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Trade Liberalisation and Inequality Between households: A Review of the Recent empirical Evidence

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Trade Liberalisation and Inequality Between Households

A Review of the Recent Empirical Evidence

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Abstract

There is a generalised consensus that inequality in the distribution of income in the last decades has increased both across and within countries. Explanations of such increases have mostly focused on effects of trade liberalisation and openness, on one hand, and of skill biases in labour markets, on the other hand, as the main culprit. In this paper we review that large part of the literature that sees globalisation and openness has the main responsible for the increase in inequality. We observe that inequality across countries varies considerably when accounted for by GDP or household expenditure measures, and that the effects of globalisation on income distribution as not so clear-cut. Household expenditure data seem to provide a more detailed picture of inequality measures, which allows to identify separate components of inequality within country, across country and at the overall level. Micro-economic data do provide a more dis-aggregated picture, which enables to account for those distributive changes that previous studies at the aggregate level had not been able to disentangle.

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After years of neglect, inequality has been brought out of the cold.[1] Inequality has re-entered the mainstream development policy agenda by featuring prominently in the World Bank's *World Development Report* for 2000. Inequality matters in its own right and it is key to reducing poverty. Inequality is again on top of economists' desks, both of those who mingle with the theory of international trade and economic growth and for those who dirt their hands with numbers and statistics on wage and income distribution around the world. After globalisation has come to the forefront of economic research and the policy agenda world-wide, the link between globalisation, trade openness and inequality has gained considerable more attention. This paper draws on recent research to explore in what ways globalisation and trade liberalisation matter for inequality, and how important they are relative to economic growth and inequality.

1. Definitions and Measures of Inequality

1.1. Why Inequality Matters

There are several reasons why inequality matters in the first place.

1. Inequality matters for poverty. For a given level of average income, education, land ownership etc., increased inequality of these characteristics will almost always imply higher levels of both absolute and relative deprivation in these dimensions.

2. Inequality matters for growth. There is increasing evidence that countries with high levels of inequality —especially of assets— achieve lower economic growth rates on average. In addition, a given rate and pattern of growth of household incomes will have a larger poverty reduction impact when these incomes are more equally distributed to begin with (see below).

3. Inequality matters in its own right. There is a strong, and quite widely accepted, ethical basis for being concerned that there exists a reasonable degree of equality between individuals, though disagreement about the question 'equality of what?' (for instance, outcomes or opportunities?), as well as about what might be 'reasonable'.

4. Inequality is often a significant factor behind crime, social unrest or violent conflict. These are often important contributors to poverty in their own right. Inequalities —even perceived ones— between clearly defined groups, for example according to ethnicity, maybe an important issue here.

[1] Paraphrasing Atkinson (1997).

5. Inequality is likely to be critically important for the attainment of any significant development goal. This is not confined only to the income poverty development goal. Similarly it also matters for the World Bank/IMF Poverty Reduction Strategies, individual country strategies, and so on.

Just as living standards and poverty are multidimensional in nature, the same must also apply to variations in well-being between people (or groups of people), and so to **inequality**. This multidimensionality is implied for instance in a recent definition provided in a major development economics textbook of economic inequality as "the fundamental disparity that permits one individual certain material choices, while denying another individual those very same choices"[2]. These material choices, and the factors that permit or deny them, are themselves multidimensional. This definition also reflects a fundamental focus on inequality between individuals (or groups of individuals). It encompasses both inequality in opportunities and inequality in outcomes. It can allow for different time horizons over which these choices can be permitted or denied. And yet broader perspectives on inequality can still be developed.

1.2. Inequality of What? Beyond Incomes and Outcomes

Another aspect of this question is the need to consider inequality both in terms of *opportunities* and of *outcomes*. While much discussion focuses on inequality in outcomes (typically more easily observed based on available information), it is important to understand the factors and processes behind this. Some inequality in outcomes is part of the normal functioning of a market economy, such as the extent to which people take up the opportunities they have, and uncertainty can also play an important role. But a substantial component of inequality in people's circumstances may reflect inequality of opportunities, with people favoured or disfavoured according to where they live, parental circumstances and so on. The relative importance of these different sources of inequality is important in discussing appropriate policy responses.

1.3. Inequality Between Whom?

Inequality is typically thought of as differences between individuals within a population, normally a country, though it can also be considered for smaller or larger populations (for instance, within local communities or at a global level). In practice the most widely used measures of inequality (i.e. income, consumption or assets) are generally looking at inequalities between **household-based measures** or between **average per-capita representative measures**. This fails to take account of intra-household

[2] Ray (1998).

inequality, clearly an important issue in practice which then needs to be considered in terms of attributes that can be measured at the individual level (nutritional measures are commonly used for this purpose) and looked at within the household.

It is also important to consider inequality between groups of people, including global inequality between countries, inequality between regions or communities within a country, and inequality between groups of individuals or households classified according to various criteria (for example gender, class). The last is often referred to as **horizontal inequality**.

1.4. Inequality over What Time Horizon?

The data used to measure inequality are often collected at a single point in time whereas many aspects of living conditions vary over time. This is a common criticism of income-based measures of the standard of living —as typically measured they are static in nature, whereas income fluctuates over time, within a year, from one year to the next, or over the life cycle.

1.5. Inequality Measurements and Methods: Standard Techniques

Inequality is typically viewed as different people having different degrees of something, often considered in terms of income or consumption but equally applicable to other dimensions of living standards that show a continuous pattern of variation, such as the level of education or the degree of malnutrition. The data to measure these types of variables are typically derived from household surveys, now available for many countries. As always, it is important to be aware of the strengths and weaknesses of the data, an issue which applies to all dimensions.

Inequality in such variables is generally summarised by an **inequality index**, which in graphical terms can be expressed as the degree of dispersion (or "width") of the frequency distribution. While a wide range of inequality indices of inequality have been developed, some general properties apply to all. Inequality is concerned with the relative position of different individuals (or households) within a distribution. This means that measures of inequality should be insensitive to the absolute number of people or the average absolute value of the measure under consideration.

