#### **RESEARCH ARTICLE**



# The determinants of growing economic inequality within advanced democracies

# Matthew Rochat<sup>1</sup>

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#### **Abstract**

Beginning with the premise that rising economic inequality is an urgent problem burdening some industrialized democratic societies more than others, this paper seeks to examine the primary factors responsible. The purpose is not to provide novel empirical analysis but rather to unite siloed academic discussions and debates under a common theme, to address a problem of mutual concern. The first section frames the puzzle of economic inequality within advanced democracies. Subsequent sections review seminal contributions in five issue areas suggested as likely determinants of growing economic inequality in advanced democracies: technology, globalization, labor institutions, taxes and transfers, and the concentration of markets. I conclude by suggesting that these factors may, in fact, be separate branches of the same tree in that they are deeply intertwined with the economic systems in which they exist. Future work on economic inequality should therefore embrace the Varieties of Capitalism framework as a useful tool for understanding economic inequality.

**Keywords** Economic inequality  $\cdot$  Technology  $\cdot$  Globalization  $\cdot$  Labor institutions  $\cdot$  Taxes and transfers  $\cdot$  Concentration of markets

JEL Classification J51 · H20 · D63 · D43

#### 1 Introduction

For the better part of the last 30 years, *between* country inequality has gradually declined. This trend is due in large part to the rise of China and other populous Southeast Asian economies such as India, Indonesia, and Vietnam. Inter-country inequality reduction has also been bolstered by slower growth in the developed world (Firebaugh and Goesling 2004). However, *within* country inequality has risen steadily in many parts of the world, and certain advanced democratic countries have



Matthew Rochat mjrochat@ucsb.edu

University of California, Santa Barbara, USA

proven particularly susceptible to this affliction (Milanovic 2016). Two of the most useful measures of economic inequality are income and wealth. According to Balestra and Tonkin (2018), who examined both indicators across 28 OECD countries, wealth concentration is approximately twice the level of income inequality. Using the OECD Wealth Distribution Database, the authors found that the wealthiest 10% of households, on average, hold 52% of total household wealth. In terms of income, the authors found that the top 10% of the income distribution held 24% of total income. Using the Standardized World Inequality Income Database, we can see that income inequality varies greatly between different OECD countries (Solt 2020). Similarly, we can see that wealth inequality also varies greatly between different OECD countries using the World Inequality Database. According to the 2022 World Inequality Report, the figures are particularly shocking in countries such as the United States, where the top 10% captures 45.5% of total income and 70.7% of total wealth. Even in OECD countries with greater redistributive institutions, such as Germany, the top 10% still manages to capture 37.1% of total income and 59.6% of total wealth (Chancel et al. 2022).

Though income and wealth inequality are ethical concerns in and of themselves, they also spill over into other realms of society exacerbating other problems. In a previous paper, I examined the troubling consequences that growing economic inequality can have on political equality, far-right populism, and long-term economic growth (Rochat 2022). In this paper, I shift from consequences to determinants, reviewing five issue areas suggested as likely determinants of growing economic inequality in advanced democracies. Starting from the position that rising economic inequality is an urgent problem burdening some industrialized democratic societies more than others, this paper examines the primary factors responsible. The aim is not to provide novel empirical analysis but instead to unite siloed academic conversations under a common theme, to address a common problem. In the sections that follow, I review seminal contributions and key debates in five issue areas suggested as likely determinants of growing economic inequality in advanced democracies: technology, globalization, labor institutions, taxes and transfers, and the concentration of markets.

# 2 Technology

The relationship between technology and inequality has come under increasing scrutiny in recent decades, given notions that we are now living amidst the "Third Industrial Revolution" (Greenwood and Yorukoglu 1997). According to some scholars, this turn-of-the-21<sup>st</sup>-century revolution in computer and information technology (CIT) is responsible for exacerbating economic inequality (Katz and Murphy 1992; Caselli 1999; Kristal 2013; Kristal and Cohen 2017), under the logic that technological change favors skilled workers and replaces tasks that were previously the domain of unskilled workers; a phenomenon referred to as skill-biased technological change (SBTC). This notion was depicted in Alan Krueger's 1993 paper titled "How Computers Have Changed the Wage Structure." In earlier stages of the industrialization process, Goldin and Katz (1998)



made a similar observation, noting that the change from steam and waterpower to electricity reduced demand for manual labor in both conveying and assembly. Extrapolating from the experience of the 1920s, Jerome (1934) attested that "in the future... there is considerable reason to believe that the effect of further [mechanization] will be to raise the average skill required." For many scholars, evidence from the early twentieth century suggests that technological growth and skills are complementary (Welch 1970; Tinbergen 1975). Contemporary developments in CIT provide additional validation. Personal computers and automated production techniques have assisted high-skilled, white-collar workers, while low-skilled, blue-collar workers have seen their jobs become obsolete due to automation.

