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Three centuries of inequality and poverty

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Global income inequality is currently a much-debated issue. There is a general condemnation of the ever-increasing income inequality in advanced economies and China, while the old rhetoric on the growing income disparities between countries continues to be addressed by international organisations and the media. However, as shown in this paper, the reality is far more complex. Over the last twenty years, and for the first time in three centuries, global income inequality has declined. This finding appears to contradict conventional wisdom, but it is scientifically undeniable since it is backed by three separate studies.

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• • • /• • • The purpose of this paper is to unravel what appears to be a complex web of contradictions. Clearly, income inequality between countries has grown since the eighteenth century; however, since 1990, average income growth has been far slower in advanced economies than in emerging markets; particularly those in Asia. At the same time, changes in within income inequality in this period vary, with some advanced economies, such the United States and China, witnessing significant increases in income inequality, whilst in many emerging countries income inequality has decreased. Within income inequality has risen overall, but less than one might think when looking at the situation in China and the United States. As average income disparities between countries have fallen substantially over twenty years, the outcome of this sharp decline and the limited rise in inequality within countries has been a significant decline in inequality among the world's population. Eye-catching headlines on the sometimes brutal peaks in within income inequality cover this positive development. Thus there is little recognition of the fact that the income gap between people in many advanced economies and hundreds of millions of Asians is closing fast, and that over 500 million people have been brought out of extreme poverty over the last 20 years.

Part One of this paper covers the period 1992 - 2008, and focuses on the decline in global inequality and the percentage of people considered poor worldwide, and reasons for this. Part Two focuses on the period 2008-2030 and attempts to assess whether the trend of falling income inequality is likely to continue. A number of assumptions have to be made in order to hope that it will continue.

Part one (1992-2008).

1) Global income inequality.

This work follows on from an article by F. Bourguignon and C. Morrisson on the period 1820-1992 (AER 2002). We have used the data sets on population and average income for each country created by A. Maddison and extended by him until 2008, meaning that all income data are in 1990 dollars and based on purchasing power parities for GDP. Data for domestic income distribution are taken from the OECD for member states and from two sources (the World Bank's POVCALNET and UNU-WIDER) for other countries. As in the article mentioned above, this study groups countries into 33 countries or groups of countries, an indispensable method for estimating income and population size since 1820. This approach has the advantage of offering consistent estimates for 1820 to 2008 and even 1700 to 2008, thanks to Maddison's estimates for those years.

Figures 1 and 2 present a record of three centuries of global inequality. This grew slowly in the eighteenth century, while the nineteenth century was marked by an intense widening of the gap between the richest 20%, whose share increased from 56% to 67%, and the poorest 80%, whose share fell from 44% to 33%. Consequently, the ratio of average income of the richest 20% over that of the poorest 80% rose from 5 to 8.3. Inequality continued to rise slowly after 1910, with the richest 20% representing 71% of income in 1992. Indicators of inequality reflect these trends, particularly the exceptional nature of the nineteenth century.

Over the three centuries the Gini coefficient increased respectively by 3.4%, 24%, and finally 6.7%. However, irrespective of the period, including interim dates not listed in Figures 1 and 2, the same trend can be observed: the share represented by the poorest 80% continues to decrease, and that of the richest 20% to increase.

As a result, the period 1992-2008 marked a major turnaround: for the first time in three centuries, global inequality fell significantly. The Gini coefficient fell by 5.1%. The Theil index, the inequality indicator that is most sensitive to the richest 20%, fell by more than 11%, and

the mean log deviation, which is sensitive to the share represented by the poorest 20%, fell by the same amount. Comparing the various indicators of inequality or the shares of the top 20% and lowest 80%, a similar distribution was last seen in 1910. Thus, in less than 20 years global inequality returned to a (still very high) level last seen around a century ago.

Given the outcome of such an analysis, questions about the reliability of the preceding estimates are legitimate. Yet it is supported by the fact that the other two available estimates, derived from data sets and different methodologies, lead to the same outcome. X. Sala-i-Martin (2010) finds the same decrease in the Gini coefficient for the period 1992 to 2006 in a sample of 180 countries. In addition, the absolute values of the Gini and Theil coefficients are almost the same as those in Figure 2. Bourguignon's analysis (2011) is based on 160 countries and uses the new GDP per capita data sets in 2005 dollars, which results in higher global inequality for a given year. However, what matters is the variation in inequality: Bourguignon obtains a comparable fall in the Gini coefficient (approximately -6.5%) for the period 1989 to 2006.

To understand the significance of these variations in global inequality, it is interesting to know the composition of the poor (bottom 40%), rich (top 20%) and the middle 40% (between the other two groups).

The share of "Westerners" (i.e. the populations of Western Europe, Canada, United States, Argentina, Chile, Australia and New Zealand) in the richest 20% category increased rapidly during the nineteenth century, peaking in 1950 before returning to 1910 levels in 1992. In 1820, the only other large group among the richest 20% could be found in Asia: this was related to the demographic weight of the continent in the world's population. However, the share of Asians among the richest 20% fell over the course of the nineteenth century, from 36% to 27%. This had fallen even lower by 1992 to 24%.

Furthermore, this figure is distorted by the exceptional growth of three countries: Japan, Korea and Taiwan. These countries aside, the share of the others fell from 25% to 6%. Therefore, growing income inequality in the nineteenth century benefited only "Westerners" and, from 1960 to 1992, Japan, Korea and Taiwan (with the same GDP per capita as China in 1990 and 2000, Korea and Taiwan reached the same growth rate in 1960 and 1970 as China now).
In contrast, the share of "Westerners" among the world's poorest 40%, which was already low in 1820, declined steadily, before becoming insignificant by 1992. The same applied in the cases of Japan, Korea and Taiwan which, with shares close to their share in the global population of the nineteenth century, saw their share in the poorest 40% stand at 0 in 1992.

Africa experienced the opposite trend: its share in the poorest 40% mirrored closely its share of the world's population in 1820, after which time the gap between its share and the size of its population steadily increased until now, reflecting the poor performance of the region – more specifically Sub-Saharan Africa – over the last two centuries when compared to the global average.

