTO (2018b). Mainstreaming trade to attain the Sustainable Development Goals. ISBN 978-92-870-4272-9 (print). ISBN 978-92-870-4273-6 (web). WTO Secretariat.

WWF (2017). SDGs Mean Business: How Credible Standards Can Help Companies Deliver the 2030 Agenda, WWF-ISEAL joint report. Retrieved from http://www.standardsimpacts.org/sites/default/files/WWF_ISEAL_SDG_2017.pdf

Yahmed S B (2017). Gender wage discrimination and trade openness: prejudiced employers in an open industry. ZEW discussion paper.

Yang H (2018). Dynamic trade, education and intergenerational inequality. Pennsylvania State University, mimeo.

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