One straightforward but informative way of considering inequality is to consider the shares of those at different parts of the distribution of e.g. income, for example by dividing the population, ranked by the living standard measure, into quintile groups (the total income is divide by five) or decile groups (the total income is divided by ten). By

definition these income shares increase with the quintile/decile group, and how much they do so provides an informal indication of inequality. We say that a country shows a very high degree of inequality, when the richest quintile is earning much more than the amount earned by the poorest 20 percent.[3]

The so-called Lorenz curve is the curve based on a consumption (income) standard of living measure. This is constructed by ranking the population according to consumption (income), and plotting the cumulative proportion of consumption (income) against the cumulative proportion of the population enjoying that consumption (income). The area between the Lorenz curve and the 45 degree diagonal line divided by the total area under the 45 degree line gives a widely reported measure of inequality, the **Gini coefficient**. The Gini coefficient takes values between zero and one, with higher values indicating greater inequality.

Levels of Gini coefficients can vary substantially between countries and can show quite large changes over time. There is no systematic trend in inequality over time that can be generalised, with Gini coefficients having increased in some countries and fallen in others between the two points in time considered. Some of the increases, though, have been quite large, notably (but not only) in transition countries during the 1990s. These comparisons between two points in time are not necessarily indicative of long term trends; but the magnitude of changes in some cases does show that income inequality can often change substantially over relatively short time periods, in contrast to sometimes expressed "conventional wisdom". In the end the choice of an inequality index is more than just a technical choice. Different inequality indices implicitly represent different value judgements, notably on the relative weight to be given to different parts of the distribution. For example, in the case of the Gini coefficient, the effect of a transfer between a richer and a poorer person depends only on the difference in their ranks in the distribution and it does not depend on how poor the poorer person is.

These indices are equally applicable to analysing inequality between individuals of households at a global level or across populations crossing national borders. The only additional challenge this presents is the need to express all values (income, consumption, assets or whatever) in meaningful common values, such as e.g. PPP dollars for monetary comparisons.

[3] The OECD Development Assistance Committee, for instance, uses the consumption share of the lowest quintile as one of its core indicators for measuring development progress.

1.6. Distributional Changes in Practice

What then is the scope for changes in inequality in practice? Cross-country studies have argued that, on average, within-country inequality is stable over time, or changes too slowly to make a significant difference in poverty reduction (Deininger and Squire (1996, 1998); Bruno *et al*. (1996)). Recent country and regional studies have looked beyond the 'average' and refuted the initial cross-country evidence. Large distributional changes can occur even over relatively short periods of time —for example, in sub-Saharan Africa; in Latin America where income distribution improved during the expansion in the 1970s and deteriorated during the recession of the 1980s; in China; and, in the transition economies of Eastern Europe and Central Asia over the 1990s. While the rapid increase in inequality in the latter region is a special case, it very much confirms the importance of distribution changes for poverty reduction. Gini coefficients for the majority of these countries increased by between 5 and 20 percentage points, in some by even more than that, greatly exacerbating the effects of negative growth on poverty (Kanbur and Lustig, 1999).

2. Different Types of Inequalities, Their Theoretical Underpinnings, and The Empirical Evidence Thereof

We can have different types of inequality, depending on the distributional indicator we refer to: inequality in the distribution of wages and earnings; inequality in the distribution of income, expenditure, and/or consumption; inequality in the distribution of assets. Different types of inequality will obviously have different theoretical explanations, as well as different policy implications.

We can also have several **causes of inequality**. While there is no consensus in the literature on some unique explanations for why inequality arises and persists, there are several explanations as to how trade openness and liberalisation might affect economic growth and inequality, whether in the distribution of wage and labour earnings or in the distribution of income and expenditures.

2.1. Openness, Globalisation, and Wage Inequality

Wage inequality has increased significantly world-wide, both in developed countries —notably the US and Europe— and in developing countries —in Latin America as well as in Asia. While Europe witnesses a persistently high joblessness, wage inequality and differentials in employment by skill and earning in the US have increased from the 1970s to the 1990s. Foreign trade has been considered as a primary factor in explaining the raising wage inequality in the US, as the **openness ratio** is higher for the US than it is for Europe (35% vs. 12% in 1990) —openness being the sum of exports and imports as a share

of GDP. And yet, the consideration of foreign trade as the primary factor in explaining wage inequality has not been unanimously: several empirical studies, in fact, have shown that the direct impact of trade on domestic (low-skilled) workers has been small (Borjas and Ramey, 1994; Borjas et al., 1996; Sachs and Shatz, 1998; Freeman, 1998). The emphasis has been then put on the 'technological' or 'skill-bias' explanations: one of the causes of the increased wage inequality has been identified in the change in the structure of labour demand in favour of skilled workers, reflected in the increase of returns to education, and in some countries in the rise of unemployment among individuals with less qualification (Freeman, 1995; Gottschalk and Smeeding, 1997). Thus, there is no consensus about the underlying causes of the change in labour demand. As Johnson (1997) has argued, the share of unskilled unemployment going to the tradable sector without the negative impact of openness is too small "to have produced relative demand shifts of the magnitude observed during the 1980s" (p. 46). Also, demand shifts toward skilled workers have been generalised not only concentrated in the tradable sector.

In linking wages and productivity, one expects that sectors with higher wages have relatively higher productivity as well. To start with, wage-income distribution was more stable before 1970, "when productivity growth was high, than it became after 1970, when productivity growth fell" (Galbraith, 1998, p. 29). Following the inequality increase in the 1980s, blue collar and less-skilled workers witnessed the largest relative wage loss at that time. Productivity was higher in these sectors (blue-collar manufacturing sectors) than elsewhere in the economy, "despite the fact that computerisation was much less widespread in this sector" (ibid. p. 34). Thus, according to Galbraith, there is no clear link between the actual diffusion of computers and the rise of education premia, as computers came along *after* the rise in inequality. Likewise, we should observe at least a broad increase in earnings inequality across countries, as well as a trade off between rise in inequality and increase in unemployment.[4] But the evidence points to the contrary (see below). In conclusion, as Liard-Muriente (2001) puts it, the conventional 'technological' explanation is very weak, and yet it downplays the role of the 'openness' explanation.

