Rothschild & Co
Asset Management

ESGnomics

January 2023

Foreword

Climate change, reduced inequality and better governance are all challenges to making our world more just and sustainable in the future, and Rothschild & Co is committed to this goal.

The Group's economic research is part of this approach, providing analysis on the main risks and opportunities to which economic players are exposed. ESGnomics aims to convey in an educational manner the contributions of economics to the discussion of Environmental, Social and Governance issues.

The inequality-growth nexus in an era of global warming

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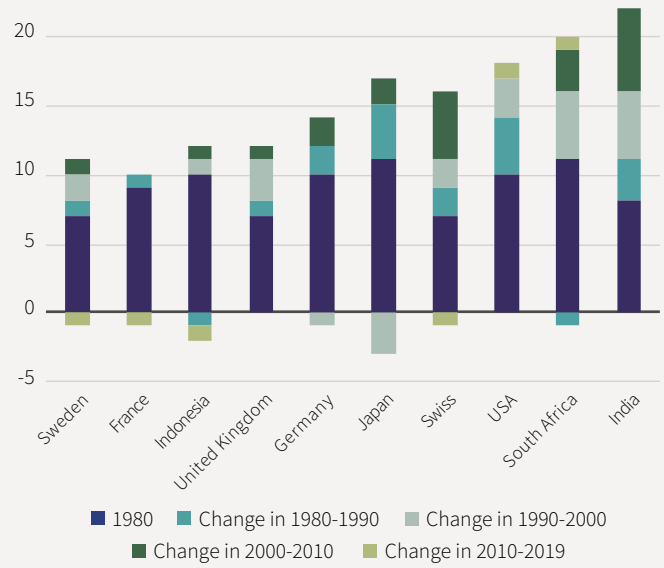
Inequality is getting worse. In the 1980s, the richest 10% of the population in OECD countries earned 7 times more than the poorest 10%. They now earn nearly ten times more and differences are particularly pronounced in some countries where the share of incomes at the very top has surged(1). Although redistribution played an important role in cushioning the worsening trend in advanced economies, the Gini coefficient(2) stood at an average of 0.29 in OECD countries in the mid-1980s and increased to almost 0.32, thus rising almost 10%.

World – Top 1% Income Share (1980-2019)



Source: World Top Income database, IMF, December 2022.

What are the causes?

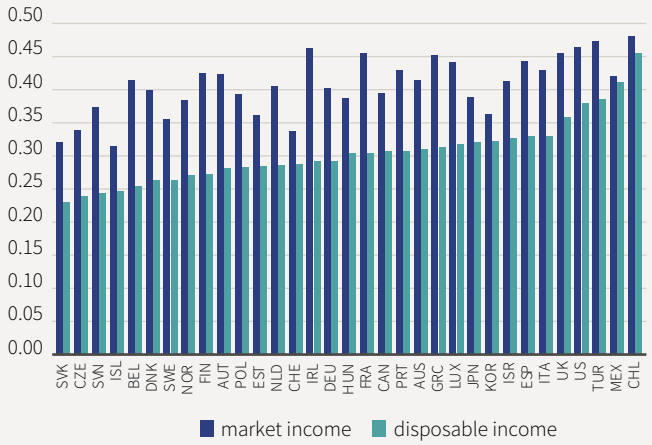
Assessing the possible causes of increased inequality is hazardous as many factors are at play, often taking multiple pathways. That said, rapid integration along global supply chains and, even more so, fast and transformative technological change have resulted in a polarisation of jobs, a major source of widening inequality.

Over the past decades, technology has reduced the costs of transportation, and improved automation and communication dramatically. However, technological advances have been found to have contributed to rising income inequality in OECD countries, possibly reflecting the fact that it has been accompanied by skill-biased technological change. Indeed, technology have disproportionately raised the demand for capital and skilled labor over low-skilled and unskilled labor by eliminating many jobs through automation or upgrading the skill level required to attain or keep those jobs(3).

> “Technological advances have been found to have contributed to rising income inequality in OECD countries...”

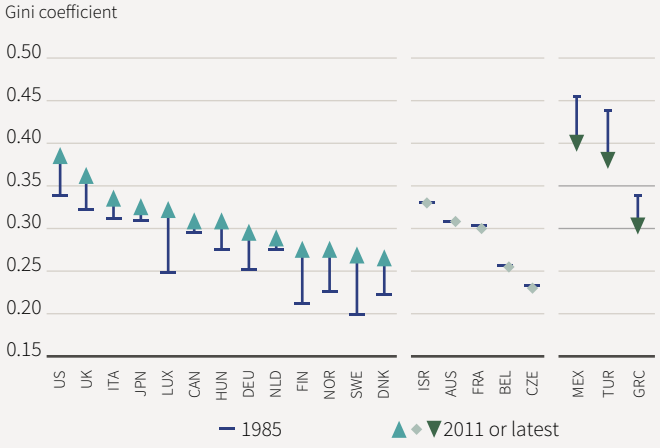
(1) OECD, “Under Pressure: The Squeezed Middle Class”, 2019.
(2) The Gini coefficient is a standard measure of income inequality that ranges from 0 (when everybody has identical incomes) to 1 (when all income goes to only one person).
(3) Card, D., and J. E. DiNardo, “Skill Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles.” NBER Working Paper 8769, 2002; Acemoglu, D. “Why Do New Technologies Complement Skills? Directed Technical Change and Wage Inequality.”, Quarterly Journal of Economics 113 (4), 1998.

