What is driving wealth inequality in the United States of America? the role of productivity, taxation and skills

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The Role of Productivity, Taxation and Skills

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Abstract

Out of four major structural changes affecting the US economy – namely a rising share of skilled workers, skill-biased technological change, decreasing progressiveness of taxation and productivity slowdown – we show that the decline in productivity growth not only is the main driver of the widening wealth disparities observed in the United States of America over the past few decades, but is also the only mechanism that can explain inequalities both within and between skill groups.

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▶ 1 Introduction

Over the past two decades, income inequality has increased in a large majority of member countries of the Organization for Economic Co-operation and Development. The average income gap between the top 10 per cent and the bottom 50 per cent of individuals within countries has almost doubled. If we look at wealth inequality, the wealth gap between upper-income families and middle- and lower-income families is wider than the income gap and is growing more rapidly (Chancel et al. 2022). According to a study conducted by the Pew Research Center in 2020, "[t]he richest families in the U.S. have experienced greater gains in wealth than other families in recent decades, a trend that reinforces the growing concentration of financial resources at the top" (Horowitz, Igielnik, and Arditi 2020). Identifying the driving forces of inequality is a key challenge in designing effective policies to achieve inclusive and equitable growth and development.

Existing studies have pointed to several structural changes that may be leading to greater inequality. We consider four of them in this paper: declining productivity, the growing share of skilled workers in the economy, skill-based technological change, and a trend whereby taxation is becoming less progressive. With regard to the first of these processes, that is, the slowdown in productivity growth, there is clearly a discrepancy between the level of investment in the information technology sector and national productivity levels. Back in 1993, Erik Brynjolfsson referred to this situation as the "productivity paradox", which is encapsulated in the following quip: "You can see the computer age everywhere but in the productivity statistics" (Solow 1987).[1] In the United States of America, the growth in labour productivity – real output per hour worked – slowed down markedly around 2004. Over the previous ten years, labour productivity in the business sector had risen at an annual average rate of more than 3 per cent. It slowed to about 2 per cent a year during 2004–10 before dropping to a paltry 0.5 per cent during 2010–16. More precisely, using data from Fernald (2014), we estimate that the growth rate of total factor productivity decreased significantly from 2.1 per cent before 1989 to 0.89 per cent in 2010. If the rate of return on capital, r, is much larger than the rate of growth, g, then existing capital grows faster than new capital created out of accumulated income and already rich owners of capital will become even richer. In contrast, a higher growth rate g implies higher income growth and enables those at the bottom of the distribution to accumulate new wealth, thereby reducing wealth concentration. As argued by Piketty (2014) and Piketty and Zucman (2015), a rate of return that exceeds economic growth (the r > g mechanism) is a key factor driving economic inequality. A second factor is related to the evolution of supply of, and demand for, skills. A rising share of skilled workers can lead to a reduction in inequalities as the relative scarcity of such workers decreases.[2] A third driver is skill-biased technological change, which pushes the skill premium up, ultimately increasing inequalities between skill groups (Goldin and Katz 2009). The fact that the skill premium is rising suggests that the skills required to handle new technologies are in scarce supply (Acemoglu and Autor 2011). Moreover, it is generally agreed that skill-biased technological change led to a hollowing-out of the wage distribution in the 2000s, when many middle-wage cognitive routine occupations were automated (Goos, Manning, and Salomons 2014). The fourth driver of rising inequality has to do with the degree of progressiveness of the tax system. Over the past decade, several countries have implemented tax reforms making their tax structures much flatter (see Duncan and Sabirianova Peter 2012). The shift to flat taxes, or to a tax structure with lower levels of progressiveness, is consistent with a decline in the top income tax rates and has been associated with high levels of inequality. Gerber et al. (2018) find quite strong evidence of tax progressiveness having an impact on inequality.

[1] The lack of diffusion of new technologies can be viewed as a major factor behind the productivity paradox (Ernst 2022).