The consensus that technological advancement supports skilled labor is, to a certain degree, a product of the twentieth century. For skilled laborers in nineteenth century Britain, the experience was to the contrary. During the Luddite and Swing riots, skilled artisans destroyed machinery out of fear that new machines would render their skills redundant. They were right, as artisan shops were eventually supplanted by assembly lines (James and Skinner 1985). Goods previously made by skilled artisans were instead mass-produced in factory settings in which relatively unskilled workers operated machinery that simplified formerly complex tasks. Eli Whitney, inventor of the cotton gin and pioneer of interchangeable parts, famously extolled the benefits of substituting machinery to replace the long and arduous process of mastering a skilled craft (Habakkuk 1962). Mokyr (1990) describes this process in detail:

First in firearms, then in clocks, pumps, locks, mechanical reapers, type-writers, sewing machines, and eventually in engines and bicycles, interchangeable parts technology proved superior and replaced the skilled artisans working with chisel and file.

Though detailed econometric evidence for the nineteenth century is lacking, the 1850 Census of Manufacturers used by James and Skinner (1985) supports this view that technological development was skill-replacing, finding that there was more rapid substitution of capital for skilled workers than unskilled workers. Thus, a longer view shows that the relationship between technology and inequality may not be so straightforward. The nineteenth century experience seems to indicate that technology expands labor for the unskilled and reduces inequality, while the twentieth century experience demonstrates that technological progress is biased towards skilled workers and increased inequality. For his part, Acemoglu (2002) finds that technological change has been skill-biased for most of the twentieth century, with an acceleration near the turn of the twenty-first century. To bridge the gap between the nineteenth and twentieth century experiences, Acemoglu explains that technological development is, in large part, a response to profit motives. When skill-biased techniques are more profitable, new technologies will tend to be skill-biased. In the nineteenth century, there existed a large supply of unskilled workers who migrated towards urban areas. From a profitability perspective, this made skilled labor less desirable and incentivized



technologies that capitalized on the vast unskilled labor force. Alternatively, the 20th has been defined by skill-biased technologies because of the rapid increase in the supply of skilled workers, thanks to high returns on education.

However, Acemoglu also notes a different puzzle. If technological change was skill-biased for much of the twentieth century, why then did inequality only begin to increase in the final decades of the twentieth century, but not before? Acemoglu includes two possible answers to this question. The first he calls the steady demand hypothesis, which explains that inequality was relatively stable because the rate of skill accumulation was as constant as skill-biased technological change (Katz and Murphy 1992; Card and Lemieux 2001). According to this view, expanding inequality is the result of a declining rate of growth in the supply of skills. Alternatively, there is the acceleration hypothesis, which argues that the skill bias has been accelerating at a faster pace driven by the explosion of CIT. Acemoglu supports this view, noting a sharp increase in inequality beginning in the 1970s that coincided with high returns to education as demonstrated by an increase in the supply of educated workers. Goldin and Katz (2008) suggest a similar interplay between the supply and demand of skilled workers as a determinant of wage inequality. Following their logic, when the supply of more-educated workers is less than demand, wage inequality will increase. According to Hühne and Herzer (2017), the relative supply of skilled workers has steadily grown in developed countries in recent decades, though the supply of more-educated workers has not grown fast enough to meet increased demand and reduce wage inequality. The authors conclude that inequality is not an inevitable byproduct of technological change. Kollmeyer (2018) similarly takes issue with the SBTC claim, arguing that the distributional effects of technological change have been overstated.

The acceleration hypothesis largely conforms with proponents of endogenous growth theory (Romer 1990), with the understanding that new technologies respond to market incentives. According to this approach, technology is not simply an outside entity that brings about exogenous change to wages and labor markets. Instead, technological development is a process in continuous interaction with decisions made by workers and firms. From this perspective, it was the large increase in the supply of skilled workers that induced an acceleration in the demand for skills. Firms adopted skill-biased techniques because there was a greater profit incentive. Schmookler (1966) made a similar argument in his seminal work *Invention and Economic Growth*, claiming that "invention is largely an economic activity which, like other economic activities, is pursued for gain." This implies that skill-biased technologies will be more profitable to develop when there are more skilled workers to operate them.

Therefore, taking the *longue durée* view espoused by Braudel (1958), it does not appear that technological change alone increases economic inequality. Technological development is an endogenous process that interacts with market incentives and other contextual factors. It has been associated with both greater equality and greater inequality depending on time and place. However, the pace of technological change does appear to bear an impact on inequality outcomes.