With regard to the middle 40% of the global population, Eastern European countries dominate this bracket, with percentages far higher than their percentages in the world population since 1820. Since the early twentieth century, Latin American countries have also been increasingly over-represented in this group.

To understand the evolution of global inequality since 1820, one essential tool is the breakdown of an inequality indicator into inequality between countries and inequality within countries. Only two inequality indicators exist that can be disaggregated; the Theil index has been selected for Figures 3 and 4. The figures show how the Theil measure for global income distribution is divided between the two components. The first component would be identical with global inequality if when all the inhabitants of every country had exactly the same income.

The second component would be identical with global inequality if all countries had the same average income, it being understood that inequalities exist within each country to varying degrees.

Figures 3 and 4 help to explain the sharp rise in global inequality in the nineteenth century. In 1700, the share of aggregate inequality attributable to differences in average income between countries was negligible (7%), but rose from 10% to 38% between 1820 and 1910 and continued to rise in the twentieth century, reaching 61% of overall inequality in 1992. In absolute terms, this Theil measure increased more than fifteen-fold from 0.035 to 0.540 between 1700 and 1992. In contrast, the Theil measure corresponding to within-country inequality varied in the range of 0.50 (1910) to 0.32 (1960). Changes in global inequality therefore reflected first and foremost changes in inequality between countries. Between 1700 and 1992, the Theil measure corresponding to within inequality fell by 22%, while the Theil measure of inequality between countries increased fifteen-fold. Following this increase, within inequality played a minor role in 1992, while inequality between countries played a key role. By this point, the wealth or poverty of most of the world's citizens was determined by their nationality and not their rank in their country's income hierarchy.

It was against this background that the great reversal of 1992-2008 was played out. In this period, the Theil measure between countries fell for the first time by 27% in 16 years – a considerable amount. At the same time, the Theil measure of within inequality increased slightly, but this increase merely slowed the steep fall in global inequality. It was, therefore, the convergence of per capita income that brought about the reduction in global inequality. These two events – convergence on the one hand, and growing internal within inequality on the other – are worthy of examination. The latter is less significant but its effect is felt every day by people in countries where inequality has increased rapidly. Table 1, which compares growth rates for advanced economies against those of other countries for 1960-1992 and 1992-2008, shows this new convergence. During the first period, growth rates in the United States, Germany, France and the United Kingdom were the same as the average rates in China and India, and the average rate in Brazil and Mexico. Certainly, other economies witnessed a more dynamic pattern: growth rates in Turkey and Thailand reached 4%, and Korea's growth rate exceeded 6%. However, the weight of these economies was insufficient in comparison with the previously cited countries. In addition, growth rates in Sub-Saharan African countries were stagnating, increasing the gap between advanced economies and the poorest countries. Consequently, the Theil measure of inequality between countries continued to rise from 1960 to 1992.

However, from 1992 to 2008, the average growth rate for the four advanced economies fell to 1.7%, while the average rate for China and India rose from 2.3% to 6.3%. Indonesia continued to outperform the advanced countries, but only by one percentage point. In particular, it should be noted that countries as important as Mexico and Brazil had the same growth rate as the four advanced economies. Moreover, growth rates for Turkey and Thailand were on the decline, although these were still higher than the four reference countries. Thus, contrary to what is sometimes written, the period 1992-2008 was not characterised by a convergence that benefited all emerging countries, but by the dominance of the world's two most populous countries, who were the major beneficiaries. The example of Korea during the previous period showed that long-term growth rates of 6% were possible. But the radical change for the global distribution of income was the emergence of two economic powers: China and India that represented 50 times the population of Korea and that grew on average by 6.3% per year, against 1.7% in the four countries cited.

This new convergence was linked to a major event summarised by Freeman as follows: "almost all at once in the 1990s, China, India and the ex-Soviet bloc joined the global economy", which doubled the number of workers in the global economy. It was the entry of these two countries in the process of globalisation in 1990, at different speeds and in different contexts in each country, that resulted in China and India, as well as a number of emerging economies, such as Turkey, Thailand, Chile and many others with growth rates higher than those of advanced countries but with comparatively little demographic weight compared to China and India, catching up with advanced economies. Furthermore, the gap between average growth rates in advanced economies and those in Sub-Saharan African countries, which increased their export activities, declined significantly. Higher growth rates in China and India since the early 1990s is not related only to increases in the export of goods and services. Structural reforms aimed at transforming economies from command to market economies, and significant investment in education and physical capital played a key role in accelerating growth. India stands as living proof of this, having attained a growth rate of over 5% in spite of a much lower export/GDP ratio than China, where growth is export-driven, while the share of household consumption in the GDP remains low. Yet, without this openness to foreign markets and foreign investment, neither country would have achieved this level of growth.

During the same period, income inequality within advanced economies increased significantly in many countries and fell in none. Subsequently, the corresponding Theil measure for within inequality rose by 20% between 1992 and 2008, reducing by a quarter the effect of the decreasing Theil concerning inequality between countries. This increase in internal inequality can be attributed in part to factors unrelated to globalisation, such as increasing numbers of single-parent families, increasing correlation of wages inside couples, , and increasing correlation between working hours and employee skill level, which are independent factors. On the other hand, another important factor – technological progress – is also a much-debated issue. For some, it bears no relation to external openness; for others, the two are inextricably linked, since openness forces companies to invest more and more in technology in order to maintain a comparative advantage over foreign competitors, particularly competitors who are paying much lower wages.