[2] It is worth noting that this effect may be ambiguous. Aziz and Cortes (2021) argue that, in societies where the share of skilled workers is below 50 per cent, a rise in educational attainment increases inequality between skill groups. Conversely, in societies where that share is above 50 per cent, an increase in educational attainment puts downward pressure on the skill premium and ultimately reduces inequality between skill groups.

To analyse the main drivers of wealth inequality, we develop a closed-economy general equilibrium model based on Ahn et al. (2018). We investigate the impact of four structural changes on rising wealth inequalities: (a) the increasing gap between interest rate and productivity; (b) the rising share of educated workers; (c) skill-biased technological change; and (d) the reduction of progressiveness in taxation. In order to measure the impact of these structural changes, we consider a heterogeneous agents model à la Aiyagari (1994) with skilled and unskilled workers (as in Ahn et al. 2018), where tax distortions modify labour supply through preferences à la Greenwood, Hercowitz, and Huffman (1988). The taxation is modelled by the non-linear function proposed by Heathcote, Storesletten, and Violante (2017). Finally, in order to have the model generate wealth inequalities similar to those observed empirically, we introduce heterogeneous discount factors among workers as in Krusell and Smith (1998). To solve and simulate the model, we employ the methodology of Achdou et al. (2021). The aforementioned structural changes are introduced in the model as permanent shocks that modify the steady-state wealth distribution. The shocks are calibrated using empirical data on (a) the rise in the share of skilled workers in the US labour market; (b) the technological change which favours skilled workers; (c) the decreasing progressiveness of the tax system; and (d) the slowdown in aggregate productivity growth. By comparing the initial steady state (without any shocks) and steady states in which all shocks or only one of them has occurred, we can measure the relative contribution of each shock to the rise in inequality, together with the contributions of interactions between these shocks. The modelling results show that all shocks, except for the growing share of skilled workers, induce an increase in wealth inequality between skill groups. When it comes to wealth inequality within skill groups, only the productivity slowdown can explain the surge in inequality of this kind, which is either unchanged by, or decreases in response to, shocks (a) to (c).

Our analysis contributes to inequality research in several respects. First, a very large body of literature investigating wealth inequality through general equilibrium models has emerged since the seminal contribution by Aiyagari (1994), with such recent important additions as Kaymak and Poschke (2016) and Hubmer, Krusell, and Smith Jr (2020). In this paper we draw on such earlier studies to identify potential drivers of wealth inequality in the United States. We extend the analytical approach taken in those studies by considering not only variations in the overall wealth distribution but also changes in inequality between and within skill groups. As noted by Gottschalk (1997), "[i]nequality increased not only among those with different observable traits, such as gender, race, education and experience, but also within groups of workers with the same gender, race, education and experience". Building on this evidence, Heathcote, Storesletten, and Violante (2010), among others, analyse the dynamics of wage, earnings and income inequality both between and within groups. As for the role played by productivity slowdown in driving wealth inequality,[3] many studies have looked at the effect of the r > g mechanism described by Piketty (2014) (see, for example, Jones 2014; Krusell and Smith 2015; De Nardi, Fella, and Yang 2016). To the best of our knowledge, we are the first to explore how this mechanism affects wealth inequality both between and within skill groups. Our emphasis on skills (and, therefore, also education) is justified, since the empirical evidence shows that the distribution of skills is an essential piece of the wealth-inequality puzzle (Castañeda, Diaz-Gimenez, and Rios-Rull 2003; Cooper and Zhu 2016). This ties in with the observation by Bartscher, Kuhn, and Schularick (2019) that the college wealth premium in the United States has increased substantially since the 1980s and is much larger than the college income premium. There are growing concerns that, on the one hand, greater concentration of wealth may lead to bigger inheritances as the richest households pass on fortunes to their children and that, on the other hand, inheritance further

increases wealth persistence (Adermon, Lindahl, and Waldenström 2018). Existing studies suggest that inherited wealth accounts for between 15 and 31 per cent of total household wealth.[4] With inherited wealth playing an increasingly greater role than self-made wealth, intergenerational social mobility may well decline. In a recent survey of around 1,000 individuals who held

[3] As forcefully demonstrated by Piketty (2014), wealth inequality is particularly relevant because wealth is even more unequally distributed than income.

