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Inequality: an assessment

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Abstract: Concern about inequality, particularly inequality of income and wealth, has become prominent in public discourse around the world. This article first discusses issues of measurement and goes on to ask why we should care, emphasizing fairness and the market distortions and negative externalities found in unequal societies. It documents that the decline in global inequality in recent decades has been due to falling inequality between, rather than within, countries. The popular picture of rising inequality in OECD countries is more varied and complex than often perceived. Its drivers include aspects of globalization and of technological change as well as changes in the distribution of market power, in financial markets, public policy, and monetary policy. There are two over-arching questions about how governments can address inequality. The first is what should be tackled at the international level and what should be the preserve of national policy. The second is what should be the balance between pre- and post-market interventions. Both have a role but generally the balance has been too skewed towards the latter.

Keywords: inequality, fairness, globalization, technology, intergenerational mobility, policy

JEL classification: D31, D63, F60

I. Introduction

Inequality and its consequences have been prominent in recent political discourse. The 2008 financial crisis saw global unemployment rise. Since then, a decade of extremely loose monetary policy lifted asset prices while real wages stagnated, and the business landscape appeared to become dominated by a small number of technology companies collecting extraordinary network rents. In this climate, inequality has been increasingly a focus of political movements including: protests like the UK's anti-austerity marches in 2010–11, the US's 'Occupy Wall Street' in 2011, and France's *gilets jaunes* in 2018; secessionist movements in Scotland and Catalonia; the election of populist leaders in Poland, Hungary, Italy, and the US; and the decision of the UK in 2016 to leave the EU. In response leading scholars have recently released a number of popular texts on

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inequality (Pickett and Wilkinson, 2010; Stiglitz, 2012; Atkinson, 2015; Milanovic, 2016; Wilkinson and Pickett, 2018), with one reaching the top of the *New York Times* bestseller list (Piketty, 2014). This issue of the *Oxford Review of Economic Policy* investigates inequality around the world, the forces driving it, and how policy should respond.

The first challenge is one of definition. Piketty, for example, discussed inequalities of income and wealth. There are many other forms of inequality that cause concern, including inequalities of consumption, education, health, and opportunity, even of happiness or utility. This issue of the *Oxford Review* focuses primarily on income and on wealth, though other variables will be important in the analyses offered by the various papers.

Section II of this assessment discusses how inequality is defined. Section III considers why it matters, both in and of itself and for its economic, social, and political consequences. Section IV examines what has happened to inequality in recent decades. Thomas McGregor, Brock Smith, and Samuel Wills (2019, this issue) state that overall global inequality among the world's 7.6 billion citizens has fallen only slightly over the past 30 years. Most of this slight fall has been driven by declining inequality between, rather than within, countries, as discussed in this issue by McGregor *et al*., Ravi Kanbur (2019), Davide Furceri and Jonathan Ostry (2019), and Brian Nolan and Luis Valenzuela (2019). Developments within countries have varied widely across nations. Furthermore important changes can be hidden within any chosen aggregate, as Polina Obolenskaya and John Hills (2019, this issue) remind us when demonstrating that the stability in overall inequality in the UK over the past two decades masks deeper changes in inequality between regions, ages, and ethnicities. At the same time, as Richard Breen (2019, this issue) shows, the intergenerational transmission of advantage and disadvantage remains very significant.

Section V considers the drivers of inequality. Our authors offer a wide array of candidates. Furceri and Ostry argue that it is difficult to identify these drivers due to model uncertainty, but point to important roles for the stages of economic development, demographics, technology, globalization, fiscal policy, and structural reforms. To these Nolan and Valenzuela add financial market influences and capital income; Joshua Gans, Andrew Leigh, Martin Schmalz, and Adam Triggs (2019) and Sean Ennis, Pedro Gonzaga, and Chris Pike (2019)—both papers in this issue—add market power; and Ravi Kanbur skill-biased technical change. This assessment concludes in section VI with a discussion of how inequality might be addressed. This involves two over-arching questions: whether it should be tackled by interventions at a national or an international level, and whether these interventions should be made pre- or post-market.

II. What is inequality?

McGregor *et al.* (2019) define inequality as a property of a variable's distribution, within a population that—for ease of analysis—is typically summarized in a single statistic. The choices of which variable, which population, and which statistics are important, as they can give widely differing results. Therefore, the way that inequality is defined and measured should be dictated by the ultimate reason for studying it. In the case of income, not only does it matter which of its many forms we are investigating—market, original, disposable, or final—but so too do its origins: whether, for example, it is from capital, from labour, or from the canny squirrelling away of rents. Inequality in these variables can be measured for different populations: globally, between countries, and within countries.