# 3 Globalization

Among policy experts and academics, there is a robust debate on whether globalization is responsible for rising inequality within countries. Many of the earliest insights into this question are derived from international trade theory developed by Eli Heckscher and Bertil Ohlin in the early twentieth century. The Heckscher-Ohlin model builds on theories of comparative advantage and explains patterns of international trade as a function of a country's factor endowments (Heckscher and Ohlin 1991). The Heckscher-Ohlin model predicts that a country abundant in skilled labor should specialize in exporting goods that require skill-intensive labor, while a country abundant in unskilled labor should specialize in exporting goods that require unskilled labor. Trade should increase returns to skilled labor in the first country which would increase inequality. In the latter, trade should increase returns to unskilled labor and reduce inequality (Wood 1994). In this simplified example, globalization can lead to either increased inequality or decreased inequality. For many advanced democracies that are abundant in skilled labor, we might expect to see increasing returns to skilled labor which, in theory, would increase inequality.

However, a significant body of research casts doubt on how effectively the Heckscher-Ohlin model, and its close variant known as the Stolper-Samuelson model, perform when predicting real world developments (Han et al. 2012). For example, contrary to Heckscher-Ohlin predictions, many developing countries that liberalized trade in the 1980s and 1990s experienced increasing rather than decreasing inequality (Goldberg and Pavenik 2007). Additionally, there are examples in developing countries such as Mexico, Colombia, and Morocco where trade liberalization was followed by protectionist tariffs in industries abundant in unskilled labor (Harrison and Hanson 1999). This evidence contradicts the Stolper-Samuelson model which predicts that industries with abundant factors will advocate for free trade, whereas industries with scarce factors will advocate for greater protectionism. However, it is important to note that developing countries are not all the same and exhibit great diversity in their endowments of capital, labor, and skills (Davis 1996). For example, a middle-income country like Mexico may be relatively skill-abundant in relation to India or China. Nevertheless, regardless of the extent to which Heckscher-Ohlin and Stolper-Samuelson models accurately reflect the real world, their predictions have proved foundational for setting up hypothesis testing on the relationship between globalization and inequality (Milanovic 2005).

In addition to simple cross-country exchanges in goods and services, another dimension of globalization with implications for inequality is foreign direct investment (FDI). Since FDI outflows from advanced economies tend to be concentrated in industries with low-skilled labor in the home country, rapidly rising FDI outflows often reduce the demand for low-skilled labor and increase income gaps in industrialized economies (Tridico 2018). Moreover, with the rise of FDI outflows from advanced economies, globalization improves the position of capital with respect to labor (Chusseau and Dumont 2013). Under globalization, Rodrik



(2011) argues that capital has been highly mobile, and those who possess capital can search for profits around the globe. On the other hand, labor has remained relatively fixed. This asymmetry suggests that the foreign investment dimension of globalization favors the "haves" as opposed to the "have-nots" (Rochat 2021).

The expansion of international finance is another facet of globalization that has captivated researchers of economic inequality. In fact, some scholars have argued that trade globalization and financial globalization may not have the same effect on inequality (Gozgor and Ranjan 2017). According to standard theoretical views on financial globalization, more access to credit can disproportionately benefit poorer households (Aghion and Bolton 1997). According to this perspective, the influx of foreign capital permits countries to consume more than they produce and to invest more than they save. This boosts growth and exerts upward pressure on incomes of the poor, thereby reducing income inequality (Beck et al. 2007). Yet, other theoretical accounts emphasize that financial openness may not provide equal benefits for all members of society. At early developmental stages, finance may only be accessible to more privileged members of society. Subsequently, at higher levels of development, financial openness may benefit additional echelons of society (Greenwood and Jovanovic 1990). Political institutions may be a conditioning factor on the relationship between financial liberalization and income inequality (Delis et al. 2014). Like trade globalization, scholarship is divided over whether finance leads to greater or less inequality within countries (Hamori and Hashiguchi 2012; Jaumotte et al. 2013; Asteriou et al. 2014).

Ultimately, the relationship between globalization and within-country inequality remains inconclusive. As noted above, we should not expect different countries with different factor endowments to respond in the same uniform manner. Moreover, there are multiple facets of economic globalization including trade, foreign direct investment, and finance that make it difficult to measure and assess such a dynamic, wide-ranging relationship. Finally, some scholars have argued that there may exist a relationship between globalization and inequality, but that this relationship may be either moderated by public sector spending (Rodrik 1998; Kollmeyer 2015), or less consequential than factors such as education or domestic political variables (Abdullah et al. 2015; Mahler 2004). Though the state of the literature on the relationship between globalization and within-country inequality is scattered, recent studies have sought to synthesize and summarize the breadth of results in order to draw more valid conclusions (Heimberger 2020).

# 4 Labor institutions

Cross-country studies on the relationship between labor institutions and economic inequality have gained popularity in recent decades. Scholars have become increasing drawn to aspects such as centralized wage bargaining, unionization, and the minimum wage. The growing popularity of studies on labor institutions and inequality has been motivated by the observation that inequality has grown much more rapidly in some OECD countries compared to others. Notably, scholars have been captivated by high inequality in the US, which provides a stark



contrast to inequality in many countries of continental Europe. Second, thanks to greater availability and comparability of data such as the Luxembourg Income Study, researchers are now better positioned to assess the relationship between labor institutions and inequality (Iversen and Soskice 2006).