[4] For a review of the literature on this topic, see Kopczuk and Lupton (2007).

over US $ 3 million in investable assets, the Bank of America (2023) found that only 27 per cent were self made, while the rest had either some inherited wealth or an affluent upbringing or both. The negative effects of wealth concentration and inheritance on intergenerational social mobility are amplified when combined with the other advantages that wealthy parents provide their children with, such as investing more in them and sending them to better-quality schools (Blanden, Gregg, and Macmillan 2007; Keane and Wolpin 2001; Daruich and Kozlowski 2020). Wealth concentration and inheritance could end up creating a "glass floor" below which children in wealthy families cannot fall, thereby limiting downward mobility.[5]

This paper is structured as follows. Section 2 presents a number of stylized facts regarding wealth inequality. Section 3 discussed the model, while section 4 explains the calibration. Section 5 discusses the results. Additional analysis considering changes in income risk over time is presented in section 6. Finally, section 7 offers some conclusions and policy implications.

[5] For further analysis of upward and downward intergenerational mobility in the United States, see Langot et al. (2023).

▶ 2 Stylized Facts

The Survey of Consumer Finances (SCF) has been measuring the wealth of US households every three years since 1989. Using SFC data, earlier papers have analysed the distribution of wealth between households taking into account household characteristics such as the level of education of the family reference person (see Cooper and Zhu 2016; Kuhn and Rios-Rull 2016; Pfeffer, Gross, and Schoeni 2019).[6] Recently, Kuhn, Schularick, and Steins (2017) have proposed the Historical Survey of Consumer Finances (HSCF) which tracks back the distribution of wealth to 1949. Bartscher, Kuhn, and Schularick (2019) report the distribution of wealth by skill groups using this survey since 1956. We complement this literature by describing extensively the dynamics of wealth inequality both between skill groups (subsection 2.1) and within skill groups (subsection 2.2).[7]

2.1. Inequality between skill groups

In the SFC, households are classified into four groups according to the level of education: "No high school diploma", "High school diploma", "Some college" and "College degree". Consistently with our theoretical model, we use a two-level classification (skilled and unskilled) in which the three groups with lower educational attainment ("No high school diploma", "High school diploma" and "Some college") are combined to make up the "unskilled" group, while the "skilled" group comprises those with "College degree" education.

Table 1 shows that the share of unskilled households in the total population has fallen from 76.76 per cent in the first wave of the survey (1989) to 65.97 per cent in the 2016 wave, reflecting the rising level in educational attainment in the United States.

▶ **Table 1: Wealth inequality across skill groups in the United States: Share of unskilled households in the total population and in the four quartiles of the wealth distribution, 1989–2016 (percentage)**

	All	p0-25	p25-50	p50-75	p75-100
Share of unskilled in 1989	76.76	86.83	84.68	78.77	56.75
Share of unskilled in 2016	65.97	81.06	76.74	67.11	38.99
Variation (in percentage points)	-10.79	-5.77	-7.93	-11.65	-17.76

Note: Source: Authors' calculations based on data from the Survey of Consumer Finances.

▶ **Table 2: Wealth inequality across skill groups in the United States: Mean value of wealth held by households, skilled versus unskilled, 1989–2016 (thousands of 2016 US dollars)**

	All	Skilled	Unskilled	Wealth Ratio
Mean value in 1989	353.33	765.69	228.52	3.35
Mean value in 2016	689.51	1504.17	269.29	5.59
Annual growth rate	2.51	2.53	0.61	1.91

Note: Source: Authors' calculations based on data from the Survey of Consumer Finances.