For any given variable, one's perception of the extent of inequality can critically depend upon the precise measurement used. The Gini coefficient is perhaps most often used, but comparisons of two separate coefficients can hide a lot of valuable information, most commonly when the Lorenz curves intersect. Similarly, two identical Gini coefficients may hide very different top decile to median ratios or median to bottom decile ratios. Moreover McGregor *et al.* (2019) emphasize that it can be challenging to collect the appropriate data. A lot of early work on the topic relied on single cross-sections of data across countries, which makes it difficult to control for the many relevant country-specific issues (such as institutions or the provision of public services). Panel data solve a number of these problems, while new data sources are enabling detailed, well-identified sub-national studies, making natural (and actual) experiments possible. Economists studying inequality may also benefit from the extensive work done on the topic in fields such as psychology, health care, sociology, and anthropology.

III. Why should we care about inequality?

Some inequality in income provides the price signals that allocate capital and labour to their most productive uses. Policy-makers therefore have to ask why they (and we) should care about it. Put crudely, is there some optimal level of inequality at any given time in any given country?

Typically, there would be most agreement about the need to intervene if inequality is linked to absolute poverty. The UN has adopted targets for reducing absolute or extreme poverty. Parts of the developed world have also adopted targets for reducing or eliminating relative poverty—defined in the UK and the EU as having less than 60 per cent of equivalized income. In this issue Kanbur (2019) makes the point that, more than in the past, addressing absolute poverty does in fact require addressing inequality more generally, since the development of China and India mean that most of the world's poor now live in middle-income countries. This matters, because the responsibility for tackling absolute poverty may be switching from international organizations to national governments.

(i) Inequality matters for its own sake

Beyond the link to absolute poverty, inequality resulting from lack of fairness also matters, both to the public and by extension to the politicians for whom they vote (for a recent analysis of these issues, see Cappelen and Tungodden (2019)). The problem is that fairness is a vague word. A popular dictionary definition is: 'the quality of treating people equally or in a way that is right or reasonable'. But what is right or reasonable is contestable.

The widely used utilitarian social welfare function provides a starting point for economists' thinking about this. In the simplest setting, where everyone has the same utility function with diminishing marginal utility, the allocation of income and wealth that achieves maximum social welfare is perfect equality. As we move away from this setting, where individuals have different utilities from income, and dis-utilities from labour, some degree of inequality will be consistent with this maximum. However, this will always be limited by the steepness of utility functions at very low incomes (which become vertical as they approach subsistence levels), and the flattening of utility functions at very high incomes.

In this context, perhaps most widespread agreement can be found in the idea of a level playing field, or 'equality of opportunity'. In most places people's labour market and economic fortunes are heavily influenced by their family origins and education. Ameliorating this has proved and is proving a formidable problem for policy, to which we return later. Equality of treatment when applying for jobs and engaging in other economic, educational, and social transactions may be easier for policy-makers to affect. However, multiple examples indicate that in practice this can be very difficult. For example, unconscious discrimination in hiring decisions is now a well-understood phenomenon and yet successful measures to counter it have proved to be elusive.

The level playing field is closely related to the 'capabilities approach' to welfare, starting with Sen (1985). This argues that, rather than focusing on outcomes such as utility, policy should focus on people's ability to pursue their own goals, taking into account differences in individual abilities and the multivariate nature of happiness. In particular, the capabilities approach gives particular weight to the intrinsic value of rights and freedoms, which in a purely utilitarian approach would only matter to the extent that those rights and freedoms are exercised. Poverty is seen as a deprivation of capabilities, and inequality describes the variation in capabilities. In this setting, two people who have access to exactly the same material resources may have vastly different capabilities, due to differences along dimensions such as talent, age, gender, race, religion, or physical capability.

Rewarding people fairly for the fruits of their labour is also a slippery concept. Monopsony has been a convenient way for economists to think about this—the idea that employers can pay less than a worker's marginal product if that worker is, for whatever reason, immobile between employers. In most developed economies minimum-wage policy acknowledges that monopsony is something to be addressed, but the political right often attempts to limit the extent to which this happens and this endeavour is helped by the reality that the extent of monopsony in any given situation is hard to pin down. Indeed, in the labour market more broadly the interpretation of fairness would be contested. In the absence of perfectly competitive labour markets, outcomes depend on the relative bargaining power of employers and workers, with no necessary agreement as to whether that balance is right or wrong. These outcomes can and do lead workers to believe that they are not being paid a 'fair wage'.

And ideas of fairness may extend way beyond the idea of a level playing field. The historic solidaristic wage policies of Sweden emanated from a societal view that inequality in market outcomes should be limited. Similarly, sectoral collective bargaining arrangements in the Netherlands effectively limit pay differentials. These are two examples of what Atkinson (1999) dubbed 'the pay norm model' based on a 'social code'. This norm involves workers being paid a fraction of their productivity plus a constant amount. It depends on employers valuing their reputations and complying with the social code.

Whatever emerges in terms of market incomes, families' living standards will depend on the prevailing tax and social security regimes. Views will differ as to how generous social security payments should be and on whether the degree of progressiveness in a tax system is fair or not, and again economists would tend to formulate these issues in terms of social welfare functions. At the same time, optimal tax theory accepts that judgements need to be made about trade-offs between the extent of redistribution and the consequences for efficiency, as does the research on potential disincentives embedded within a broader social welfare regime.