World – Gini coefficient



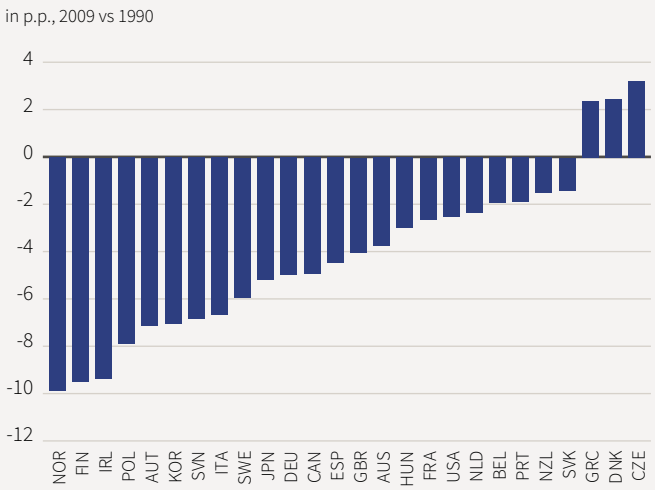
Source: OECD, December 2022.

World – Evolution Changes in inequality



Source: OECD, Rothschild & Co Asset Management Europe, December 2022.

World - Labor share change in GDP



Source: OECD Employment Outlook 2012.

Meanwhile, trade has been an engine for growth in many countries by promoting competitiveness and enhancing productivity. New markets have opened and hundreds of millions of people have been lifted out of poverty. Nonetheless, high trade, partly enabled by technological advances, are commonly cited as driving income inequality as firms, especially in the manufacturing sector, were able to adopt labor saving technologies and offshoring[4].

Increased financial flows, particularly foreign direct investment (FDI), have also been shown to increase income inequality[5]. One potential explanation is the concentration of these flows in relatively higher skill- and technology-intensive sectors, which pushed up the demand for and wages of higher skilled workers.

Climate change and inequality

The climate affects certain sources of income (particularly agricultural) and can lead to the destruction of habitat or physical capital. In general, low-income countries and the poorest individuals are the most vulnerable to the impacts of climate change, therefore further exacerbating existing inequalities.

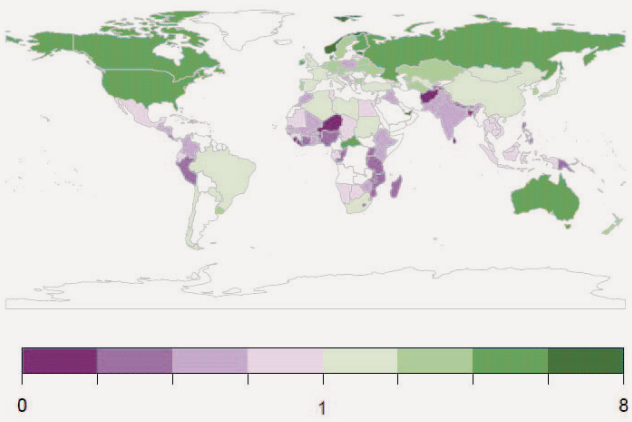
Indeed, because of their location, low-income countries are the most exposed to water stress, the intensity of droughts, heat waves, loss of agricultural yields and the degradation of natural habitats. In addition, the significant economic weight of the primary sector (agricultural, forestry and fishing sectors) in these countries makes them particularly vulnerable.

For their part, poor households have to deal with several effects of global warming, such as the increase in the price of agricultural commodities resulting from lower yields. What's more, they are particularly sensitive to variations in these prices since they spend a large part of their income on food. Meanwhile, these households rarely benefit from insurance mechanisms or access to basic health services that can mitigate price or income shocks. Correspondingly, in the event of damage caused by a natural disaster, they are forced to draw from their own financial wealth[6]. Furthermore, in the event of climatic hazards, they are more affected by diseases such as malaria, or water-borne diseases[7].

In short, the impacts of climate change have an amplifying effect on inequalities – between and within countries.