[6] Kuhn and Rios-Rull (2016) report the distribution of earnings, income and wealth for the US economy using the 2013 SCF survey by education level (5 groups). Table 2 in Pfeffer, Gross, and Schoeni (2019) reports the median and Gini coefficient by education level (5 groups) for 3 waves (1989, 2007, 2016) of the SCF survey. Table 14 in Cooper and Zhu (2016) shows the asset allocation for four education levels.

[7] Detailed statistics are reported in Appendix 7.

Table 2 documents the rise in wealth inequality across skills. The mean value of wealth increased at a rate of 2.51 per cent per year for all households raising from 353 to 689 thousands of 2016 US dollars. However, this increase in wealth has been shared very unevenly: the annual rate of wealth growth was 2.53 per cent for skilled households, compared with just 0.61 per cent for unskilled ones. The wide gap in wealth accumulation has markedly increased the wealth ratio between skilled and unskilled households from 3.35 to 5.59 over the same period. This means that unskilled households have been pushed out of the top of the wealth distribution, as can be seen in table 1. In 1989, 57 per cent of wealthy households (defined as the top quartile) were unskilled, compared with just 39 per cent in 2016. This decrease of roughly 18 percentage points is much larger than the decrease in the share of unskilled households in the total population (11 percentage points) or the decrease in the share of unskilled households in the first quartile of the wealth distribution (6 percentage points).

2.2. Inequality within skill groups

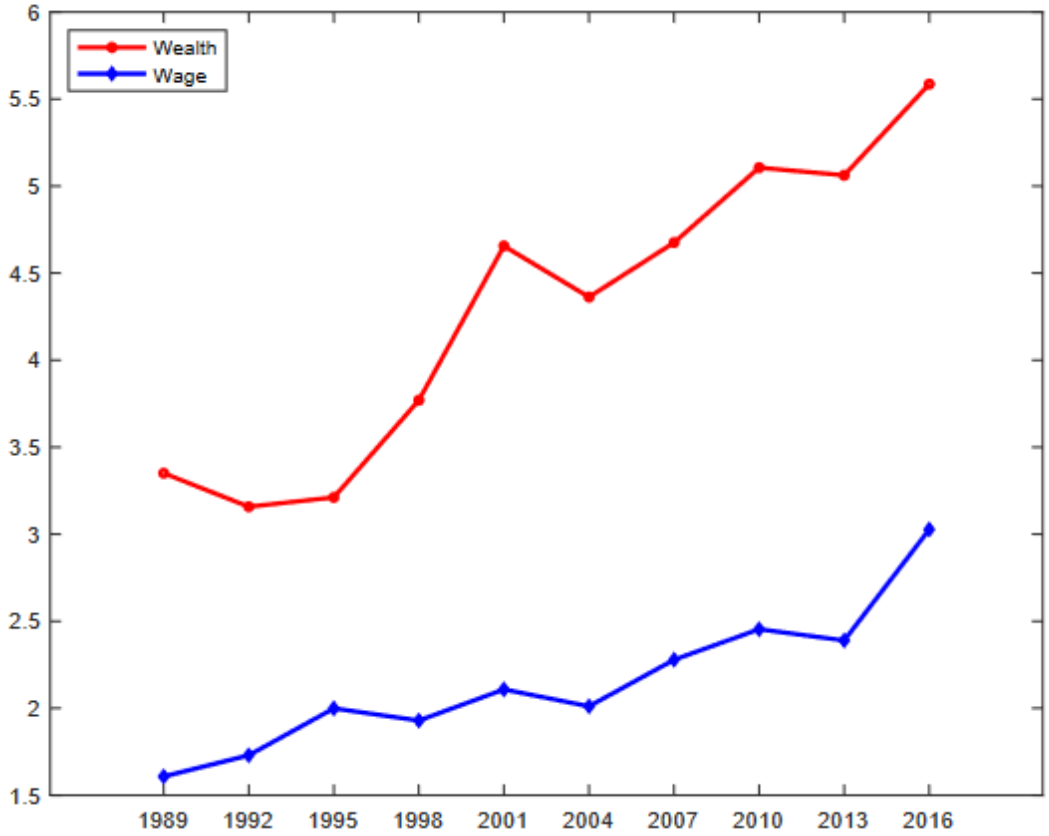
We now look at the second dimension of inequality that can be analysed using the information contained in the SCF: within-skill inequality. Table 3 compares three common indicators of inequality (the wealth Gini coefficient for skilled and unskilled, the interquartile ratio and the share of wealth possessed by the top quartile in the distribution) for all households and then by skill level, in 1989 and 2016. This table shows two striking facts: first, wealth inequality is almost identical at the global level and at the skill levels – except for the interquartile ratio which suggests a more unequal wealth distribution among unskilled households than among skilled households. Second, wealth inequality has increased both overall and in each of the skill groups. For example, the increases in the share of wealth possessed by the top quartile between 1989 and 2016 are roughly similar for all, skilled, and unskilled households: 6.24, 5.38, and 4.78 percentage points, respectively.