(ii) Inequality also matters due to its consequences

Governments have to take a view not only about what is fair or unfair, but also about the consequences of inequality. As noted above, the extreme would be if an unequal income distribution resulted in some of the population falling into absolute poverty. In most societies there would also be concern if large numbers lived in relative poverty. Beyond the poor there are those who are 'just managing', to use a phrase recently coined by British politicians. These are the so-called 'precariat'—people who are not in poverty but for whom one event could project them into that situation.

In addition to those immediately at risk are those who resent the fact that they are not getting, as they see it, their just deserts. Or, perhaps even more powerfully, those who perceive that others are getting more than they merit—the city slickers, the chief executives, the football players. Such resentment is not a simple function of the extent of inequality. A more equal society can breed more resentment of this sort than a less equal one. The degree of resentment will depend on many factors. One important consideration is the impact of the super-rich on the attitudes of people in the middle. Certainly two or three generations ago, before the age of mass media, the average person's reference group was more restricted, largely composed of people in similar circumstances to themselves. Today, feelings of relative deprivation are formed against the experiences of a wide array of comparators.

Recently, therefore, there has been great debate about the political consequences of inequality: disillusionment with the political establishment and with systems of government more generally. The rise of the extreme right in many western European countries, the Brexit vote in the UK, and the election of President Trump in the US have all been attributed, at least in part, to such disillusionment. Last year, the World Bank's Chief Executive, Kristalina Georgieva, pointed out that while there had been convergence between the incomes of the richer and the poorer EU countries, within some member states inequality had not been reduced or had even increased. She stated:

If left unattended the risk is right there that people feel disenfranchised, disillusioned and left behind. There will be fertile ground for populism—not necessarily for [politicians] who come up with solutions, but people who come up with the right slogan diagnosing what the problem is. (*Financial Times*, 8 March 2018)

As Jan-Werner Muller (2017) has argued, populism tends to have two dimensions—anti-elitism and anti-pluralism. The former implies loss of faith in our political establishment, the latter implies lack of tolerance for opposing views. Blame is attached not just to the political elite but to specific groups, be they minorities, immigrants, foreigners, or elites.

There is no doubt that populism has increased. However, as Nolan and Valenzuela (2019) argue, it is possible to over-emphasize its relationship with inequality. They cite research on European countries by Inglehart and Norris (2016), which finds that, though socio-economic variables have some explanatory power, 'cultural attitudes' are much more important. Changing cultural attitudes may themselves be in part the consequence of economic developments, and they acknowledge that 'economic dysfunction combines with cultural and demographic factors in a way that makes them very hard to disentangle'. Thus those US voting districts that suffered most from the economic impact of globalization may have been the ones which switched most comprehensively to vote for Trump in the last presidential election (Frey *et al.*, 2018), but at the same time the rise of populism in Europe was apparent in some countries where inequality did not increase (for example, Austria) as well as in some where it did. There is also a timing issue. For instance, in the UK, as Nolan and Valenzuela emphasize, the major increases in inequality happened in the Thatcher era, but it was only in later years that populism emerged with any force. There may be complex lagged effects at work here.

Nolan and Valenzuela (2019) also discuss the relationship between inequality and a variety of social outcomes. They cite Wilkinson and Pickett (2018) who argue that more unequal countries have greater problems relating to physical and mental health, drug abuse, education, imprisonment, obesity, social mobility, trust and community life, violence, teenage pregnancies, and child well-being. However, as they indicate, there are problems in attributing directions of causality. And it is often difficult to find significant relationships, whether by comparing countries at any given point in time or by assessing the impact of changing patterns of inequality in a single country over time—this is especially true of family-related issues. There is considerable evidence linking health outcomes to levels of income, but the evidence on links with income inequality is rather more sparse. Nolan and Valenzuela report that the research does not find any statistically significant relationship between health outcomes and increasing inequality, with one important possible exception. The so-called social gradient in health describes the relationship between inequalities in 'health status' and 'social status'. This gradient becomes steeper as income inequality increases.

Similarly, Nolan and Valenzuela argue that the relationship between inequality and crime is difficult to assess, though there is some evidence of one between violent crime and inequality, as there is between severity of punishments and inequality.

A very clear relationship exists between inequality and relative poverty. For example, McKnight *et al.* (2017), studying the UK over the period from 1961 to 2015/16, found that 'an increase in the Gini coefficient of 1 point [was] associated with an increase in the rate of relative income poverty by 0.6 percentage points' (p. 7). This was when income was measured 'before housing costs'. If it is measured after housing costs, the association with relative poverty increases slightly. As McKnight *et al*. acknowledge, such findings could simply reflect 'the mechanical (mathematical) relationship between commonly used measures of inequality and poverty'. Therefore it is more revealing that links between income inequality and poverty remain if only the upper parts of the income distribution are considered.