A recent IMF study (2011) takes the view that openness to trade and technological progress has benefited advanced economies in a number of ways, including lower prices for consumer goods and stimulating growth, but that it has also presented disadvantages for middle-income earners, who have lost their jobs in industry and found themselves in service jobs that are generally unskilled or low-skilled positions paying low wages. Given that the service industry also creates highly skilled and very well paid jobs for a small minority, the result is a wage structure that is decidedly more unequal than before. The example of the five advanced economies Japan, the United States, Germany, France and the United Kingdom confirms this argument. The share of employment in industry fell from 2000 to 2007. This was also the case in Germany, which has a trade surplus. Empirical studies have shown that the decline in industrial employment was linked to an increase in imports of manufactured goods from emerging countries. The IMF study concludes that growing income inequality in most advanced countries was partly a consequence of the loss of manufacturing jobs due to imports. Furthermore, the study notes that the reallocation of labour from sectors of rapidly-increasing productivity towards slow-growth sectors will slow growth in advanced countries. The study, based partly on a recent article by Nobel laureate M. Spence (2011), therefore links increased inequality and slow growth to complete opening for

imports of manufactured goods.

However, many other factors may have affected income distribution in advanced countries from 1992 to 2008. According to an OECD study (2011) on this subject, we know that two important forms of state intervention did not increase inequality. The redistributive effect of household taxes and monetary transfers they received remained unchanged during this period. Similarly, the effect of transfers in kind in the form of education, health care and welfare services remained unchanged. The outcome of these two forms of intervention was therefore neutral.

The effect of changes in behaviour, such as the increase in the number of single-parent families, correlation of wages inside couples,, and increasing participation of women in the labour market was also neutral, since the disequalising effect of the former was offset by the equalising effect of this participation.

However, the OECD study (2011) highlights factors that contributed to increasing inequality. In addition to the pairing of technological progress and external openness, the role of which we have already seen, the liberalisation of the labour market and the goods and services market in many advanced economies since the 1980s significantly increased income inequality. The fact that employees worked longer the more skilled they were also played a role, albeit to a lesser extent. In contrast, progress in secondary and higher education reduced the wage gap. Table 2 summarises the evolution of inequality in a dozen advanced economies. First, it is clear that income inequality did not increase (or increased only marginally, e.g. 3% in France) in some countries: Korea, France, Italy, Japan and Norway. However, in most cases the Gini coefficient increased significantly, with Sweden leading the field (+17%), followed by Canada and Germany (+12%). All countries in which inequality increased opened their markets for goods, labour, and capital to external competition. This outcome is consistent with the Stolper-Samuelson theorem, since external opening leads these economies to specialise in capital-intensive industries that call for a highly skilled workforce, while the unskilled workforce loses its jobs in sectors where imports are replacing domestic production.

However, the surprising outcome is the absence of large rises in income inequality in this scenario. In Korea and Japan, the lack of significant growth in wage disparity can be explained by three factors: the nature of their labour markets (which are closed to foreign workers as result of strict immigration controls), traditional attitudes that prevent excessive rises in salary disparities [1], and agricultural protection policies.

Norway is an exceptional case because the country benefits from considerable oil revenues that contribute to generous social spending. The case of France is the most interesting because the country's economic and monetary environment is very similar to that of Germany. The difference between these two countries derives from their different policies. The French authorities chose to raise the minimum wage faster than the average wage, whereas this restriction does not exist in Germany. The French unemployment benefit system is more generous than its German counterpart, which was radically overhauled through reforms introduced by Gerhard Schröder. In France, around one quarter of families with assets over EUR 2.5 million have left the country in the last 30 years, reducing income inequality. Also, taxation on assets is heavier in France than in Germany. Thus, through a variety of means countries are able to offset in part the disequalising effects associated with opening their markets and technical progress. Consequently, we are left with rising inequality of primary income but no rise in inequality in terms of disposable monetary income. France stands as proof of this: in France, the Gini coefficient before taxes and transfers increased by the same extent as Germany (+12%)

1. Unlike in some English-speaking countries such as the United States, where wage disparity is not seen as such an issue.

from 1992 to 2008. However, after taxes and transfers are taken into consideration, this coefficient remained nearly unchanged, while it also grew by 12% in Germany.

The growth in inequality in most advanced economies, which was predictable due to the opening up to trade in goods, capital and labour, was accompanied by that in former socialist countries, which was also predictable. Indeed, from 1990-1991 the socialist countries of the former USSR and Eastern Europe moved towards a market economy and private ownership of the means of production, with some countries entering the global market, a second decision that was not automatically linked to the first. In any case, the first decision significantly increased income inequality, as shown in Table 2, which reveals large increases in the Gini coefficient in Poland and the Czech Republic. The same was true of Russia and Hungary.

In many emerging markets, inequality fell during the period 1992 to 2008 in line with the Stolper-Samuelson theorem, since external openness in these countries favoured the lower-skilled labour-intensive sectors. However, this theory does not apply to China, which can be seen as a special case. Over the period, inequality has grown due to the expansion of private capitalism and the deregulation of the labour markets as in the aforementioned countries – China being a transition economy. However, China differs in that, with a per capita GDP half or quarter that of the previously mentioned countries in 1992, it is ranked as an emerging economy, and that it also enjoyed exceptional growth from 1992 to 2008.

From 1990, China experienced rapid development in skilled-labour industries such as aviation, medical and measuring equipment, computers and electronics. The share of these products in the export market grew from a negligible percentage to almost 30% in 2008. China therefore developed both the traditional exports of a country rich in low-skilled labour such as textiles, clothing and toys, and the exports of an advanced economy. In addition, agricultural exports, a low-skilled labour-intensive industry, were prohibited. On the other hand, the authorities did not prioritise agricultural development, as was the case in Taiwan at the same stage of development, meaning that the productivity gap between the agricultural sector and other sectors grew rapidly during this period, resulting in growing income inequality between rural and urban areas.

Table 2 reveals the fall in income inequality in emerging countries that used globalisation to their advantage to achieve rapid export-driven growth. In all countries, the corresponding mechanism in the Stolper-Samuelson theorem played its part. However, in Latin America, this was accompanied by a new policy of cash transfers to the poor, which had a significant impact in highly inegalitarian societies where the share of the poorest 20% was well below their share in other countries. However, inequality fell to a similar extent in other countries such as Thailand and Turkey, in spite of the different context (lower baseline inequality and no radical change in welfare policy). These optimistic findings on the impact of exports in developing countries are consistent with the findings of a study by Bourguignon and Morrisson (1989), which analysed this impact in the light of the aforementioned theorem and demonstrated the positive effect on income distribution of export crops from small farms and export industries for manufactured goods.