The notion of centralized wage bargaining as a key determinant of economic inequality gained popularity in the 1980s, with Freeman (1980) finding evidence that unionization in the United States reduces inequality within and between unionized establishments. Subsequently, studies such as Dinardo et al. (1996) converged on the finding that declining unionization in the United States was responsible for nearly 20% of the rise in wage inequality during the 1980s. Supplied with extensive evidence of a relationship between de-unionization and increased inequality in the context of the United States, scholars sought to incorporate centralized wage bargaining into cross-country studies on inequality to test the generalizability of these results. One of the most powerful statements on this relationship is provided by Moene and Wallerstein (2002) who find that countries with centralized wage bargaining tend to exhibit lower levels of wage dispersion. Even the OECD has acknowledged that "there is a fairly robust relation between cross-country differences in earnings inequality and bargaining structures" (OECD 1997).

It is argued that centralized wage bargaining can impact wage dispersion at several different levels: between firms when bargaining occurs at the industry level, between industries when bargaining occurs at the national level, and between different wage earners when bargaining occurs within an organization (Scheve and Stasavage 2009). Pontusson et al. (2002) find a statistically significant negative correlation between centralized bargaining and earnings dispersion at both the upper part of the distribution (90/50 ratio) and the bottom (50/10 ratio) among 16 OECD countries between 1973 and 1995. Additionally, case studies in the Netherlands and Sweden have demonstrated that centralized wage bargaining can affect wage dispersion for white-collar and blue-collar workers alike (Windmuller 1957; Olsson 1991). Although the relationship between centralized wage bargaining and wage inequality appears strong, scholars such as Robert Flanagan have pointed out that the relationship may be correlational but not causal. It may be that broader economic forces or social norms determine both labor market institutions and prevailing levels of inequality (Flanagan 1999).

Additionally, scholars have examined the importance of unionization and union density more generally, arguing that the percentage of the unionized workforce plays a major distributional role. Kristal (2013) found that workers who used a computer at work were less likely to be union members. Between 1973 and 2002, he found that the computerization of workplaces accounted for approximately one quarter of the decline in union density in industries. Drawing on institutional and market accounts of inequality, Kollmeyer (2017) argued that the interaction between trade union decline, deindustrialization, and the offshoring of routine manufacturing jobs have created more profound distributional effects than these factors would create in isolation. Farber et al. (2021) found consistent evidence that union density explained a significant share of the dramatic fall in inequality between the mid-1930s and late 1940s in the US.



Several influential works evaluating the relationship between minimum wage and inequality were published around the turn of the twenty-first century. An early and influential contribution to this topic, Lee (1999) examined cross-state variation in the gap between median wages and the "effective minimum wage" (the applicable federal, state, or local minimum) in the United States. Lee's findings showed that the growth in wage inequality from 1979 through 1988 was primarily the result of the falling federal minimum wage rather than underlying changes in wage inequality. Lee concluded that observed wage inequality would have fallen during this period, had the minimum waged remained constant. Lee's study built on the seminal work of DiNardo et al. (1996), who observed a compressing effect of the minimum wage on the wage distribution in the United States before 1980. Observing a smaller magnitude in effect compared to Lee, the authors concluded that an eroding minimum wage was responsible for, at most, 40-65 percent of the rise in 50/10 earnings inequality between 1979 and 1988. They suggested that other fundamental factors likely contributed to increasing inequality. Following up on these studies, Autor et al. (2016) sought to reassess the relationship between minimum wage and inequality in the United States by using more recent data from 1979 to 2012 and addressing potential biases in previous work. To a certain extent, the authors confirm previous findings, observing that minimum wages do, in fact, reduce inequality at the lower end of the wage distribution. However, the authors point out that the impact of minimum wages on inequality are substantially less than had been suggested.

Outside of the United States, Lucifora et al. (2005) found evidence that minimum wages reduce wage inequalities in Europe. Dickens and Manning (2004) investigated the impact of the 1999 national minimum wage (NMW) on inequality in the United Kingdom. Like Autor et al. (2016), the authors found that the NMW does have a detectable effect on the distribution of wages, though it only impacts a relatively small proportion of 6-7% of workers. Moreover, the effect of the NMW declined over time as average earnings increased. Following up on this study, Butcher et al. (2012) estimates that more than 50 percent of the decline in wage inequality at the bottom of the wage distribution in the United Kingdom between 1998 and 2010 can be attributed to the NMW. More recently, a national minimum wage was introduced in Germany in 2015, impacting roughly 10-14% of workers who were paid below the  $\in 8.50$  per hour threshold before the new law came into effect (Caliendo et al. 2019). Evaluating the effects, Bossler and Schank (2020) estimate that the new minimum wage law was responsible for 40-60 percent of the recent decline in wage inequality, depending on the year. Though the authors note that the magnitude of this effect is highly determined by the level at which the minimum wage is set. Pereira and Galego (2019) examine divergent trends in wage inequality in Europe, looking at factors such as minimum wage changes, the percentage of non-native employees, and native wage premiums. The authors find that minimum wage changes were crucially important as determinants of wage inequality in Greece, Hungary, and Poland.