More complex is the relationship between changing inequality and intergenerational mobility—whether in absolute or relative terms. Are more unequal societies the ones with least intergenerational mobility? Nolan and Valenzuela paint a 'mixed picture' of the available evidence.

Beyond the impact on individuals and on social and political behaviour, too much inequality may also have harmful effects on the economy as a whole. For example, it might cause the stock of human capital to be lower than it otherwise would have been, particularly if credit market and informational failures prevent productive investments in education; or it might reduce successful matches between workers and jobs because economic activity is unequally geographically distributed (see McGregor *et al.*, 2019, this issue); or it might restrict demand, since the wealthy have a lower marginal propensity to consume, an idea stretching as far back as to Kaldor (1940). However, too little inequality might also be harmful. For example, measures to make the tax system more progressive might discourage entrepreneurship or cause people to work less hard or ambitiously. Equally, policies to narrow the distribution of market income, through, for example, caps on top salaries, might harm incentives. In the UK the potential trade-off between growth and inequality was a prominent political issue during the Thatcher years. The government argued that policy measures which might increase (at least initially) inequality of both market income (through, for instance, the weakening of trade unions) and of post-tax income (income tax reforms) would stimulate growth and the benefits of this would trickle down to those who might have initially lost out. Everyone could be better off in absolute terms in a more unequal society. How copious the trickle actually turned out to be is unclear, but what is certain is that income inequality on all measures increased. This example serves to illustrate the difficulty of pinning down any precise relationship between growth and the extent of inequality.

IV. What has happened to inequality?

Examining first within-country inequality, the picture is more nuanced than often depicted in public debate. Nolan and Valenzuela (2019) show trends in the distribution of equivalized income from around 1980 until 2007—that is, until just before the last major recession. Equivalized income comprises income from the market plus cash transfers and minus direct taxes, all adjusted for household size. It is indeed the case that inequality (as measured by the Gini coefficient) increased in most OECD countries. However, the extent of the increase varied greatly, with Sweden, Finland, and the UK showing the largest increases. A few countries bucked the trend. Inequality was 'stable' or even declined slightly in France, Greece, Ireland, Italy, Portugal, Slovenia, Spain, and Switzerland. Furthermore, whatever changes occurred in any given country after 1980, they were from very different starting points. The period since the crisis has shown even greater diversity of experience. Nolan and Valenzuela show the income inequality 'went down, or was stable as often as it increased'. They go on to show a similar diversity of recent experience (again from roughly 1980 until 2007) in changes in wealth inequality with the share of the top 1 per cent increasing, for instance, in Finland, Italy, and the UK, but not in Germany, the Netherlands, Norway, or Sweden. The impact of the recession was similarly varied. Wealth inequality increased in Italy and the Netherlands but changed very little in the UK. However, conclusions can be very sensitive to the particular measurement used. For example, Obolenskaya and Hills (2019) show that for the period 2006–8 to 2014–16 inequality of financial and physical wealth (excluding pensions) increased in the UK, but did not if pension rights were included.

At the opposite extreme is global inequality or inequality between all the world's 7.6 billion people. Global inequality has fallen slightly. The major driver of this has been the rise of a 'middle class', particularly in India and China. At the same time there has been little amelioration in the relative real incomes of the very poorest. However, as McGregor *et al.* (2019) argue, although such global inequality measurement has some strong advocates, its usefulness is limited for a number of reasons. Not the least of these is the relationship with policy—measures to alleviate inequality (as opposed to poverty) tend to be the preserve of national governments. Taking the middle ground and considering inequality between countries, Kanbur (2019) broadly concurs with the emphasis on the diversity of experience. He shows that, over the last 30 years, inequality between countries has fallen, largely due to the higher growth in some poorer countries, especially in China and India, than in the US and other parts of the developed world. At the same time, overall there have been rising inequalities within countries. However, even here he stresses the very different trajectories of different countries, with inequality rising in, for example, India, China, and the US, and falling in, for instance, many Latin American countries.

Important developments are often hidden within an aggregate measure. Obolenskaya and Hills demonstrate this for the UK. They show that in the two decades after 1995–6, income and earnings inequality was much more stable than in the previous two decades when 'inequality leapt dramatically'. But beneath this calm surface important changes were taking place. The relative fortunes of younger people declined significantly, while those of pensioners improved. The incomes of house-owners improved relative to those who rented. Changing housing costs had a major impact on the disposable income of Londoners. Partly related to the housing market, wealth inequality increased in London much more than elsewhere in the country.

V. What causes inequality?

Inequality is a product of both the distribution of resources by the market, and the subsequent redistribution of those resources by government policy. Unequal distribution of resources by the market can be due to either the efficient compensation of capital and labour for their marginal product, or to the consequences of market distortions or economic rents. The former has some merits, by efficiently allocating capital and labour to their most productive uses. The latter does not.