This analysis of the evolution of within income inequality demonstrates the inherent complexity of the subject. The outcome, a moderate rise in within inequality, corresponds to trends in the opposite direction. This can be explained by the prevailing trend towards inequality in many advanced economies, linked in part to globalisation and in former socialist countries to transition, as well as the impact of China. These factors outweigh the opposing trends in emerging countries. Lastly, consider-

ation must be given to India, where inequality rose, due both to a form of transition experienced after 1991 following the deregulation of some markets and also to the orientation of activities towards external markets, namely IT services using highly skilled labour, existing alongside cheap labour used for the country's traditional exports.

2) The decline of poverty

Figure 7 offers a striking picture of the victory of humanity over poverty. For the first time in three centuries, the number of those in poverty and extreme poverty fell significantly. Indeed, the number of people in extreme poverty fell from 1,280 million to 760 million, representing 520 million people who were brought out of extreme poverty. At the same time, the number of those in poverty fell by 650 million (from 2,800 million to 2,150 million). Figure 8 provides a better overview of this decline in poverty, showing the percentages of those in poverty
and extreme poverty since the early seventeenth century, with poverty thresholds that are constant in real terms and chosen to obtain percentages that correspond to World Bank estimates for 1992. These percentages continued to decline over three centuries, falling, for example, from 95% to 51% for the poor in 1992. However, the growth in the world's population was so rapid, increasing nine-fold over this period, that the number of those in poverty continued to rise five-fold. It was only from 1992 onwards that the rate of poverty decline outstripped growth in the world's population, such that the numbers of those in poverty and extreme poverty were lower. This was the result of an acceleration in the decline in the percentage of those in poverty (and extreme poverty). Over a 16-year period, this fell from 51% to 32%, a gain of almost 20 points, whereas it had taken 170 years to achieve a drop of 40 points.

This reduction in poverty, however, was not uniform. Asia, in particular East Asia, accounted for most of the decline. In China, around one quarter of the country's population – over 300 million people – crossed the poverty line. Therefore, almost half of those in poverty crossing the threshold worldwide were in China. However, in Sub-Saharan African countries, poverty declined only slightly.

Part two: perspectives on poverty and inequality (present day to 2030).

1) Developments in global inequality

Since the reduction in global inequality from 1992 to 2008 was due solely to a fall in income inequality between countries, any forecast of trends over the next two decades will be based on the selections we make when forecasting average income in the countries or groups of countries in our database. We selected two assumptions, one worst-case (Maddison); the other (OECD) best-case. Maddison's forecasts were for per capita GDP in 2030, based on extrapolation of the growth rates observed between 1990 and 2003[2]; with a few adjustments, the main one being to reduce the rate for China to 4.5 from 7.5.

The OECD forecasts[3] extend to 2050 and are based on a constant returns Cobb-Douglas production function and on forecasts on trends in the stock of physical and human capital, and total factor productivity in each country. The result for the period 2008-2030 is higher growth rates by 1 to 2 points for China, India and Indonesia, and by 2 to 3 points for a number of African countries.

Assuming that income distribution within countries remains unchanged from 2008 to 2030, global inequality (measured by the Gini coefficient) will be the same in 2030 as in 2008

2. This method does not favour Sub-Saharan countries, most of which experienced economic stagnation during this period.

3. OECD (2009). The Economics of Climate Change Mitigation.

using Maddison's forecasts, with a drop in the share of the poorest 40% of people, reflecting the worst-case scenarios for Africa. However, using the OECD forecasts, global inequality will continue to fall, and the Gini coefficient will drop by more than 9% and the other two indicators by 20%. The share of the richest 10% will decrease from 50% to 45%, while the share of poorest 60% is forecast to improve by 4 points.

These results reflect only the differences in average income between countries but, as already seen for the period 1992-2008, it is important to also take into account changes in within income distribution. These evolved in the direction of inequality from 1992 to 2008, mitigating the decline in global income inequality. The same question must therefore be asked for 2008-2030: will within income inequality continue to rise? The question is by no means insignificant, given that internal inequality has already reached a level deemed unsustainable by some in countries as large as China and the United States. Our forecasts are based on a recent OECD study (2011) entitled The Causes of Growing Inequalities in OECD Countries. According to this study, wage disparities have increased in line with technological progress, deregulation of labour and goods markets, and have decreased in line with education. One secondary factor – the correlation between skill levels and working hours – has encouraged inequality. We have not taken into consideration other factors such as the increasing number of single parent families, growing pay equity and higher female participation rates in the labour market, because these factors offset each other. According to the coefficients obtained, the two most important variables are, in equal measure, deregulation and technological progress. We have assumed that, as liberalisation reforms had been pursued in most countries, this factor would no longer play a role in the future. Furthermore, all other factors were considered eliminated, leaving only technical progress. It was assumed that this trend would continue, resulting – according to the regression coefficients – in a growth in within inequality by 2030 of half that observed from 1992 to 2008.

For the other countries, the process was as follows:

For transition countries, stable distributions were assumed, as reforms had already been made. For emerging markets, stable distributions were also assumed, given that the trend observed before 2008 was a decline in inequality.

For other countries, the 2008 distributions were used, given that there was no visible trend in these countries for 1992-2008. Lastly, for the two largest countries, China and India, whose distributions have a significant impact on global income inequality, two assumptions were made: a stable Gini coefficient or a 4-point increase (from 0.48 in China and 0.41 in India). The latter assumption (increase) corresponds to the policy changes of prioritising advanced export activities requiring a skilled workforce, and the absence of a policy of massive transfers for the benefit of the rural sector. Stability, on the other hand, implies a rebalancing of the previous pattern of unequal growth.