▶ **Table 3: Wealth inequality within skill groups in the United States, 1989–2016**

	All	Skilled	Unskilled
Gini coefficient (1989)	0.79	0.75	0.77
Gini coefficient (2016)	0.86	0.81	0.82
Inter quartile ratio (1989)	26.16	10.16	36.26
Inter quartile ratio (2016)	36.28	16.97	39.64
Top quartile share (1989)	85.17	82.39	83.01
Top quartile share (2016)	91.41	87.77	87.79

Note: Source: Authors' calculations based on data from the Survey of Consumer Finances.

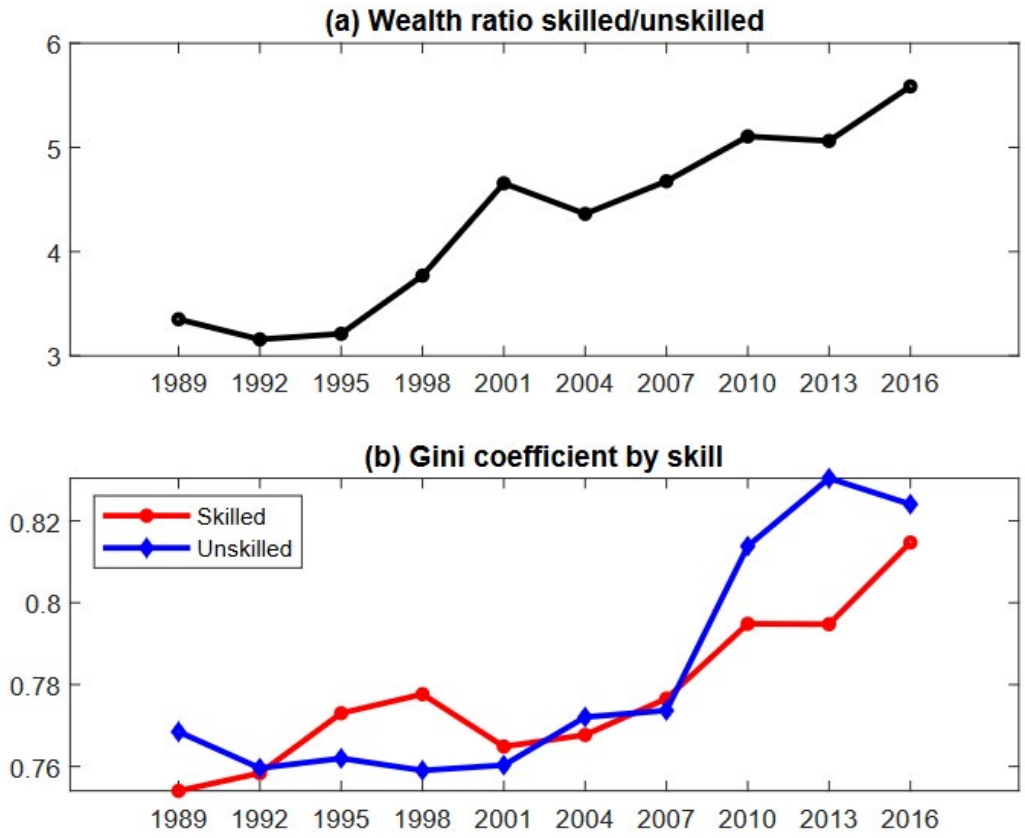
▶ **Figure 1: Wealth and wage inequality between skills in the United States**