It appears we can conclude with relative certainty that labor institutions, such as centralized wage bargaining and minimum wages, play key roles in determining the distribution of income and wealth in a society, particularly within advanced democracies. However, it remains unclear to what extent labor institutions are a driving force behind recent trends in rising inequality in some countries, or whether these



institutions are simply a mediating factor with the capability of reducing or perpetuating patterns of inequality that are already in motion.

# 5 Taxes and transfers

At the 2019 annual meeting of the World Economic Forum in the Swiss town of Davos, Dutch historian Rutger Bregman gained notoriety on social media for using his speaking time to castigate the wealthy attendees for failing to talk about raising taxes to fight economic inequality:

I hear people talking about the language of participation, justice, equality, transparency. But almost no one raises the real issue of tax avoidance and of the rich just not paying their fair share. It feels like I'm at a firefighters' conference and no one's allowed to speak about water... We can invite Bono once more, but we've got to be talking about taxes. That's it. Taxes, taxes, taxes.

For many scholars such as Bregman, the solution to combatting rising economic inequality in the developed world is straightforward. If we want there to exist a more equal distribution of wealth in society, we must devise an appropriate tax and transfer system to achieve this goal. For his part, Bregman contributes to a growing chorus of voices pushing for a universal basic income (Bregman 2017). Yet, among scholars, there does not appear to be a consensus of what constitutes an ideal tax and transfer system for managing economic inequality.

Taxes and transfers are key policy decisions that can have a sizable influence on the distribution of wealth in a society. Data based on OECD-wide household surveys suggest that taxes and transfers reduced market income dispersion by as much as 25% and relative poverty by approximately 55% in the late 2000s (Pisu 2012). Their redistributive impact tends to be high in Nordic countries (except Iceland) and Eastern Europe, for example, and relatively low in Iceland, Korea, Switzerland, marked by little market income dispersion, in addition to Chile. Among OECD countries, cash transfers reduce income dispersion more than taxes. The US is an outlier in this regard, as roughly the same redistribution is achieved through taxes and transfers.

It has been widely claimed that political parties on the left of the political spectrum will adopt greater redistributive policies compared to their counterparts on the right. Examples of such policies include greater progressivity on income and estate taxes (Garrett 1998; Ganghof 2006), greater transfers, and greater spending on public goods such as housing, healthcare, social services, and education (Huber and Stephens 2001; Ansell 2007). These types of redistributive policies are what characterize the "welfare state" according to Esping-Andersen (1990), whose typology indicates different regime clusters such as liberal, corporatist, and social democratic. Alesina et al. (2001) have similarly highlighted the role of taxes and transfers while exploring why the United States does not have a European-style welfare state. Along with leftist government spending more on redistributive policies, Iversen and Soskice (2006) find that proportional representation systems redistribute more than majoritarian systems. Departing from the focus on post-tax redistribution, Bartels (2008) emphasizes the role of partisanship in relation to changes in the pre-tax



income distribution. Similarly, Piketty and Saez (2003) assert that high marginal tax and inheritance rates at the top can have a major impact on capital accumulation, and therefore the pre-tax income distribution of future periods. For their part, Beramendi and Cusack (2009) evaluate the effect of partisan institutions on both pre-tax and post-tax inequality. The logic of the present discussion can be summarized as follows: we should expect that governments of the left will engage in policies with a greater degree of redistribution that influence the future accumulation of both human and physical capital. Therefore, in countries where leftist governments dominate, we can expect to observe lower levels of pre-tax income inequality. In other words, redistribution breeds greater equality in the long run (Scheve and Stasavage 2009).

Building on the welfare typology of Esping-Andersen (1990), Journard et al. (2012), present four groups of broadly representative tax and transfer systems. First, there is the Nordic model, defined by mostly universal cash transfers, a high level of spending on social services, and a tax mix promoting redistribution. Second, there is the Continental European model where most cash transfers take the form of old-age pensions. This model does not necessarily promote redistribution across individuals, but across lifecycles, with a relatively minor role for personal income taxes. Third, the Anglo-Saxon model characterized by small cash transfers and taxes that promote income redistribution. Within this model there are two sub-groups: one where transfers are targeted at low-income groups, such as Australia and New Zealand, and the other defined by little progressivity of cash transfers apart from those spent on oldage pensions, such as the United States and Japan. Finally, there is a lower-income group where the welfare state is still underdeveloped such as in Turkey and Chile. In this model, spending on taxes and transfers are well below the OECD average and rely heavily on consumption taxes.