Considering household disposable economy in OECD economies from 1980 to 2007, Nolan and Valenzuela argue, in common with other authors, that the main driver of inequality was income derived from the market or, more specifically, earnings. A large literature explores how globalization and technology has widened the dispersion of earnings. Less important, but still significant, was a more unequal distribution across households of income from self-employment and capital. At the same time the redistributive impact of direct taxes and transfers weakened in most countries.

Technology is mentioned in virtually every analysis of inequality, because of the way that it is generating economic rents and altering how they are shared. It does this first by creating natural monopolies: giving some firms extraordinarily high and increasing returns to scale. This is partly because data are now one of the most important forms of capital used in modern production, and the value of a data-point increases the more a firm has of them. It is also because many tech firms' business models are based around network externalities, which also offer increasing returns to scale. For example, the advantages of buying goods online increase with the number of sellers on the platform, and equally the merits of selling there increase with the number of buyers. A similar effect exists with co-locating with one's friends on social networks, and in many other tech business models.

The second way that technology affects inequality is that it allows these natural monopolies to grow extremely quickly, because the marginal cost of production is so low. Businesses dealing in physical goods incur costs of production and distribution. For technology companies these are very close to zero.

The third way that new technology is driving inequality is that it allows for rapid and unequal growth in other industries. For example, Salganik *et al.* (2006) conduct an experiment to study how music choice is affected by knowledge of the choices of others. They find that increasing the degree of social influence increases both the inequality and unpredictability of artists' success, which is only loosely linked to quality. This exacerbates the 'superstar' positional rents earned by the winners.

Technology is also affecting inequality by altering the way that the economic rents are redistributed. This is partly because technology is making it easier for online businesses to reduce their tax liabilities. In many instances end-users 'pay' for the services of tech companies by providing data, which is then monetized through advertising. Transfer pricing allows for the profits from these activities to be realized in low tax jurisdictions. This has prompted discussions of the possibility of introducing internationally coordinated 'digital taxes' to address the issue. Technology firms are also affecting the distribution of rents through the types of labour they employ. The share ownership, and particularly the voting rights, of these companies are concentrated among their founders and employees.

More broadly, it is argued that skill-biased technical change (SBTC) increases the relative demand for skilled labour, widening the gap between the wages of the more skilled and the less skilled. However, this conclusion rests on two assumptions. The first is that the increase in the demand for those possessing the required skills outpaces the supply of such people. The second is that the production requirements imposed by technological change are actually skill biased. Historical examples of technological spurts suggest that, in fact, this is an empirical issue and it seems to us that the evidence is sparse. It is true that the wage premium for skill (usually as measured by educational attainment) has increased in most developed countries, though there are many possible explanations for that, including positional rents. More importantly, the impact of technical change in the future is uncertain. For example, one possibility, expounded by Brown and Lauder (Brown *et al.*, 2011; Lauder *et al.*, 2018), is that it is leading and will lead to a form of digital Taylorism such that, even in some of the higher-status managerial occupations, a large proportion of jobs will be routinized, with the 'thinking' jobs involving discretion being reserved for a relatively small proportion of the occupation. Put crudely, if there is any truth in this, many managers will in fact be the twenty-first century equivalents of last century's assembly-line workers. This would almost certainly increase inequality, but the phenomenon will probably not be captured by conventionally measured skill/education differentials. It would have significant implications for policy, which we discuss later.

Will the current digital/AI revolution destroy jobs in the aggregate? Historically, bouts of technical progress have certainly changed the distribution of jobs, but have not caused the total number of available jobs to fall. Some have argued that contemporary technical change, the 'fourth industrial revolution', will be different and will lead to a fall in the aggregate demand for labour. Whether in fact this will happen is vastly uncertain, and recent work by the OECD among others has certainly cast doubt on the apparently dire predictions of Frey and Osborne (2013), but, if it does, again the implications for policy are massive.

As several authors in this issue remind us, it may be a mistake to regard the nature of technological change as exogenous. Much of today's technology was enabled, from its earliest days, by massive government intervention and funding (Mazzucato, 2018). This government involvement was not simply near-to-market but went back to the early development days. The emergence of the Internet is widely mentioned in this regard. As Atkinson (1999) reminded us, this raises the possibility that governments may be able to influence technological developments so that they are not necessarily labour saving or job destroying.

Furceri and Ostry (2019) offer a more systematic exploration of the potential drivers of inequality. Faced with what they describe as 'model uncertainty', they deploy model-averaging techniques to analyse differences between 108 countries in the extent of market income inequality and to explore the evolution of inequality over time. In terms of differences between countries, they find confirmation of the Kuznets Curve—an inverted U-shaped relationship between the extent of inequality and the stage of development. They remark on the 'striking difference' between the impacts of trade globalization and financial globalization, with the former being associated with less inequality and the latter with more. A variety of demographic factors are also important, as is the extent of unemployment. They conclude that 'differences in inequality are driven not only by structural factors (such as the level of economic development and demographics) or technology, but also by policies (product market reforms and openness to trade and financial flows) and by macroeconomic conditions'. They find that the self-same drivers of differences between countries tend to be those that account for changes over time in inequality within countries.