Note: Wealth inequality is computed as the ratio of the average wealth between skilled skilled and unskilled, while wage inequality is computed as the ratio of the average wage between skilled and unskilled. Source: SCF and authors' calculations.

Figure 2 summarizes some relevant stylized facts. Between 1989 and 2016, the overall rise in wealth inequality has been driven by an increase in inequality across skill levels, as shown by the evolution of the wealth ratio in panel A, and within skill groups, as suggested by the evolution of the wealth Gini coefficients for households in the two different groups in panel B. These findings motivate the development of theoretical models with a double source of heterogeneity: agents are heterogeneous with regard to both their skill level and their labour market history, given their skill level. Both sources of heterogeneity need to be taken into account to understand the increase in wealth inequality between and within skill groups that is illustrated in figure 2.

▶ **Figure 2: Wealth inequality across and within skill groups in the United States, 1989–2016**



Note: Source: Authors' calculations based on data from the Survey of Consumer Finances.

To conclude this subsection, we discuss one last stylized fact: widening wealth disparities have been highly correlated with the rise in wage inequality. Using SFC series, Figure 1 compares wealth and wage inequality between skilled and unskilled households between 1989 and 2016. Wealth inequality is twice as high as wage inequality and this ratio is remarkably stable over the period (1.99 on average, oscillating between 1.61 and 2.21 without a clear trend). The rise in wealth inequality has coincided with an increase in wage inequality (the wage ratio has almost doubled from 1.61 to 3.02). This evolution of wage inequality has been widely explained in terms of a biased technological change in favour of skilled workers[8] and hence motivates the study of the role of biased technological change in shaping between- and within-skill inequality.

2.3. Is there a "wealth polarization"?

The literature on job polarization focuses on three groups of workers categorized by skill level: low-, medium- and high-skilled workers. Medium-skilled households in the United States are wealthier than unskilled ones, but experienced a fall in mean wealth between 1989 and 2016 (see table 4). Interestingly, the increase in the wealth ratio is much greater if we compare high- and medium-skilled households than if we compare high- and low-skilled households (2.59 versus 1.92, respectively). When it comes to inequality within skill groups, medium-skilled households have experienced the strongest increase in the Gini coefficient of wealth distribution, as can be seen in figure 3.