The issue of optimal taxation is an age-old question in economics. Sabirianova Peter et al. (2009) find that over 45% of countries experiment with their taxation system each year. However, the authors find that this is not necessarily a beneficial development, as it has led to greater "taxation complexity" and "reduced efficiency of tax collection." The inverted U-shape of the Laffer curve suggests that increasing tax rates beyond a certain point can be counter-productive for maximizing tax revenue. Though there have been many criticisms levied at the Laffer curve, often due to oversimplifying assumptions, the notion that both extremes of too much and too little taxation can be welfare reducing for a society is a relevant concept. Among developed countries, most rely on a progressive tax structure for Personal Income Taxes (PIT) as well corporate taxes. In this context, "progressivity" describes a system of taxation that takes a larger percentage of income on a per-capita basis from high-earning groups. The alternative would be a "regressive" system where a larger percentage of income per-capita is taken from low-earning groups, typically through consumption and sales taxes, such as value-added taxes (VAT). Though many agree that progressivity should be a central component of any well-functioning system, there is much debate over the specific details. Moreover, measuring the progressivity of various tax structures creates additional complexity, given that the progressivity of most tax systems varies widely across incomes (Gerber et al. 2018).



For scholars such as Saez and Zucman (2019), the problem of rising economic inequality relates to declining rates in the progressivity of the tax structure in recent decades. In a country with relatively high levels of inequality such as the United States, the degree of progressivity can indisputably be described as low (Faccio and Iocono 2021). What evidence supports this position of low progressivity in the US tax system? Returning to Saez and Zucman (2019), the authors point to diminished efforts at corporate taxation as being a key indication. They note that the US statutory rate on corporate profits was between 48 and 52 percent between 1951 and 1978, with corporate tax liabilities representing the largest portion of taxes paid by the wealthiest 0.1 percent. In the early 1980s a dramatic decrease in marginal tax rates on corporate income has compressed the distribution of income at the very top. This effect is demonstrated by Nallareddy et al. (2018), who find that a 1% cut in corporate taxes raises the share of income accrued to the top 1% by 0.9. The authors find evidence suggesting that top income earners have shifted income from labor to income from capital due to corporate cuts, which reduces their overall tax liability. These findings support the notion that corporate taxes and income taxes should move in relative concert for any system of progressive taxation, so that income cannot merely be shifted from the personal tax base to the corporate. Finally, Hager and Baines (2020) contend that the reduction in corporate tax rates has also led to increased market concentration for large corporations, which in turn worsens outcomes of inequality. I return to the notion of increased market concentration in the next section, to examine this relationship in more detail.

In contrast, however, shifting too much of the tax burden to corporations may also exacerbate inequality, as high corporate tax rates may reduce the demand for capital, reducing the overall stock of capital and increasing its return, ultimately widening the distribution. Additionally, increasing the corporate tax rate may result in higher prices for manufacturing firms, that are eventually passed off to consumers (Ablett and Hart 2005). In a similar vein, corporate taxes may likewise be passed on to wages, as Fuest et al. (2018) find that wage workers bear almost half of the total burden of taxes. Other studies have shown that the welfare of workers may be adversely impacted by increased corporate taxes (Serrato and Zidar 2016). There are also works that have paradoxically claimed that higher corporate taxes can potentially increase personal inequality, given the possibility of firms to relocate abroad or in the non-corporate sector (Hines 2020).

In addition to PIT and corporate taxes, other forms of taxation have been high-lighted as being relevant to rising economic inequality such as inheritance taxes, estate taxes, property taxes, and consumption taxes. With the rise of globalization, tax avoidance and outright tax evasion have also been discussed as potential drivers of rising inequality. In the case of tax avoidance, wealthy individuals as well as corporations take advantage of favorable rates abroad by stashing their wealth in tax havens. Tax avoidance involves the use of arbitrage, tax shields, and legal loopholes to minimize payment of taxes. Tax evasion or tax fraud, alternatively, involves the failure to pay or deliberate underpayment of taxes. Tax avoidance is legal, while tax evasion is a crime. Whether legal or criminal, both phenomena may have implications for economic inequality.



In summary, the literature appears to suggest that taxes and transfers play a central role in dictating outcomes of economic inequality. However, there does not appear to be a scholarly consensus on the proper way to design a system of taxation to achieve an optimal distribution of income and wealth, while balancing other societal prerogatives. Some works have emphasized progressivity in personal income taxes, while other works have emphasized corporate taxes. Some works have stressed the importance of transfers over taxes. Some works have cautioned that excessive taxation may create spillover effects that ultimately exacerbate inequality, rather than decreasing it. It may be that no one-size-fits-all solution exists, and that individual countries must balance numerous factors while devising a system of taxation that takes economic inequality into account. Nonetheless, there is a growing sentiment that serious efforts at tax reform are necessary to address rising inequality within advanced democracies. However, the details of these reform efforts will remain an open source of debate.