Market distortions can have a significant impact on inequality. This theme is discussed in two papers in this issue, concentrating specifically on the market power of businesses. Market power drives up margins. The consequence is that all consumers face higher prices but the wealthy are more than compensated for this by the higher returns they receive on their capital. Ennis *et al.* (2019) analyse the phenomenon in eight countries—Canada, France, Germany, Korea, Japan, Spain, the UK, and the US. Data availability dictates the precise choice of time period they study, but it generally covers the last 30 or 40 years of the last century and the early years of this century. They find that in the average country market power increased the wealth of the richest 10 per cent by between 12 and 21 per cent for a range of reasonable assumptions about savings behaviour, while it reduced the income of the poorest 20 per cent by 11 per cent or more.

Gans *et al.* (2019) conduct a similar exercise for the US over a time span of nearly 30 years. They show that by 2016 'the top 20 per cent consumed approximately as much as the bottom 60 per cent but has 13 times as much corporate equity'. Since the ownership of corporate equity is 'more skewed than consumption, increased mark-ups increase inequality'. Critically, they find, this relative skewness has increased over time in the US.

These two papers echo the broader arguments of Piketty (2014). Income inequality will grow if the rate of return on capital (broadly defined) increases faster than GDP growth. In these circumstances income from capital grows faster than income from employment because growth of the latter tends to mirror the growth of the real economy. Since the ownership of capital is very unequally distributed, this implies increasing inequality.

Public policy also plays an important role in the final distribution of resources, by redistributing the initial allocations of the market. Fiscal policy, through both tax and spending, naturally plays a central role in this, as discussed above in the context of the UK's Thatcher reforms. However, the role of public policy goes further, by dictating the rights and obligations of individuals in ways that strengthen or weaken the free hand of the market. Finally, it is important to note that monetary policy also has a crucial role to play in the distribution of income and wealth. For income, it is by smoothing business-cycle fluctuations that otherwise lead to unemployment. For wealth, it is through its influence on the level of interest rates, at least in the short run. The past decade of extraordinarily loose monetary policy has driven up asset prices, widening the wealth gap between those with assets and those without. This has had important implications for generational inequality, which may in part explain the rise in left-wing agitation by the young.

(i) The transmission of inequality

An important dimension of inequality is how it is transmitted from generation to generation. Most people would accept that, for a given distribution of resources, there is an important difference between a case where a person's parental background has relatively little influence on that person's lifetime chances and one where it has a major impact.

Breen (2019) notes that more concern has been expressed about intergenerational mobility in the UK and the US than in continental Europe. While the relatively small number of economists who study the issue usually measure intergenerational mobility by comparing the incomes of children and parents, sociologists like Breen compare the social classes of the different generations. A critical distinction in Breen's analysis is between 'absolute mobility' and 'relative mobility' or 'social fluidity'. Absolute mobility is defined as 'the proportion of people who are in a destination that differs from their origin'. Social fluidity is defined as 'the strength of the relationship between origins and destinations' or relative chances of escaping class background, which is defined by the occupational status of the parents. In earlier work (Breen, 2005), he compared social fluidity in Great Britain and in seven European countries over three decades—the 1970s, 1980s, and 1990s. For cohorts born in the first two-thirds of the twentieth century social fluidity increased, particularly in the 1970s and 1980s. Germany, France, and Ireland were less fluid than Britain and Sweden; Poland, Hungary, and the Netherlands were more fluid.

In his paper in this issue Breen compares the experiences of the US, Germany, France, Sweden, and the Netherlands, covering men and women aged 35–70 in the period roughly from 1970 to 2010. The birth cohorts considered varied slightly from country to country, but were typically: 1924 and earlier; 1925–34; 1935–44; 1945–54; 1955–64; and 1965 and later. His findings for absolute mobility are strikingly similar across the countries. The earlier born cohorts of men experienced increasing upward mobility and diminishing downward mobility. The later born cohorts saw declining upward mobility and increasing downward mobility. The picture is slightly different for women. Upward mobility increased for the earlier cohorts and then flattened out, rather than declined, for the later born cohorts. For the earlier born cohorts downward mobility declined then remained constant, rather than increasing.

Later born cohorts also experienced less relative mobility or social fluidity. Men born up to the mid-1950s saw a significant increase in relative mobility, but those born after that did not. Women enjoyed greater fluidity until the mid-1960s. Exceptionally this greater fluidity persisted throughout the age cohorts. In the US only the two oldest cohorts experienced greater fluidity.