Figures 5 and 6 show the development from 2008 (observed figures) to 2030 based on these assumptions. We will consider here both the potential decline in income inequality between countries and increasing within income inequality. Depending on whether China and India develop towards a pattern of as unequal or less unequal growth, the Gini coefficient decreases by 7% or 9% when we accept the OECD growth forecasts. The decrease of 7% in the Gini coefficient results in 14% to 17% for the other two indicators. The share of the richest 20% falls from 67.5% to 61%. In a best-case scenario, global inequality would return to its 1870 level, and more than a century of hikes would be erased.

Yet the picture is much gloomier if we use Maddison's forecasts: in this case, global inequality would increase (+2% for the Gini coef-

ficient and much more for the other indicators). The share of the poorest 40% would decrease and that of the richest 10% would grow. Indeed, the effects of stagnation in the poorest countries (Africa) are combined with rising within inequality in many advanced economies, and in China and India. These results reveal that the continued decline of global inequality is not assured. The combination of stagnation in poor countries and increasing within inequality in "heavyweight" countries may lead to an increase in global inequality. Though this is likely to be slight, the growing gap in average income between poor countries and advanced economies (which has a significant impact on migratory flows) and the increase in within inequality, which is already very high in China, the United States and the UK, would have unpredictable political and social consequences.

To appreciate these scenarios, it is useful to indicate the respective shares of inequality between countries and within countries in total global inequality. In an optimistic forecast, income inequality between countries will play a minor role in 2030: its share in total inequality will fall to one third, compared to two thirds in 1992 and more than half in 2008. Standing at one third, the contribution of inequality between countries returns to its share in 1890. This means that, as was the case in the nineteenth century, inequalities within each country will play the biggest role. We will be faced with a situation in which each individual's rank in their country's distribution will play a key role. In contrast, according to Maddison's worst-case forecasts, the contribution of inequality between countries to total inequality will remain slightly over the 50% mark.

2) Developments in poverty

Figures 9 and 10 show the outcomes of the growth forecasts. Using the OECD's best-case scenarios, the number of those in poverty is expected to fall by half from 2 billion to 1 billion, with the virtual disappearance of extreme poverty as the number of those in extreme poverty falls to 140 million. In percentage terms, this equates to a drop in the percentage of those in poverty from 32% to 12%. The latter percentage demonstrates the progress achieved when compared to the very recent figure for 1992 (51%). In contrast, on the basis of Maddison's forecasts, the numbers of those in poverty and extreme poverty remain stable. The only progress is in terms of percentages: as the world population grows, a slight decrease can be observed. However, after the success of the 1990s and 2000s, the number of those who remain in poverty and extreme poverty are a cause for concern, and in this respect no progress is observed. There is even a slight increase in the number of those in extreme poverty. These results relate to Maddison's worst-case forecasts for growth in Sub-Saharan Africa, where the number of those in poverty and extreme poverty continues to grow, while they are forecast to fall in Asia.

Conclusion

Five lessons can be learned from the developments of 1992 to 2008.

- For the first time since the early eighteenth century, global inequality stopped growing and even fell significantly.
- The reason for this decline was the fall in income inequality between countries, a phenomenon related to globalisation, which benefited emerging countries and China.
- Within income inequality rose in many developed countries due to several factors, including globalisation, but this increase merely mitigated the effects of a sharp reduction in inequality between countries.
- For the first time since the early eighteenth century, the number of those in poverty and extreme poverty fell significantly.
- Globalisation and other factors have led to a rapid decline in the number of those in pover-

ty (and extreme poverty) in East Asia, while the number of those in poverty in Africa continues to rise. These changes have also led to an increase in the share of East Asians among the world's richest 10% or 20%, while the share of people in advanced economies in this group is in decline.

The evolution of global inequality and poverty in the future will depend largely on the growth of the respective countries. This is clear when we compare the effects of the two hypotheses – those of Maddison and OECD – on global inequality and poverty. Simulations show that the key variables are changes in African countries and in emerging countries.

If we take Maddison's data sets, changing only the data on GDP per capita in African countries (and substituting it with OECD data), this is sufficient to halve the gap between the best-case and worst-case scenarios for global income inequality, and thus ensure a small decline in global inequality rather than an increase. Africa's demographics also play a significant role. Assuming that population growth in African countries is in line with the global average (in all, an increase of 26% instead of almost 70%), this implies a reduction of one quarter in the gap between the best-case and worst-case scenarios for income inequality.

Development in emerging countries and in the two largest countries in the world is the second key factor. A gap of 4 points according to OECD compared with 2 from Maddison for comparison of China and India with the United States, Germany, France and the United Kingdom accounts for a large proportion of the gap in the results. If we use the OECD's growth rates for China and India rather than those of Maddison, and retain the rest of his data set, the Gini coefficient falls by 2% and the Theil index by 5% in 2030 compared to the values obtained by using Maddison's data sets in their entirety.

Current IMF forecasts for 2011-2015 (still subject to review) for African countries and China are much more optimistic than those of Maddison. However, one may question the forecast of continued GDP per capita growth in African countries to 2030 at the same rate as that achieved in 2009-2011 (over 2%). The recent overall GDP increase on the continent is linked to the boom in the price of raw materials and export volumes due to demand from Asian countries, in particular China. Should demand fall, the growth rate in African countries is likely to fall. However, the economic structures of these countries have not changed: the share of industrial production in the GDP remains as low as before. In contrast, Asian countries have already conquered market opportunities in advanced countries that African countries are no longer able to win; except through special tariff agreements. On the other hand, the domestic market for these products is limited by the lack of integrated regional unions (EU, NAFTA etc.) and low household purchasing power.

The rapid growth of emerging countries, including China, runs the risk of being slowed by a reduction in the opening-up of advanced economies to their exports. The rapid increase in within income inequality in the majority of these countries, and the loss of jobs in industry that provide the average income attributed by the IMF itself to imports, may trigger reactions that are hostile to globalisation. It should not be assumed that these reactions can be avoided through a reduction in global income inequality or through a rapid decline in poverty, such as those observed from 1992 to 2008. An employee who must accept a poorly paid service job or live on unemployment benefit will not be receptive to the market liberalisation that is responsible for it, whatever the benefits of globalisation in emerging countries.