Barriers to trade in advanced nations have decreased, but non-tariff barriers have not, and there has been an increase in imports from developing countries. In developing countries, openness has increased almost everywhere, calling for more protectionism in the more advanced countries. However, protectionism eventually reduces export competitiveness (Burtless et al., 1998) and does not help solving the wage-inequality issue (Collins, 1998). That trade is a threat and a cause of wage inequality is counterfactual, as for instance the US are relatively less dependent on the world economy than most of its trading partners. Neither the endowment of low-skilled workers nor the level of wages is

[4] See also, DiNardo and Pischke (1996), and Howell (2000).

today worse for the US than most other advanced economies or most of their trading partners (Liard-Muriente (ibid.)). Besides, most empirical studies on the effects of trade on wage inequality show several flaws, so that "the fear emerging from trade with developing countries might be unfounded" (Liard-Muriente (ibid. p. 19)). "The 'conventional' explanation is the dominant view, primarily because, following the empirical evidence, the impact of trade on workers is considered as relatively small and because of the computer revolution. However, there are flaws in the conventional explanation, and the trade/openness explanation should be revisited." (Liard-Muriente (ibid. p. 19)).

Yet, even though trade might not be a direct cause of increasing wage inequality, openness as a whole carries some discomforting facts. Multinational enterprises play the lion's share in the markets (70 percent of world trade is controlled by 500 corporations (Korten, 1995). Also, social tensions may result as an outcome of openness (Rodrik, 1997), more safety nets may be required as openness increases —especially for low-skilled workers—, and yet openness will make this task more difficult, as liberalisation takes away national policy tools (Epstein, 2000; Self, 2000). And, as Liard-Muriente (ibid.) points out, "this is ironic since capitalist markets need a set of laws and regulations that are provided by the state, and the triumph of capitalism has been dependent upon supportive political measures which could be reversed or modified" (p. 21).

Wage inequalities, both in developed and developing countries, have changed substantially during the past decades of increasing globalisation. Some of these changes are, in some respects, in line with the predictions of Heckscher-Ohlin theory: widening wage or unemployment gaps between skilled and unskilled workers in the North, and symmetrically narrowing gaps in parts of the South (Wood, 1994). However, in other respects, wage changes have differed from these predictions. In the North, the wage gap has widened less and less, despite continued rapid growth of trade with the South (Wood and Anderson, 1998), and there has been a widening of inequalities among skilled workers, with very large gains for a small minority at the top (Bernstein and Mishel, 1997). In the South, wage inequalities have risen in many countries in the 1980s and 1990s (Robbins, 1996b; Wood, 1997).

Various explanations have been offered —some emphasising forces other than globalisation, like reforms of the labour markets or technological change, others suggesting alternative channels through which the effects of globalisation might flow. Wood (2000) has argued that most observed changes in wage inequalities can be explained by a synthesis of the theories of Heckscher-Ohlin, Feenstra and Hanson (1996), and Tang and Wood (2000), who "between them provide a plausible explanation of the varied effects of globalisation on wage inequalities in developed and developing countries. In

combination, these three theories can explain, among other things, why inequality has fallen in some developing countries but risen in others. Improved travel and communication facilities raise the relative wages of highly-skilled Northern workers, but in both the North and the South have mixed effects on wage gaps between medium-skilled and unskilled workers, sometimes reinforcing and sometimes offsetting the effects of falling barriers to trade" (p. 1).

In sum, the increase in wage inequality between high- and low-skilled workers in the US and Europe in the 1980s and 1990s has been conventionally attributed to some combination of skill-biased technological change and the effect of trade: trade with low-wage developing countries has been blamed, with more imports from low-wage developing countries reducing the demand for and wages of the less-skilled, and with the threat of more imports and more employers investing abroad undermining wage demand of the less-skilled in the US and Europe. Trade, as opposed to technological change, is estimated to account for 20 to 40 percent of the increase in the skilled-unskilled wage differential (Helpman and Krugman, 1989; Wood, 1997).[5]

The same trend of increasing wage inequality is evident in emerging markets. In Latin America, it has been apparent for at least 15 years (Behrman, Birdsall, and Székely, 2001), and it has been attributed to supply-side factors such as the lack of skilled-labour.[6] During the late 1980s and the 1990s, demand-side changes have also been emphasised, mainly due to economic restructuring and the opening to international markets. As Behrman, Birdsall, and Székely (ibid.) notice, "many analysts and policy-makers had assumed that these policy changes would better tap the comparative advantage of the region vis-à-vis the northern markets, generate new jobs for relatively low-schooled workers, and reduce wage differentials between less-schooled and more-schooled workers. From this perspective, the increasing wage differential in the region are indeed an unwelcome surprise" (p. 1).[7] In the subsequent analysis, Behrman, Birdsall, and Székely (ibid.) find that the set of market-oriented policies "that have come to be labelled the Washington Consensus" — i.e. trade and financial liberalisation, privatisation, opening of capital markets, reduction of high-income tax rates in favour of broad-based taxes on consumption, and deregulation of labour markets–and that have been widely implemented throughout the region, "have had a strong positive effect on wage differentials, but that the overall effect tends to be smaller over time" (p. 30). "This disequalising effect is due to the strong impact of domestic financial market reform, capital account liberalisation and tax reform. On the other hand, privatisation contributed to

[5] See also Cline, 1997 and Aghion, Caroli and Garcia-Peñalosa, 2000.

[6] See e.g. Birdsall, Ross, and Sabot (1995), and Behrman, Duryea, and Székely (1999).

[7] See also Escaith and Morley, 2000.

narrowing wage differentials and trade openness had no significant effect on wage differentials. Technological progress, rather than trade flows, appears to be a channel through which policy changes are affecting inequality" (p. 1).