# 6 Concentration of markets

In the first decades of the twenty-first century, over 75% of US industries have become more concentrated according to the Herfindahl-Hirschman Index (HHI), a common measure of market concentration employed by the US Department of Justice. This indicates a significant weakening of competition, not just in select industries, but across the majority of US markets. There is a growing branch of literature demonstrating that product markets have become increasingly concentrated in the US and other OECD countries, which in turn has implications for economic inequality. Grullon et al. (2019) find that firms with the largest increases in market concentration have seen the highest profit returns and abnormally positive stock growth, suggesting that market concentration is becoming an important source of value. In other words, in the United States, industry competition is weakening to the benefit of individual firms with outsized concentrations of market power. Though not to the extent of the United States, Bighelli et al. (2021) observe a trend of steadily increasing market concentration in Europe since 2008. Bajgar et al. (2019) find evidence of rising concentration in Europe as well as in North America on the order of four to eight percentage points for the average industry between 2000 and 2014. Autor et al. (2020) show that the fall in the share of GDP going to labor ("labor share") in the US and other developed countries is based on the rise of "superstar firms." The authors find that industry sales have become increasingly concentrated among a small group of firms, and that industries with the greatest growth in concentration have also witnessed the largest decline in labor share.

Some works have made similar observations regarding the declining labor share across much of the developed world (Barkai 2020). Other studies have looked at the way that concentrated product markets lead to concentrated labor markets, characterized by few firms dominating the hiring of labor. This process has been shown to put a downward pressure on wages, leading to greater wage inequality (Benmelech et al. 2018; Azar et al. 2020). What's more, labor-market monopsony in the US and the lack of unions have combined to create decades of stagnate wage growth despite



rising productivity (Kollmeyer 2017). The correlation between greater market concentration and greater wage dispersion both between and within firms has likewise become a question for many scholars (Song et al. 2019; Cortes and Tschopp 2020). A major question that must be asked is whether there is a relationship between the concentration of markets and the concentration of income and wealth.

The conventional view is that, apart from natural monopolies, overly concentrated markets are welfare reducing and can stifle growth and innovation while exacerbating inequality. Overconcentration of markets leads firms to engage in price manipulation and underproduction compared to what would otherwise be produced in a fully competitive market (Tirole 1988). Additionally, firms with a dominant market share have less incentive to invest and may also erect barriers for newer, more innovative firms. It is under this logic that many antitrust laws were devised, which continue to shape modern economic policy on monopolies (Crampton 2003). The relationship between market power and societal welfare is a delicate balance, however, as the prospect of greater market concentration and higher returns provide motivation for firms to innovate by investing in research and development (R&D). The carrot of greater market share and profits provide an incentive to innovate, and without it, consumers may ultimately be deprived of higher quality and greater variety in goods and services (Motta et al. 2003).

Thus, there is a tradeoff when it comes to market concentration. On one hand, we want to provide adequate incentive for firms to grow and innovate, while at the same time making sure that dominant firms are not crowding out competitors and stifling competition. A key challenge in debates on market dominance is identifying the source of such dominance, and whether that dominance is justifiable or whether it has been maintained artificially. A firm with a dominant market position may possess a technological advantage in production, which will erode over time as technologies spread and diffuse across the industry. However, in some instances, market dominance can be bolstered by legal protections such as patents and trademarks that effectively discourage new entrants (McAdam et al. 2019). Bringing together these perspectives, Aghion et al. (2005) demonstrate an inverted U-shaped relationship between market concentration and innovation using data from UK firms, where too much or too little concentration is bad for innovation. According to their findings, there exists a moderate level of market concentration where there is high incentive to innovate for firms of all sizes.

Yet, growth and innovation are not the only outcomes relevant to a society as it pertains to market concentration. Market concentration also has ramifications for economic inequality and related policy implications such as wage distribution and antitrust laws (De Loecker et al. 2020). What then, is the nature of the relationship between market concentration and inequality? The simplest explanation can be described as follows: when wealth accumulates in a highly unequal manner, a given society will continue to move in the direction of greater and greater inequality, save the presence of redistributive mechanisms. Described with greater technical specificity, Stiglitz (2017) argues that market power leads to an increase in prices relative to costs (markups), which both lowers workers' wages as well as the overall standard of living. Over time, monopoly pricing on goods and services transfers wealth from workers and ordinary savers to oligopolies and monopolies