This does not mean that the most unequal advanced economies will convert to protectionism. But we can reduce the degree of openness by taking as an example countries that have restricted the opening of markets for certain products or labour. In Korea, Japan and Switzerland,

some agricultural products are protected. The first two countries do not allow immigration; Switzerland does accept immigrants but most are of European origin and are often required to be highly skilled in the areas that are needed for the production of upmarket goods and services. Taking into account growth, inequality, social stability and poverty, the performances of these countries are possibly superior to those of the most open and most unequal countries. A reaction against growing inequality could, therefore, slow down certain flows of goods, services or labour. Certainly, much higher spending on social welfare could alleviate the human costs of globalisation in advanced economies. But budget deficits in countries like the United States or the UK are such that the use of transfers does not appear to be a solution. Consequently, the opportunities enjoyed by emerging countries in exporting to advanced economies could be reduced, along with the growth rates of these countries. This commentary on the political economy dimension of internal inequality would suggest that the most likely evolution of global inequality will be more favourable than that predicted from Maddison's data sets, but less favourable than that forecast by OECD sets.

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Annexes

	1960-1992	difference	1992-2008	difference
United States,Germany, France, United Kingdom	2,4		1,7	
China, India	2,4	0	6,3	4,6
Indonesia	2,9	0,5	2,8	1,1
Pakistan	3,1	0,7	1,7	0
Thailand	4,1	1,7	3,2	1,5
Turkey	3,6	1,2	2,3	0,6
Brazil, Mexico	2,4	0	1,7	0
Sub-Saharan Africa	0	- 2,4	1	- 0,7

Table 1: GDP per capita growth rates

Advanced economies	
Sweden	+ 17 %
Canada, Germany, Denmark, Netherlands	+ 12-13 %
Australia, United States, United Kingdom	+ 8-9 %
Korea, Japan, France, Italy, Norway	stable
Transition economies	
China	+ 24 %
Russia	+ 22 %
Hungary	+ 7 %
Poland	+ 16 %
Czech Republic	+ 25 %
Emerging markets	
Brazil, Mexico	- 7-8 %
Chile	- 3 %
Peru	- 11 %
Thailand	- 5 %
Turkey	- 17 %

Tableau 2: Variation du Gini de 1990-92 à 2008

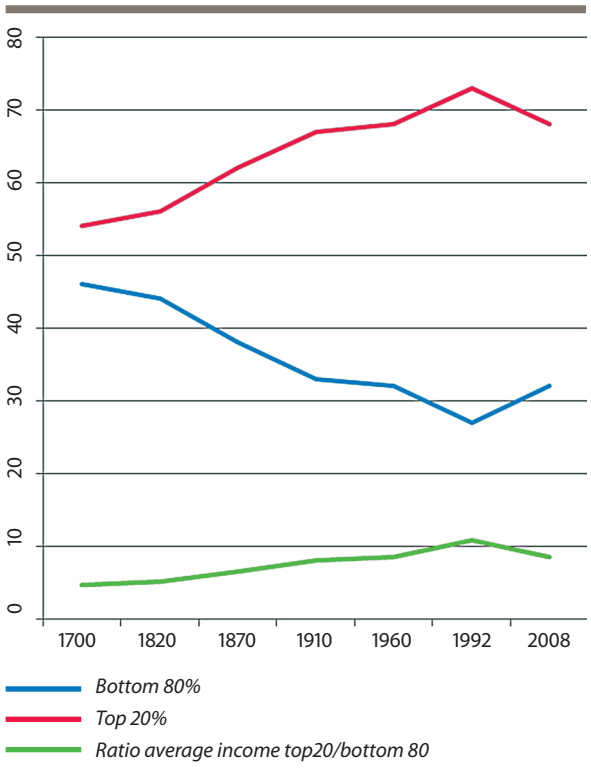

Figure 1: Share of poorest 80% and richest 20% of global population

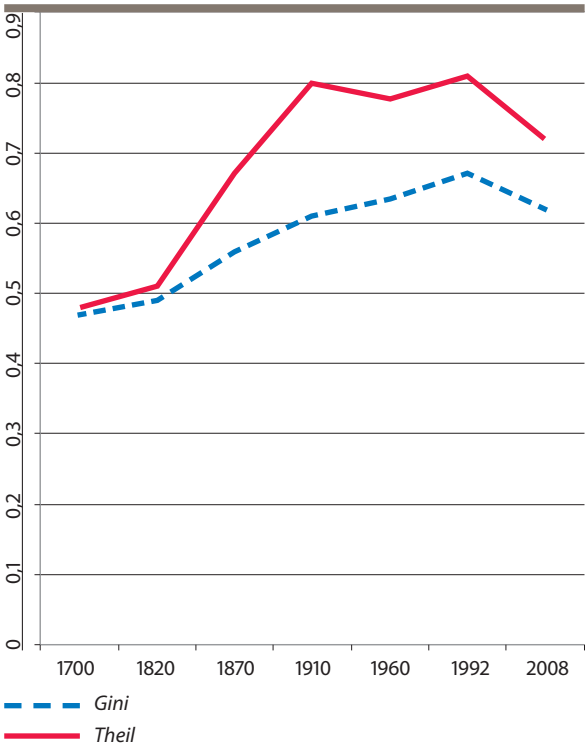

Figure 2: Inequality indicators (1700-2008)