The theoretical explanations for the observed increased wage inequality have also varied, but only to a degree. As Arbache (2001) notes, "[t]he literature on trade liberalisation and distribution of wages has at least two characteristics. The first is that it aims at explaining the experience of developed countries, especially the OECD countries. The second is that there was very little theoretical progress on the issue, and the theorems of Heckscher and Ohlin (HO) and Stolper and Samuelson (SS) continued to be the main analytical tool to explain the relationship between international trade and the distribution of income. The case of developing countries has received less attention" (p. 1). Greater wage inequality has been observed simultaneously with increasing trade liberalisation in most Latin American and other developing countries. This has been puzzling to conventional economic wisdom, as the SS theorem states that liberalisation would raise the relative price of developing countries' abundant factor —unskilled labour— tending to reduce wage inequality. And yet the evidence has shown that the distance between the most skilled workers —as measured by the 9th decile of the wage distribution— and the least skilled workers —as measured by the 1st decile— had been rising steadily during the last decades in most developing countries (see e.g. Robbins, 1996a). The answer to this observed puzzle has thus been found in the 'increasing returns to skills' explanation, whereby the rising skill premium is explained by an increase in relative demand for skilled workers. On one hand, trade can favour direct investment in technologies skilled-labour intensive in those sectors intensive in natural resources —usually tradable sectors—. On the other hand, demand movements can be larger than the shifts in the supply of skilled workers.[8] However, these explanations are valid under the assumption of a competitive-market framework, thus ignoring the effects of government intervention on labour market outcomes. If these effects are taken into account, then most of the increase in wage dispersion could be explained by significant increases in public wages and decreases in the minimum wages.[9]

In conclusion, the empirical analysis on the effects of trade liberalisation on labour markets —and wage dispersion and inequality— of developing countries shows mixed results. As Arbache (ibid.) points out, "[a]lthough the findings are mixed, there is growing empirical evidence showing that trade is being associated with an *increase*, not a decrease, in the relative demand for skilled workers and rising wage inequality, thus rejecting the predictions of the HO and the SS" theorems (p. 14). Actually, "[t]he evidence is

[8] See e.g. Beyer, Rojas, and Vergara (1999).

[9] See e.g. Miles and Rossi (2001).

increasingly supporting the view that the debate is no longer on the causal effects of openness on inequality, but rather, it is on the magnitude of the growth of inequality" (ibid. p. 14).

2.2. Globalisation and Income Inequality

We now turn to **income inequality**, which has also increased world-wide, at least as much as wage inequality, and we review the main theoretical arguments that have been defended. In most contributions, the increase in income inequality world-wide is generally linked to trade liberalisation and globalisation. The term **globalisation**, beyond and besides the fumes of the hot debate surrounding it, refers to a wide range of interactions across national borders, whose key manifestations are the increasing involvement of people and firms in international trade and investment, the economic integratedness of societies, and the ever more apparent presence of issues —like the environment— with cross-border and global implications. It is in front of everybody's eyes that globalisation (integratedness) has increased in the last decades, and it is also unquestionable that one of the major causes of increased globalisation has been trade liberalisation.

Globalisation is often portrayed as undermining national sovereignty, local values and standards and as working against a fairer distribution of income. These views reflect concerns about the pace of economic change and the costs of adjustment, although they frequently involve misunderstandings about the real impact of globalisation on people's lives. Although the current extent and depth of economic integration is unprecedented, advocates of the benefits of globalisation claim that its underlying rationale is not new, responding to the 'natural' quest for trade and commercial opportunities beyond village, regional, and national boundaries. For instance, growth in world trade has consistently exceeded aggregate economic growth for two centuries or more. Technological change, reduction in government barriers to trade and investment and the necessary institutional arrangements have been the key drivers to the trend towards globalisation. Advances in transport, communication and information technologies have been important factors in reducing the effective distance between markets. Greater openness of economies to international trade and investment after 1950 have also contributed to market integration.

Globalisation, some say, is a 'race to the bottom', and yet it is an enduring fallacy that competition from low-wage countries threatens overall living standards in developed economies. On the contrary —this is how the pro-globalisation argument goes— by ensuring that an economy plays to its comparative strengths rather than tying up resources in activities with low returns, international trade supports higher living standards in both developed and developing countries, as it enables access to cheaper, better and different goods and services. Trade liberalisation provides access to new

technologies and to wider markets that allow specialisation and increases in productivity, thus keeping domestic producers 'up-to-date' and 'on-the-run'. Also, the larger market opportunities provided to poorer countries enable them to grow faster and to increase their purchases from developed countries. It is true that low wages in some less developed countries can provide a competitive advantage in standardised labour-intensive products, but low wages can also reflect low productivity, arising from lack of skills and equipment and inadequate market institutions. In other words —and this is a major point in the argument of globalisation advocates— wage levels alone are not decisive in determining *where* good and services are produced.

Nevertheless, critics of globalisation point to the rise of inequality between people in rich and poor nations and the overarching extent of poverty in the world. Since 1950, the richest quarter of the world's population has become *six times* richer, while the poorest quarter has become *only three times* richer. Thus, the issues of trade liberalisation and globalisation and their effects on income inequality, poverty levels, and economic growth, are now hotly debated and lively ones. On the one hand, we have a position claiming that economic growth fuelled by greater openness to foreign trade and investment "really does help the poor: in fact it raises their incomes by about as much as it raises the incomes of everybody else. [...] In short, globalisation raises incomes, and the poor participate fully".[10] On the other hand, we have the opposite position, according to which "[t]here is plenty of evidence that current patterns of growth and globalisation are widening income disparities and hence acting as a brake on poverty reduction".[11] These apparently irreconcilable positions draw on two different types of studies: the 'globalisation-decreases-inequality' position draws on Dollar and Kraay (2001), which found that average incomes of the poorest quintile moved almost one-for-one with average income overall, while the 'globalisation-increases-inequality' position draws on a vast, sparse, and diverse literature, whose major thrust is that inequality has been rising almost everywhere in the last decades.[12]

Most of these studies, whether championing one position or the other, rely on aggregate data on gross income or expenditure and are based on per-capita (individual) measures. As we will see later, however, results might differ considerably if household data are considered, and if inequality *within* or *between* countries is considered. As Knowles (2001) points out "Inequality can be measured using data on gross income, net income or expenditure. In addition, the unit of measurement can be the individual or the household. A priori, we would expect to obtain quite different measures of inequality,

[10] The Economist, 27 May 2002, p. 94.

[11] Justin Forsyth, Oxfam Policy Director, Letter to The Economist, 20 June 2000, p. 6.

[12] See e.g. Deininger and Squire (1996, 1998), Ravallion and Chen (1997), Gottschalk and Smeeding (1997), Lustig and Deutsch (1998), IADB (1999).

depending on which of these classifications are used. It follows that in empirical work it is important to use consistently measured data that are not, for example, based on gross income for some countries and based on expenditure for others." (p. 1).