(4) Feenstra, R., and G. H. Hanson, "Global Production Sharing and Rising Inequality: A Survey of Trade and Wage.", Handbook of International Trade, 2003; "The Impact of Outsourcing and High-Technology Capital on Wages: Estimates for the United States, 1979–1990.", Quarterly Journal of Economics 114 (3), 1999
(5) Freeman, R., "Does Inequality Increase Economic Output?", Controversies about Inequality, Stanford University Press, 2010
(6) Guivarch, C., N. Taconet, « Inégalités mondiales et changement climatique », Revue OFCE, 2020
(7) Hallegatte S, M. Bangalore, M. Fay, T. Kane, L. Bonzanigo, "Shock waves: managing the impacts of climate change on poverty", World Bank Publications, 2015

Contribution and reception of global warming impacts



Note: The Emission-Emergence ratio (logarithmic scale) relates the contribution of emissions to future impacts. A value greater than 1 means that a country is relatively more responsible for global warming than it will be impacted.

Source: Frame et al., 2019.

Why inequality matters?

At a theoretical level, the prevailing view in the 1950s and 60s was that greater inequality could benefit growth through different mechanisms. For instance, inequality would generate an incentive to work and invest more as people with a higher level of education have higher productivity and thus higher wages, and differences in the rate of return would encourage more people to attain a higher level of education.

However, several studies have subsequently warned of the negative effects of inequality as it would instead dampen investment, and hence growth, by fuelling economic, financial, and political instability. For instance, an IMF study found an inverse relationship between the income share accruing to the rich and economic growth, suggesting that the benefits do not trickle down[8]. For its part, an OECD analysis suggested that income inequality has a negative and statistically significant impact on medium-term growth[9].

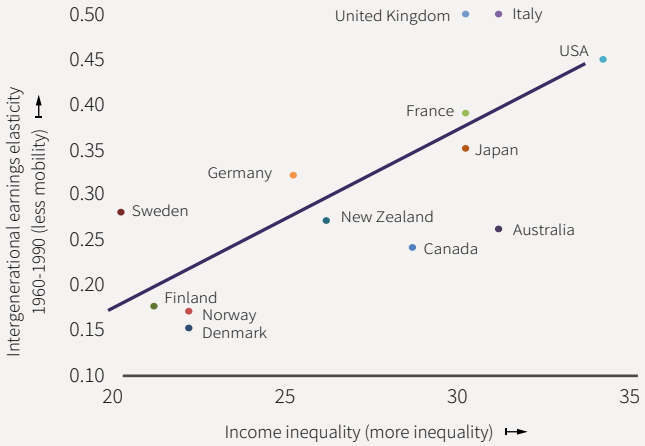
> “The increase in incomes’ concentration could reduce aggregate demand and undermine growth...”

In fact, a growing body of evidence suggests that higher inequality lowers growth by depriving the ability of lower-income households to stay healthy and accumulate physical and human capital[10]. For instance, it can lead to underinvestment in education as poor children end up in lower-quality schools and are less able to go on to college. As a result, labor productivity could be lower than it would have been in a more equitable world[11]. In addition, countries with higher levels of income inequality tend to have lower levels of mobility between generations, with parent’s earnings being a more important determinant of children’s earnings[12].

Correspondingly, the increase in incomes’ concentration could reduce aggregate demand and undermine growth, as top-earners spend a lower fraction of their incomes compared to middle- and lower-income groups.

(8 IMF, “Causes and Consequences of Income Inequality: A Global Perspective”, 2015
(9) Cingano, F., “Trends in Income Inequality and its Impact on Economic Growth”, OECD Social, Employment and Migration Working Papers, No. 163, 2014
(10) Galor, O., and O. Moav, “From Physical to Human Capital Accumulation: Inequality and the Process of Development.” Review of Economic Studies 71 (4), 2004; Aghion, P., E. Caroli, and C. Garcia-Penalosa, “Inequality and Economic Growth: The Perspective of the New Growth Theories.” Journal of Economic Literature 37 (4), 1999
(11) Stiglitz, J., “The Price of Inequality: How Today's Divided Society Endangers Our Future”, New York: W.W. Norton, 2012
(12) Corak, M., “Income Inequality, Equality of Opportunity, and Intergenerational Mobility.” Journal of Economic Perspectives 27 (3), 2013

World – Income inequality and social mobility



Source: Corak (2013), Organisation of Economic Cooperation and Development, IMF, December 2022.

> "New job opportunities will emerge with further penetration of new digital technologies..."

Uncertain future

Looking ahead, the prospects of inequality look uncertain. Already in the past two decades, the shift in employment towards high-skilled and low-skilled non-routine jobs has displaced middle-skilled jobs which are often held by the middle-class. In the future, many new job opportunities will emerge with further penetration of new digital technologies – artificial intelligence, machine learning – but many jobs are likely to be automated or profoundly overhauled.

Another open question relates to climate change and the carbon transition. On the one hand, the labor market may suffer as a consequence of the decarbonization in energy-intensive industries. However, the carbon transition could also spur investment and opens up new opportunities.

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