in the form of capital gains, dividends, and executive compensation. Firms in sectors ranging from airlines to agriculture collude, merge, and exclude rivals, then raise consumer prices above competitive levels while pushing prices below competitive levels for suppliers thanks to monopsony buying power. In a country such as the United States that has enabled this type of regressive redistribution, the aggregate wealth transfer has been estimated at hundreds of billions of dollars per year (Khan and Vaheesan 2017). Inequality breeds greater inequality as monopoly and oligopoly interests employ market power as political clout to enact favorable legislation thanks to lobbying and campaign finance. This can create a vicious cycle where high market concentration leads to expanded political power, which is then employed to change the rules of the game that perpetuate inequality. For example, large monopoly rents provide great incentive for lobbying for lower corporate taxes (Piketty et al. 2014). Ultimately, Stiglitz (2012) argues that rising inequality in the United States is the fault of antitrust laws failing to keep up with an evolving economy where leveraging and outright abuse of market power has become easier.

The domination of markets by monopolists and oligopolists is not inevitable. In addition to prominent voices such as Piketty and Stiglitz, many scholars and public intellectuals have expressed the view that antitrust law should be fundamental to any policy reform that seeks to address economic inequality (Reich 2015; Atkinson 2015). As Grewal (2014) argues, "Capitalism is fundamentally a legal ordering: the bargains at the heart of capitalism are products of law." In the United States, many scholars point to a growing neoliberal intellectual movement in the 1960s and 1970s (see Hayek 1960; Friedman 1962) that eventually culminated in the Reagan administration's overturning and rewriting of antitrust law in the 1980s as a watershed moment where markets became overconcentrated and less competitive. Though there seems to be a growing movement for antitrust reform in the United States, there is less momentum in Europe. This may be due to lower aggregate levels of inequality, or perhaps given that European competition law is already more stringent (Gutiérrez and Philippon 2018). For example, Zac (2020) finds that US antitrust laws are linked to higher levels of income inequality when compared with European competition law. Baker and Salop (2015) argue that antitrust reforms may help combat rising economic inequality, but that they are not a panacea, and should be packaged with other reforms in tax, labor, and trade policy to reverse the tide of rising inequality within advanced democracies.

Thus, there does appear to be some relationship between rising market concentration and rising economic inequality, but this problem is much more acute in United States than other advanced democracies, and the exact mechanics of this relationship have not yet been fully clarified. Moreover, if we assume that there is, in fact, a relationship between market concentration and economic inequality, the question of what should be done remains a source of debate. For some, anti-trust reform is an attractive solution. For others, antitrust reform is more relevant in some contexts than others, and only as part of a deeper restructuring in the relationship between markets and society.



# 7 Conclusion

In this paper, I united siloed academic conversations under a common theme to address an urgent problem burdening some industrialized democratic societies more than others: economic inequality. Widening income and wealth inequality are not merely ethical quandaries, but exacerbate other issues of societal concern such as political inequality, far-right populism, and economic growth. Moreover, economic inequality can reduce trust between individual members of a society and contribute to the fraying of the social fabric. Beginning by framing the variegated nature of this problem, where income and wealth are more concentrated in some advanced democracies more than others, the subsequent sections of this paper reviewed key debates and seminal contributions to the literature in five issue areas suggested as important determinants of growing economic inequality: technology, globalization, labor institutions, taxes and transfers, and the concentration of markets. Based on the existing evidence, I contend that each of these factors has contributed to exacerbating income and wealth inequality. However, it is important to acknowledge that there is variation in the relative impact of each determinant. Therefore, a promising avenue of future research would be to measure and compare these determinants by employing quantitative statistical analysis.

It is also worth pointing out that the factors discussed in this paper are deeply intertwined with the economic systems in which they exist. In the case of advanced democracies, virtually all countries represent a unique form of capitalist market economy in which decisions regarding production, distribution, investment, and consumption are driven primarily by forces of supply and demand. Though most OECD countries can reliably be described as market-oriented or capitalist, the arrangement of national institutions vary in significant ways. In this respect, a promising analytical framework and avenue for future research is the literature known as Varieties of Capitalism (VoC). The VoC literature emphasizes that national institutions configure into complementary systems of economic organization (Hall and Soskice 2001). Rather than treating these institutions as individual variables, this approach acknowledges that national institutions group together as coherent entities or gestalts, on a spectrum ranging from coordinated market economy (CME) to liberal market economy (LME). Unifying economic inequality under the logic of the VoC framework, one can surmise that factors such as technology, globalization, labor institutions, taxes and transfers, and the concentration of markets are, in fact, different branches on the same tree. In this way, certain configurations of national economic institutions are more conducive to higher levels of inequality than others, such that unique distributions of income and wealth correspond to American capitalism, French capitalism, Japanese capitalism, or otherwise. Future work on economic inequality should therefore embrace the VoC framework as a useful tool for understanding economic inequality.

**Author contributions** The author confirms sole responsibility for all aspects of the paper.

# **Declarations**

**Conflict of interest** The author declares no conflicts of interest.



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