Breen goes on to discuss the role played by education. He distinguishes between five levels: compulsory only; lower secondary; upper secondary; lower tertiary; and upper tertiary. In the European countries educational equality increased for those born up to the mid-1950s, after which it remained constant. The same was true for US women. For American men, however, educational equality increased early in the twentieth century, and then became constant only to increase again for the youngest cohort. Breen finds a strong relationship between educational equalization and social fluidity, the relationship being particularly strong for the higher levels of education.

So, though the picture varies somewhat from country to country, generally Breen found that social fluidity increased for those born in the first half (and particularly the second quarter) of the twentieth century and stalled thereafter. He discusses two hypotheses often put forward in relation to intergenerational mobility—modernization theory and trendless fluctuation. The former argues that 'as societies develop the forces of competition drive institutions to become more meritocratic'. The latter suggests that modernization theory ignores 'the degree to which those in advantaged positions can secure similarly advantaged positions for their children'—a risk identified at least as early as Young (1958). At first sight modernization theory appears to fit the experience of the first half of the century and trendless growth the second half. Breen, however, prefers a different explanation. First, the equalization of education stopped increasing. Second, the increase in fluidity enjoyed by the cohort born in the second quarter of the century was the consequence of a massive increase in the service class among other structural changes in the post-Second World War economy. The implications of this are discussed in the next section.

VI. How can policy address inequality?

Atkinson (1999) argued that there was nothing inevitable about rising income inequality. Similarly, there is nothing inevitable about any given level of inequality within a country. Policy can make a difference. Governments can and do make distributive judgements and can choose to accept or reject the consequences of these judgements for economic efficiency. Before considering what policy can and should do, there are two overarching questions that need to be addressed. The first is whether this is simply a question for national governments, or whether the international community and organizations have a role to play. The second is at what stage the most effective interventions should come—pre- or post-market.

The international community has a vital role when dealing with absolute poverty, which comes down to enlightened self-interest. By reducing absolute poverty the global community benefits from the public goods of having fewer pandemics and wars. The international community's role in reducing inequality can come similarly from self-interest. Between-country inequality makes international diplomacy more difficult, because countries approach it from different perspectives. For example, the diplomatic pressures created by migration could be mitigated were economic opportunities more equally distributed around the world. Similarly, progress on global public goods such as de-carbonization might be more forthcoming were developing countries less concerned that they would be sacrificing the economic opportunities already afforded to their developed counterparts.

Reflecting on the fact that inequality between nations has diminished, Kanbur (2019) notes that 75 per cent of the world's poor now live in middle-income countries, whereas 30 years ago 90 per cent of them lived in low-income countries. Economic migration has been a reaction to this development, raising the question as to whether international organizations should take a stance on the matter. Certainly the migration of unskilled labour can bring national and transnational policy perspectives into conflict. Are receiving countries in the developed world too restrictive in their immigration policies or are they sensibly protecting the interest of the lower reaches of their own populations? If the unskilled come in disproportionately large numbers, then it is likely that the local unskilled workers will be adversely affected. At the same time the workers from the sending countries will be better off, as will the sending countries themselves if remittances back home are significant. Who should we care about most?

The international community also constrains domestic policy's ability to address inequality. This can happen by limiting the perceived ability of governments to tax capital and high-skilled labour, because both are internationally mobile. It also potentially reduces the ability of governments to subsidize low-skilled labour, because there is a risk that it attracts inwards migration, which can cause the subsidies to cost more than anticipated.

A corollary of these constraints is the potential problem of 'the race to the bottom'. This is the danger that those countries with the lowest labour standards (broadly defined) make themselves more competitive in international trade and that other countries reduce their own standards in an attempt to compete with them. We already have an institution whose role is meant to help to control this danger—the International Labour Organisation (ILO). There are eight fundamental ILO human rights conventions designed to ensure four core labour standards. These are: freedom from forced labour; freedom from child labour; freedom from discrimination at work; freedom to form and join a union and to bargain collectively. Whether these will do much to really prevent a race to the bottom is questionable. Although the vast majority of countries are members of the ILO, they do not necessarily have to ratify conventions. China, for example, has ratified only four of the eight fundamental conventions, as has Korea; India has ratified six; and the US only two. By contrast all the EU countries, including the UK, have ratified all eight. Notwithstanding the US's record in this respect, there is a pattern of significant players in the developing world being more reluctant to ratify than are more developed countries. Even when a country does ratify, local interpretation and conditions will mean very different impacts of any given convention. Noble though the mission and activities of the ILO are, it is doubtful whether they are enough to prevent a race to the bottom, if that is what we face. The real question is how serious a threat it presents.

Turning to national policies, we would argue that ideally pre-market policies are to be preferred to post-market policies: prevention is better than cure. This is for a number of reasons. Lessons learned from behavioural economics tell us that people are much less happy having something—like taxed income—taken from them than never having had it in the first place. Furthermore addressing pre-tax inequality often means addressing broader distortions in the market. This can include unequal bargaining power between workers and firms, or the many sources of economic rents from natural resources and uncompetitive markets, or gambling's exploitation of vulnerable consumers. When these distortions are properly addressed, for example through public ownership of natural monopolies, they can also serve as efficient sources of public finance.