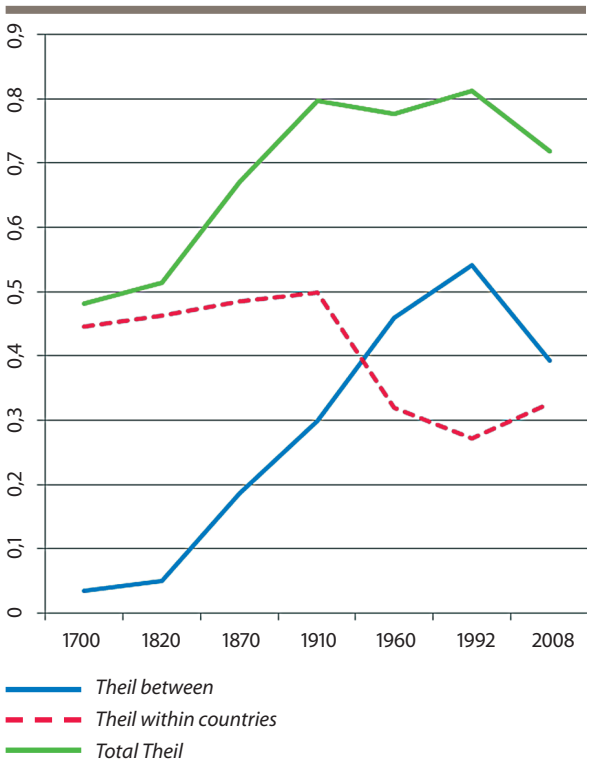

Figure 3: Inequality in and between countries 1700 to 2008 (Theil)