Studies based on data on aggregate gross incomes can, in turn, be broadly divided into two categories: one that looks at the effects of trade liberalisation and globalisation on economic growth and *therefore* inequality, and the other that looks at the effects of inequality *on* economic growth (the reverse causality). Within the first category —studies that look at the effects of trade liberalisation on economic growth and inequality— there are basically two arguments: one that claims that globalisation is harmful as it negatively affects the less protected people both in the developed and in the developing countries; the other that claims that globalisation is good as it gives everybody more opportunities, it increases competition, and it facilitates access to a larger distribution of wealth for a broader number of people. Within the second category —studies that look at the effects of inequality on economic growth— we can identify four arguments.[13] The first argument is that an unequal distribution of income leads to pressure for redistribution through distortionary taxes, hence reducing growth. The second argument is that inequality may lead to social and political instability, which will in turn reduce investment and hence growth. The third argument is that in the presence of imperfect capital markets inequality will reduce investment in human capital, which will in turn reduce growth. The fourth argument, finally, is that as inequality increases, fertility is likely to rise and human capital investment fall, both reducing growth. Notice that these last three arguments refer not so much to the distribution of gross income but to the distribution of net income or real expenditure, an important difference from the empirical point of view.

The effects of trade liberalisation on growth and inequality have been recently analysed in a number of studies, partly because of the ever increasing volume of exchanges world-wide and partly on the wake of the recent backlash against globalisation. Over the past decades international capital mobility has grown as capital controls were reduced or virtually eliminated everywhere. As one comment puts it, "[f]aster capital mobility in a relatively deregulated environment leads to rising inequality, both within countries and between countries" (Weller, Scott, and Hersh (2001, p. 2)). This is so mostly because eventually the "burdens of financial crises are disproportionately borne by a country's poor. Since higher-income earners have better access to insurance mechanisms that protect them from the fallout of a crisis, [...] macro-economic crises lead to a more unequal income distribution within countries" (Weller, Scott, and Hersh, ibid. p. 2).[14] Also, "developing countries are prone to experience more severe economic crises with greater

[13] For a detailed review, see Perotti, 1996.

[14] See Lustig, 2000.

frequency than are developed economies (Lustig (ibid.); Lindgren, Garcia, and Saal (1996)), leading to greater inequality between countries" (Weller, Scott, and Hersh, ibid. p. 3). Trade liberalisation also, by "inducing rapid structural change and shifting employment within industrialised countries, [...] leads to falling real wages and declining working conditions and living standards (Bannister and Thugge, 2001; Scott et al., 1997; Mishel et al., 2001)" (ibid. p. 3). According to the quoted Weller, Scott, and Hersh (ibid.), [t]he connection between rapid trade liberalisation and inequality appears to be universal, indicating downward wage pressure and rising inequality following trade liberalisation in industrialising and industrialised economies" (p. 3).[15]

In a 2001 World Bank draft Policy Research Report, it is acknowledged that inequality has increased within countries. After 1980 "there was a serious [...] increase in within-country inequality in industrialised [countries] reversing the trend of [the period 1950-80]" (World Bank, 2001).[16] Across countries, the World Bank report argues that incomes between countries are converging, but only for those countries who have embraced globalisation. Yet, as Weller, Scott, and Hersh (ibid.) emphasise, "the assertion that 'between countries, globalisation is mostly reducing inequality' (World Bank, ibid. p. 1) seems to contrast directly with the IMF's assessment that 'the relative gap between the richest and the poorest has continued to widen' (IMF, 2000, part IV, p. 1)". In fact, "[t]he distribution of world income between countries grew unambiguously in the 1980s and the 1990s. In other words, rich countries have got richer and poor countries have got poorer" (Weller, Scott, and Hersh, ibid. p. 7). Conversely, "[t]he distribution of world income across people, rather than countries, witnessed some equitable improvement in the 1990s after a dramatic increase in inequality during the 1980s". However, this was mostly due to rising incomes in China, "If China is excluded, there is an unambiguous trend toward growing income inequality across the remaining world population in the 1980s and 1990s" (ibid. p. 7).

3. The Empirics of Inequality

Empirical studies on income inequality can be divided into three types. The first looks at income inequality *between* countries. This is generally done by comparing countries according to their per-capita GDP. The second looks at income inequality *within* countries. This is generally done by looking at income distribution within countries as estimated through some household-based survey. The third looks at income inequality *at the world level*, regardless of country or region, a combination of the other two types.

[15] See also US Trade Deficit Review Commission (2000).

[16] This is confirmed, *inter alia*, by the studies by Deininger and Squire (1996), Ravallion and Chen (1997), Gottschalk and Smeeding (1997), Lustig and Deutsch (1998), and IADB (1999).

3.1. Income Inequality Between Countries

Studies of income **inequality between countries** are based on the common assumption that countries can be compared by considering the *average* per-capita level of income, thus implicitly assuming that inequality across countries can be calculated by considering a world populated by representative individuals from all countries, or by people having the mean income of their countries. Therefore, studies on income distribution between countries compare average country (per-capita) incomes. Wade (2001), for instance, considers the distribution of the world's population by average income (as measured in PPP terms) of each country.[17] As it turns out, such a distribution has two poles: "one at the bottom end, at an average income level below $1,500 a year" containing "the populations of most of Africa, India, Indonesia and rural China"; the other "at the top end, with average PPP income above about $11,500, made up mostly of the populations of the US, Japan, Germany, France, UK, and Italy" (p. 5).

Wade (ibid.) reviews the evidence and elaborates on the claim that income distribution has become more unequal. "If countries are treated equally (not weighted by population) and average income is measured in PPP terms, most studies find that —whichever measure of inequality is used— world income distribution has become more unequal in the past few decades. If countries are weighted by their populations (so China's change in average income counts for many times more than Uganda's) world PPP income distribution over recent decades shows *little change*" (p. 6). Thus, if countries are weighted by population, each individual in the world is given equal weight, and the evidence seems to be that income distribution has changed very little. Conversely, when countries are not weighted, each country is treated as a 'policy experiment' or as a 'test case for growth theories', and the evidence is overwhelmingly in favour of an increased inequality in world income distribution.