When considering such interventions, there is an important distinction between general actions that affect the systemic forces behind inequality and more specific policies.

The intergenerational transmission of disadvantage is one of the main systematic forces driving inequality, and one where the concept of a level playing field is perhaps most often found. Educational reform is commonly seen as the way in which these transmission effects can be reduced. Indeed, Breen (2019) demonstrates its contribution in the UK for those born in the second quarter of the twentieth century. However, research for country after country, even egalitarian countries like Sweden, demonstrates the difficulty of altering the distribution of educational attainment across social classes. In the UK, for example, the massive expansion of higher education in the last 30 years may well have increased the absolute number of working-class students in higher education, but not in the most prestigious universities that provide access to the higher-status jobs. Furthermore, as authors such as Erikson and Goldthorpe (2002) remind us, 'educational expansion and reform alone should not . . . be expected to serve as very effective instruments of public policy aimed at creating greater equality of opportunity in the sense of "a more level playing field"' (p. 42). They argue that educational reform will have limited impact without changing what they describe as 'inequalities of condition, and especially class inequalities in economic security, stability and prospects' (p. 42), which drive choices about education and occupation. Breen's conclusions chime with this, arguing, as he does, that the most socially fluid period of the twentieth century in the developed world reflected the major structural shifts in the composition of production—education on its own would not have been enough.

As we have seen, the role of skill-biased technical change is commonly regarded as one of the great systemic forces that are exacerbating inequality. One possible policy response, Kanbur (2019) argues, is to 'increase the supply of skilled labour through educational policy'. Our earlier discussion of the possible consequences of SBTC suggests that this might not be fruitful. It could be that it simply creates an excess supply of skilled labour, if Brown and Lauder are correct in their suspicion that higher-status jobs are also vulnerable to automation. This would mean that many 'educated' workers would be employed in jobs that significantly under-utilized their skills, with obvious consequences for their earnings. Following Atkinson, Kanbur suggests that another policy intervention would be to attempt to mould future technical change. The essence of the argument is that past technological developments frequently depended on government financial support at a very early stage. This suggests, therefore, that there is scope for governments to influence (much in the manner of Mazzucato's entrepreneurial state) future technological developments to be less skill intensive and less labour saving. This strikes us as difficult to achieve. It is important, however, to note that historical bouts of technical progress have changed the distribution of jobs but have not caused the total number of available jobs to fall. Some have argued that contemporary technical change, the 'fourth industrial revolution', will be different and will lead to a fall in the aggregate demand for labour. Whether, in fact, this will happen is vastly uncertain but, if it does, the implications for policy will be massive. Also uncertain is what the new structure of jobs will look like, but again there will be implications for inequality.

Alongside SBTC, globalization is the other systemic force most often mentioned. However, Furceri and Ostry (2019) find that the impacts of trade globalization and financial globalization differ, suggesting that it is a more complex matter than it often appears in public debate. Besides its role in driving changes in inequality, it also acts as a constraint on national policy, as noted above. It is claimed, for example, that corporation tax rates or other forms of tax on capital that are too high will lead to a flight of capital in a world where capital is mobile. Similarly, in a world where skilled labour is mobile, high marginal income tax rates could cause a flight of skilled labour. Kanbur advocates cross-national agreements on tax, but acknowledges the difficulty of achieving them.

Whatever the difficulties in tackling systemic forces, specific interventions to mitigate the inequality of market incomes are always available. Minimum-wage legislation is widely used and Kanbur credits this with the diminution of inequality in some Latin American countries. Since Card and Krueger (1995), economists have become somewhat less concerned about the potential negative employment effects, but these undoubtedly await governments who push the minimum too high. Nevertheless, there appears to be more scope for interfering with the market-determined wage structure than was once believed, and not just at the bottom end of the distribution. In the developing world, public employment schemes have an important role to play.

However, the growing support for post-market interventions, such as conditional cash transfers and universal basic income, suggests that in many countries pre-market interventions are regarded as insufficient. Whether this is because the problems are too intractable, or because there is lack of political will/consensus to adopt the appropriate policies is a moot point. Governments perhaps feel comfortable with deploying tax and social security measures. While there may be disagreement or uncertainty about the efficiency of any given policy, their role is generally well understood, and international tax competition is not a binding constraint. Nevertheless, while it is necessary to minister in such ways to the casualties of the market economy, policies to reduce the number of such casualties are available. As Furcieri and Ostry put it, inequality is driven by factors 'within the control of policy-makers', emphasizing the role of macro and structural policies and policies in relation to trade and globalization. Powerful though structural forces might be, the extent of inequality is, to an important extent, within the hands of governments. However, they appear too often to be simply reacting to crises that they believe to be the consequence of inequalities rather than taking a positive view about the sort of society they want to shape. This is a reason for re-focusing on pre-market interventions, rather than relegating them to a back seat.

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