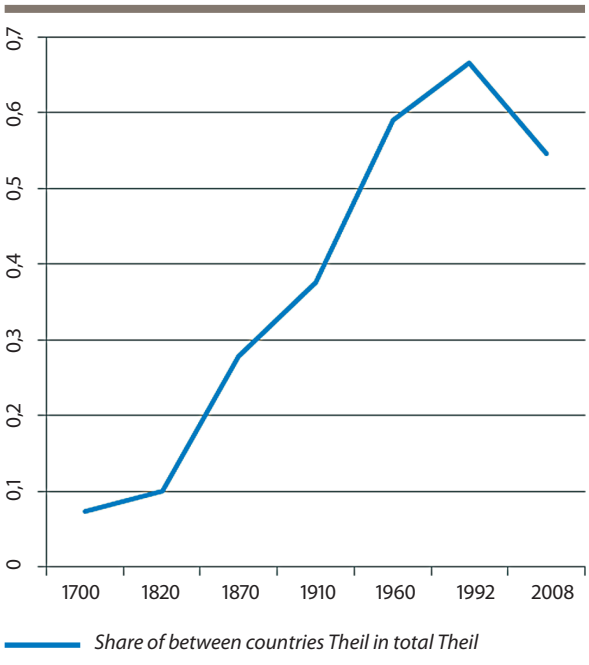

Figure 4: Share of Theil between countries

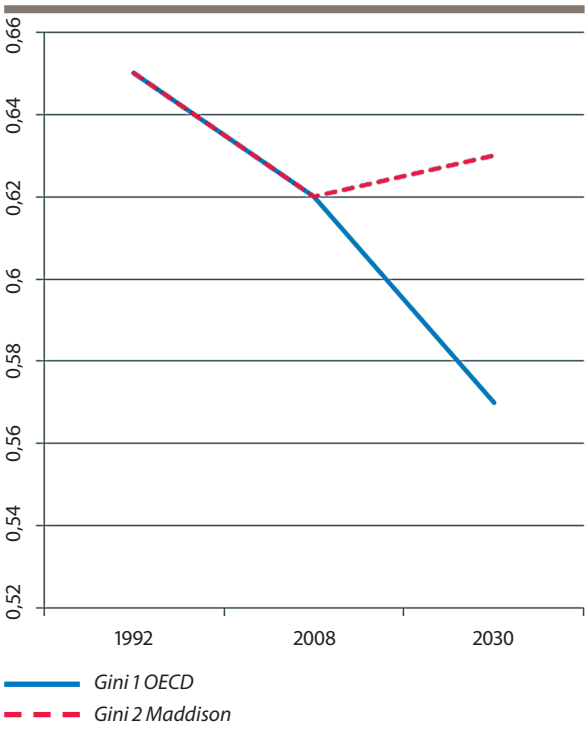

Figure 5: Inequality indicator 1992 to 2030

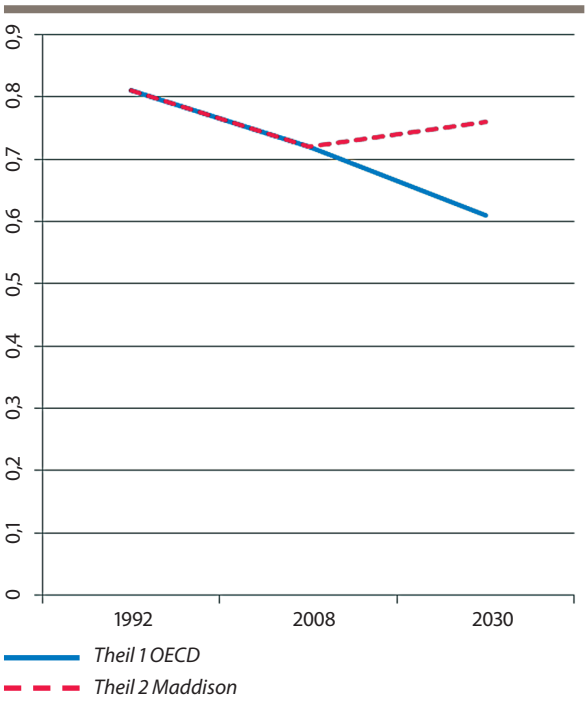

Figure 6: Inequality indicator 1992 to 2030

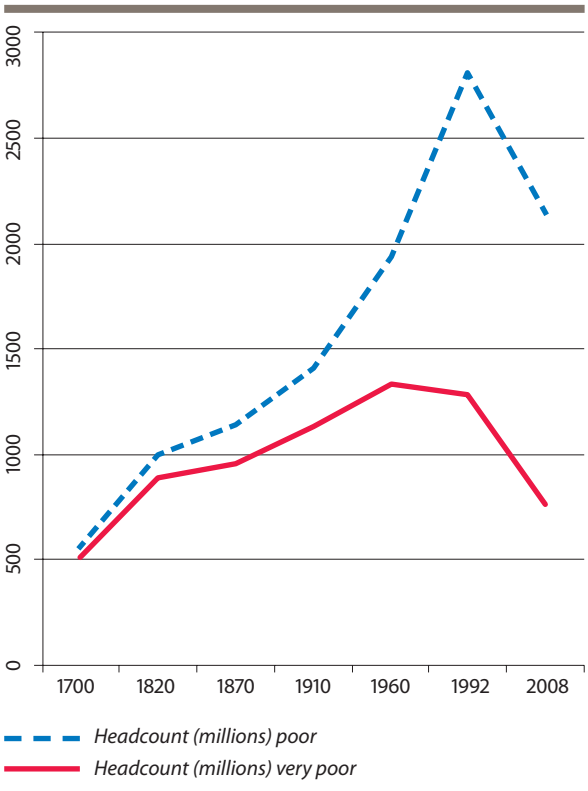

Figure 7: Number of those in poverty

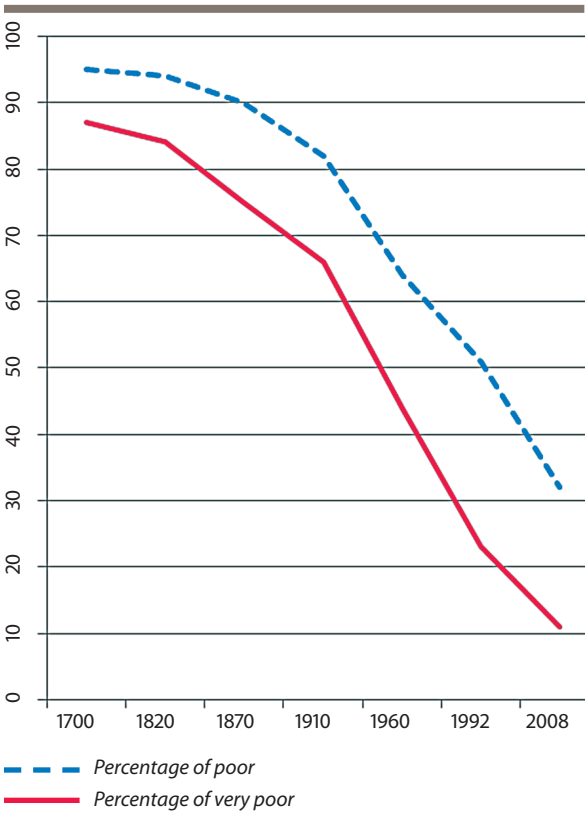

Figure 8: Percentage of those in poverty worldwide

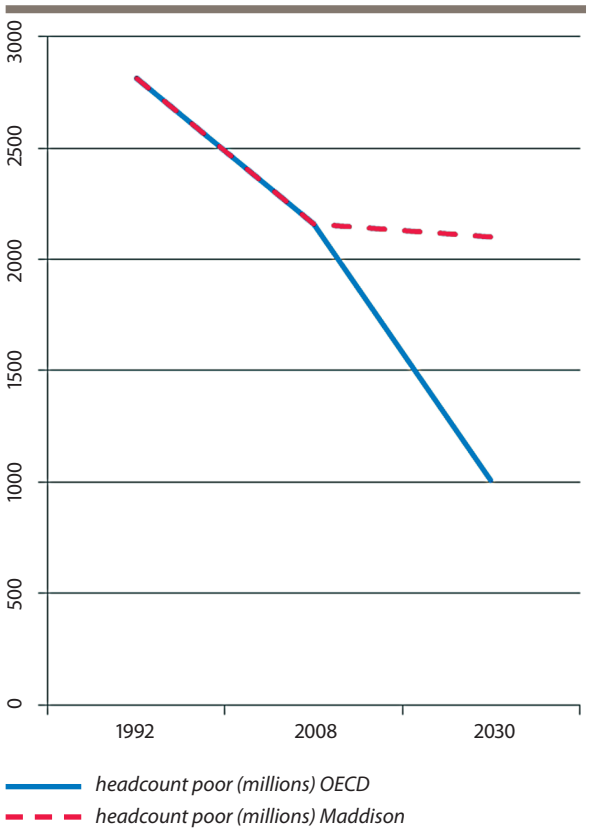

Figure 9: Number of those in poverty (2030)

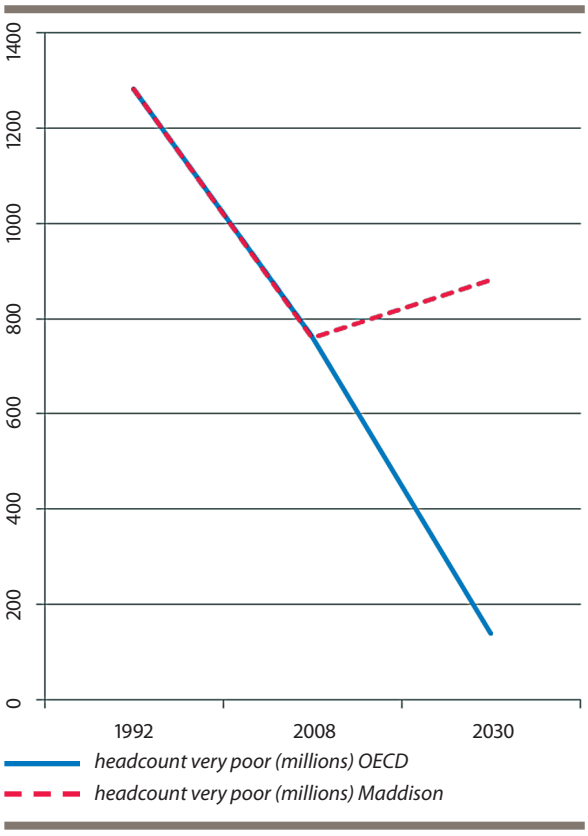

Figure 10: Number of those in extreme poverty (2030)

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