"When incomes in different countries are expressed in a common currency using market exchange rates the evidence shows that world income distribution has become *much more unequal* over the past several decades and the inequality accelerated over the 1980s and 1990s, whether countries are treated equally or weighted by population. In other words, when countries' incomes are compared using market exchange rates, globalisation has not worked, in the sense that rapidly increasing flows of trade and investment have not yielded the expected neo-classical convergence, have not benefited the poorer participants by nearly as much as the richer. On the other hand, when incomes in different countries are compared using PPP exchange rates, *the degree of inequality shrinks* (the poor are richer, the rich are poorer), and the rate of widening shrinks. Using the standard source of PPP data and weighing individuals equally, world income

[17] See also e.g. Theil (1996).

distribution has shown little change over the past two decades" (Ibid., p. 8). Yet, as subsequent discussion by Wade shows, when correct price estimates are used even PPP-adjusted estimates show a worsening world income distribution.[18]

Melchior, Telle, and Wiig (2000)[19] have also studied what has happened to *international* —i.e. between-country— inequality since 1960, using PPP-weighted estimates of per-capita incomes of 115 countries and weighing the countries by population size. According to their estimates of Gini coefficients for differences in average per-capita income suggest that international inequality has actually been falling more or less continuously from 1968 to 1990, then increasing until 1994, and falling again thereafter. Their results confirm those of a large body of literature, like e.g. Sprout and Weaver (1992), Schultz (1998), Firebaugh (1999), and Boltho and Toniolo (1999).

3.2. Income Inequality Within Countries

We now turn to the evidence on **inequality within countries**. Studies on inequality between countries have used average GDP, and have generally ignored inequality within each country. When they do consider within-country inequality, they often compare Gini's inequality indexes across countries and between-country components reflecting differences in PPP-measured GDPs per capita. However, as Milanovic (2000) correctly observes, "[f]irst, distributions cannot be well predicted from single inequality statistics" and "[s]econd, GDP is an imperfect indicator of household disposable income or expenditure" (p. 4).

Milanovic and several other authors have recently provided new evidence on income inequality within countries and between households using data from household surveys, now available for many countries. Data on poverty and inequality are obtained form household surveys, in which random samples of households are interviewed using a well structured questionnaire.[20] The household surveys considered are in general nationally representative, include imputed values for income or consumption in kind from own-farm output and allow for estimates of poverty and inequality measures from primary data (as opposed to secondary sources). These estimates can be confronted with private consumption expenditure estimates from national account statistics, which are

[18] See also Dowrick and Akmal (2001)

[19] Quoted in Bigsten and Levin (2001).

[20] These surveys are now used for the update of the data base on which the World Bank's tabulations of income distributions are based (Chen and Ravallion, 2000). The latest version of the data set can be found at www.worldbank.org/research/povmonitor.

different in the way they are constructed in coverage, definitions, and methods.[21] Given these differences, the evidence reported in Ravallion (2001c) does not point to any systematic overall discrepancy between national accounts and survey-based estimates of aggregate consumption.

Ravaillon (1995), Ravaillon and Chen (1997) and Ravaillon (2001a) find little or no correlation between growth in average household income per person and the change in measured inequality.[22] Yet, "[f]inding that the share of income going to the poor does not change on average with growth does not mean that growth raises the incomes of the poor as much as for the rich" (Ravaillon, 2001a, p. 7). The poor gain in absolute terms only when distributional shares do not change. Ravaillon conclusions are that, first the "incidence (and depth) of absolute poverty in developing countries tends to fall with growth" (ibid. p. 10), and second, that "there is ample evidence to support concerns that high or rising inequality is putting a break on the prospects for poverty reduction through growth" (ibid. p. 11). While the 1990s saw reasonable economic growth in the developing world as a whole, there was not much progress against poverty. As Ravaillon (2001a) summarises it, "[w]here growth occurred, it tended to be poverty reducing, though more so in low inequality countries and countries that avoided rising inequality with growth" (ibid. p. 22). Similarly, "rising inequality in the world inhibited overall poverty reduction. The world Gini index increased form 63% in 1988 to 66% in 1993 (Milanovic, 2000)" (ibid. p. 22).

Milanovic (ibid.) computes the Gini coefficient for world income distribution, combining within-country inequality and between-country inequality and measuring it in PPP terms: as household surveys weigh individuals equally, the issue of weighing country averages by population does not arise in this case. According to Milanovic (ibid.) world inequality increases because inequality *between* countries is rising —it accounts for three quarters of the increase in the world Gini index from 1988 to 1993,.[23] Dikhanov and Warp (1999) obtain similar results on the same household data, thus confirming, as Wade (ibid.) says, that "the world PPP income distribution with countries weighed by population became 'more unequal' between 1988 and 19993" (p. 11). Further evidence from the same data set (Milanovic and Yitzhaki (2001), Wade (ibid.)) shows that "the typical Third World country has […] a very small middle class, a larger wealthier elite, and a very much bigger

[21] For a review of the problems and the differences between survey-based estimates and national-account estimates of consumption see Ravaillon (2000, 2001a, 2001b) and Wade (2001)

[22] Similarly to Dollar and Kraay (2001) who find that the log mean income of the poorest quintile change one-to-one with the overall log GDP per capita.

[23] In Milanovic (2000) calculations it appears that the top 10% of the US population has a total income equal to that of 43% of the world's population, i.e. the richest 25 million Americans have a total income equal to that of the poorest 2 billion people in the world. Also, the average income of the poorest 10% of the US population in 1993 was higher, in PPP terms, than that of two thirds of the world's population.

and amorphous lower class, in contrast to the more diamond-shaped distribution of First-World countries. Which suggest that the world as a whole has a Third World income distribution" (p. 14).

3.3. Income Inequality at the World Level

The **world income distribution** deals with income distribution among the world 6 billion people regardless of country or region. Thus, world income distribution can be thought of as the combination of within-country distribution and distribution of average incomes between countries. As Wade (ibid.) reports, "[m]ost of the inequality in world income distribution reflects the inequality between the country averages rather than inequality within countries" (p. 4).[24] Milanovic (ibid.) finds that world inequality has increased and yet, as trends in inequality within countries show no overall pattern, one can conclude that world inequality has increased as inequality between countries has increased. Milanovic's conclusions, in fact, are that "differences between countries' mean incomes [are] the most important factor behind world inequality. [They explain] between 75 to 88 percent of overall inequality" (ibid., p. 51). Also, "the increase in inequality between 1988 and 1993 occurred as both between-country and within-country inequality increased. However, since their relative proportions remained the same, it was the between-country inequality which, by being much larger, drove overall inequality up" (ibid. p. 51).

In sum, has world income distribution become more or less unequal? How does openness and trade liberalisation affect world income distribution? The answers to these question do not seem to be uniform in the literature, mainly because the "statistical difficulties are so formidable and the data re such a mine-field that the debate has revolved around questions of econometric technique. " (Wade, ibid. p. 6). And, as Wade, summarises it, "the trend in world income distribution depends heavily on (a) the measure of inequality, (b) the weight given to individuals or countries, and (c) the use of currency market exchange rates or PPP exchange rates to compare income in different countries" (ibid. p. 6). The conclusion of his analysis is that "world income distribution measured in market exchange rates has become much more unequal since round 1975. […] The bulk of the evidence on trends in world income distribution runs against the common claim that world income inequality has fallen sharply in the past century and still faster in the past quarter century. None of the four measurement combinations supports this claim" (ibid. p. 10). This conclusion is also supported by various studies, including Koreniewicz and Moran (1997), Firebaugh (1999), and Dowrick and Akmal (2001).

[24] See also Bigsten and Levin (2001).

Like several other authors, Wade has no doubt that trade liberalisation and globalisation are the main causes of increased world inequality, and so criticises the World Bank and the IMF for their position on the issue. In the World Development Report for 2000, for instance, it is said that rising income inequality "should not be seen as negative" provided that the incomes at the bottom do not fall and the number of people in poverty falls. Wade points out that the World Bank "publications tend to give a misleading optimistic spin to the relationship between 'growth' and the incomes of the poor." And then he quotes Bhattachariya (2000): "By stimulating higher growth, [trade] integration [as measured by the increase in the ratio of trade to GDP] can have a strong positive impact on poverty reduction. There is now robust cross-country empirical evidence that growth is on average associated one-for-one with higher incomes of the poor". As Wade remarks, "this says that a 5% increase in the average national income tends to be associated with a 5% increase in the average income of 'the poor', a 1% increase in the average with a 1% increase in the income of the poor, and so on. What the Bank consistently does not point out is that this implies a *widening* of the gap. By arithmetical necessity, an *x* percent increase in a higher number and an *x* percent increase in lower number implies an *x* percent increase in the gap between them. The Bank's favourite phrase, 'one-for-one', as in the above, suggests the metaphor of 'a rising tide lifts all boats (equally)'" (ibid. p. 27).

3.4. What's Behind the Measures of Inequality Between Households

The use of income distribution indicators in the economics literature has increased considerably in recent years. Within-country inequality measures are generally based on household surveys , whose availability has now become widespread for a large number of countries. Yet, measures of inequality between households need to be carefully interpreted, as underlined in some recent studies like e.g. Székely and Hilgert (1999a) and Atkinson and Brandolini (1999). The recent appearance of the Deininger and Squire (1996) database on inequality indicators for the world, together with the World Income Distribution data base by WIDER (1999), has enforced the concern for good quality requirements regarding data on inequality.[25] As these studies show, "cross-country inequality comparisons can be blurred by differences in the quality of information and by variations in the degree of success in defining a sample that is informative of all sectors of society." (Székely and Hilgert, ibid. p. 8)

Székely and Hilgert find "(a) that the way countries rank according to inequality measured in a conventional way is to a large extent an illusion created by differences in

[25] The "good quality" requirements of the Deininger-Squire data are that: (i) the data have to contain information on all income sources; (ii) the unit of observation is the household or the individual; (iii) the data are representative at the national levels.

characteristics of the data and on the particular ways in which the data is treated; (b) Our ideas about the effect of inequality on economic growth are also driven by quality and coverage differences in household surveys and by the way in which the data is treated; (c) Standard household surveys in Latin American countries are unable to capture the incomes of the richest sectors of society; so, the inequality we are able to measure is most likely a gross underestimation". Their main conclusion is that "there is an important story behind each number. This story influences our judgement about how unequal countries are and about the relation between inequality and other development indicators, but it is seldom told or known." (ibid. p. 1)

In a different paper, Székely and Hilgert (1999b) explore the dynamics of income distribution in Latin American countries during the 1990s by processing the micro data from 49 household surveys from almost all countries. As it turns out, not all countries have nationally representative surveys, and not all are strictly comparable over time. Székely and Hilgert conclude that "in the 15 countries where comparable national household surveys are available, income distribution has not improved in the 1990s" (ibid. p. 25). Yet, although all surveys are strictly comparable, "there are considerable differences across countries in the characteristics of household surveys" (ibid. p. 26), particularly in their coverage. "What is driving the lack of distributive progress? […] the main source driving the lack of distributive progress is the deterioration in the distribution of labour incomes" (p. 27). However, Székely and Hilgert conclude "the lack of progress in income distribution is not exclusive of this region. We compare Latin America internationally and find that, with few exceptions, inequality has increased less in this region than in developed countries and in Eastern Europe" (ibid. p. 27).

The quality and characteristics of measures of inequality in the focus of yet another study by Székely and Hilgert (2000). As the authors point out, "the most common approach to explain international differences in inequality has been to perform aggregate cross-country regressions that use macroeconomic indicators as explanatory variables. This literature has identified some aggregate variables closely correlated with inequality differences, including financial market development, education levels, geographic conditions, and institutional factors."[26] But this analysis has two limitations: first, data on income distribution are often not strictly comparable, as we have seen above;[27] second, only 'observed' characteristics are considered, while these might be correlated with some other unobserved characteristics which might thus yield biased coefficients.

Household survey data can be very useful in determining what are the *microeconomic factors* driving the large differences in inequality across countries. A micro

[26] See e.g. Li, Squire, and Zou (1998), Gavin and Hausmann (1998), Squire and Lundberg (1999).

[27] For instance, in the Deininger and Squire (1996) data set, non-labour incomes are very heterogeneous.

perspective can also be good in addressing the limitations of the aggregate approach. In their recent paper, Székely and Hilgert (ibid.) present a simple microeconomic simulation techniques to examine what drives differences in inequality across countries. The simulation technique recreates the process of income generation and family formation and allows to isolate each of the decisions that lead to the formation of household per-capita income. Similar simulation techniques have also been used by Cowell (1996) and Cancian and Reed (1998), all of which used counter-factual distributions to assess the importance of one of the elements of the process of household formation on inequality. The approach used by Székely and Hilgert (ibid.) and these other authors can be informative on what drives inequality from a statistical point of view, but it does not delve into the causes of inequality, like the theoretical general-equilibrium models of e.g. Kremer (1997) or Greenwood et al. (1999), or that of Haurin et al (1993).

The simulation decomposes cross-country inequality differences into the importance of individual decisions, such as fertility, mating, labour force participation, and household structure, while at the same time including information on the importance of different income sources. The decomposition is applied to household survey data from 35 countries from 6 regions in the world. The empirical results provide insights into the transmission mechanisms through which inequality is generated.

In the first place, it appears that there are huge disparities among countries in terms of household per-capita net income, as measured by Gini indexes. Secondly, labour incomes represent more than 60 percent of total household income in almost all countries around the world, while the relative importance of other sources of income differs substantially by country. Third, household structure and family characteristics vary substantially by country, household size also differs significantly, while female labour force participation —which is related to the number of income earners per household— is significantly higher in the most developed countries. Besides, while some countries have a higher proportion of extended and nuclear households, other countries have much greater shares of single person households. It appears that all of these demographic and family characteristics are important components in the process of household per-capita income formation.

4. Conclusions: What Drives Inequality Differences?

In conclusion, differences in average per-capita income across countries, i.e. in the distribution of income between countries, and in the distribution of income within countries show that there are large differences in inequality between countries and that inequality in the distribution of income, both between and within country, is running on the high around the world. As we have seen above, comparisons across countries using

aggregate indicators vary considerably from those made using micro data at the household level. In particular, within-country inequality escapes from the picture if cross-country comparisons are made using country averages.

Yet, both at the macro and at the micro level, some clear and homogeneous tendencies emerge. Both country averages (like per-capita incomes) or indicators (like Gini indexes) and within-country statistics confirm the general tendency of an increased inequality, both in developed and in the developing world. Although we cannot draw a univocal conclusion, if we relate increased trade liberalisation and globalisation with the observed increased inequality, the close correlation looks somehow dismaying.

Comparisons between countries and regions show that Latin America is the 'most unequal', while Scandinavia is the 'less unequal' region in terms of inequality indexes calculated from household-based micro data.[28] Latin America, in fact, has a Gini index that is 27.5 points higher than that of Scandinavia. About half of this difference is to be accounted by the inequality in hourly earnings, i.e. disparities in the labour market or wage inequality, while non-labour and family incomes account for about 6 points of that gap between Latin America and Scandinavia.[29] In Western Europe, the higher inequality in the Gini index is accounted for by non-labour and family incomes, while in North America it is mostly due to wage inequality.

Within the various 'regions' patterns are not so homogeneous: the US, for instance, has a Gini index that is 8 points higher than Canada. Within Latin America, Uruguay is the country with the lowest inequality of total household per-capita income, while in Western Europe, Luxembourg is the less unequal country. Overall, the US and the UK are the most unequal in the developed world. Yet, somehow surprisingly, almost 90 percent of the difference between the US and Sweden is accounted for by differences in the distribution of labour earnings alone.

The simulation techniques used on micro data by Székely and Hilgert (2000) allow to decompose differences in inequality of household per-capita income across 35 countries from six world regions. It turns out that "Western European countries actually register lower labour market inequality than Scandinavian countries and yet they have higher inequality in the distribution of household per capita incomes because of the role of other income sources. In contrast, most of the difference with North America surprisingly arises

[28] The Gini index calculated on Household per-capita net income (household-based micro data) is: Latin America (52.8), North America (35.6), Western Europe (32.2), Scandinavia (25.3), Eastern Europe (37.7), Asia (38.3). Africa and Oceania are not included in the analysis because of lack of available and comparable data. See Székely and Hilgert (2000).

[29] Besides, "in Latin America individuals with lower hourly earnings work relatively more hours than higher income individuals, and relatively lower income households have a greater tendency to 'pool' more incomes by creating extended families" (Székely and Hilgert (2000, p. 24)).

from labour market inequalities rather than from public transfers, unemployment benefits or other similar incomes that are linked with public compensatory mechanisms" (p. 30).

Most of the recent studies on inequality, both between countries and within countries, have in any case analysed the relationship between inequality and growth, or inequality, poverty and growth,[30] and only a few have considered the effects of trade liberalisation —or globalisation, for that matter— and economic growth *on* inequality, and those are the ones we have reviewed here. One strand of this literature —whose theoretical premises we overviewed above in Section 2.1— has studied how globalisation affects wage and income inequality in the US and Western Europe, as well as in developing countries. A second strand of research —whose theoretical bases were sketched in Section 2.2 and whose empirical findings were reviewed in Section 3— has focused on how globalisation affects the distribution of between-countries per-capita GDPs by leading to the differences in mean per capita growth rates. In any case, as Milanovic (2002) has pointed out, "[n]one of these two approaches looked at how globalisation affects within-country distribution among the less developed economies" (p. 2), with some exceptions, notably the ones we mentioned above in Section 3.2.

The results based on household-survey income data presented by Milanovic (2002) suggest "an almost Kuznets-like effect of openness on income distribution. When a country is relatively poor, increased openness raises the income share of the top, and reduces the income share of the poor groups as well as of the middle classes. […] However, at some medium level of income […], income share of the poor and the middle class begin to be positively affected by openness while the income share of the rich begins to decline. Finally, for the rich countries, openness is associated with increasing share of the bottom and middle deciles, and decreasing share of the top deciles. Openness thus helps income distribution chart an inverted U shape as income level increases. *At low income levels, openness is bad for equality; at medium and high income levels it promotes equality*" (p. 13, italics ours). Therefore, only for the middle-income countries the results are in line with theory. For the poor countries, which should be helped by openness, and for the rich countries, where openness should increase income differentials, the results are then not in line with theory.[31]

[30] See, for instance, the most recent Mbabasi, Morissey and Miller (Sept. 2002) and Knowles (2001) where some of the empirical literature on the effect of inequality on growth is analysed.

[31] Although Wood (1994, 1995) arguments —not the classical international-trade-theory ones— would provide a rationale for such evidence. International trade theory, in its most abstract formulation, implies that increased trade and foreign investment should make income distribution more equal in poor countries and less equal in rich countries. The results discussed here run counter to the simple factor price equalisation theory with two types of labour, but are in any case consistent with Wood (1994) theoretical model with three types of labour.

5. References

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