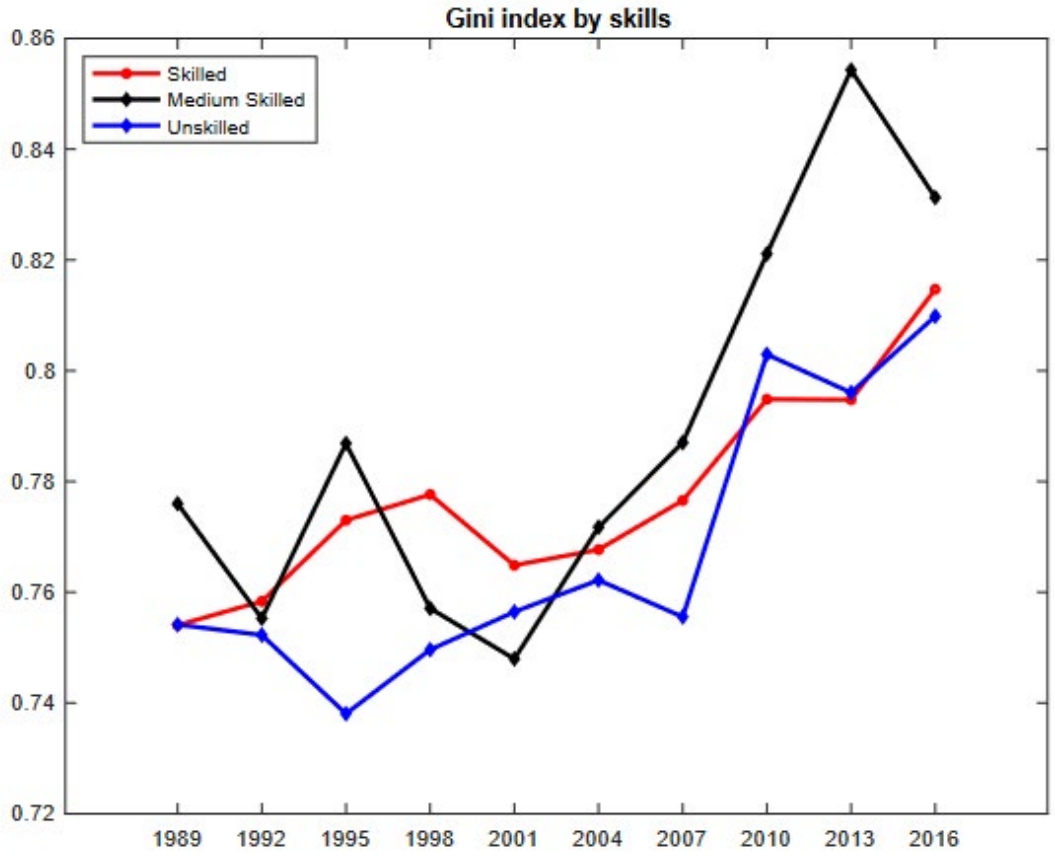
[8] See, for instance, Krusell et al. (2000).

▶ **Table 4: Wealth inequality between skill groups in the United States, 1989–2016**

	All	Skilled	Medium	Unskilled	Ratio skilled to medium-skilled	Ratio skilled to un-skilled
1989	353.33	765.69	344.84	186.50	2.22	4.11
2016	689.51	1504.17	340.09	219.21	4.42	6.86
Annual growth rate	2.51	2.53	-0.05	0.60	2.59	1.92

Note: Source: Authors' calculations based on data from Survey of Consumer Finances.

▶ **Figure 3: Wealth inequality between skills in the United States, 1989-2016**



Note: Unskilled people are defined as those having at best a high-school diploma; medium-skilled people are those having at best a bachelor's degree; skilled people are those having higher than a bachelor's degree. Source: Authors' calculations based on data from the Survey of Consumer Finances.

▶ 3 Model

We develop a general equilibrium model with incomplete financial markets and idiosyncratic productivity shocks à la Achdou et al. (2021). The model is extended to include labour supply as in Chang and Kim (2006), heterogeneous agents (skilled and unskilled workers, as in Ahn et al. 2018), the non-linear fiscal system à la Heathcote, Storesletten, and Violante (2017) and skill-biased technological change. Variables with a dot on top denote growth rates, while variables with a tilde on top are in level.

3.1. Households

Agents can be skilled (*s*) or unskilled (*u*) workers, $q \in \{u, s\}$. Within each skill group, there exist patient (*p*) and impatient (*i*) agents characterized by their discount factor, $\omega \in \{p, i\}$. We denote the state vector $\varsigma = (q, \omega)$.

The utility function of the household with skill level *q* is

$$\mathrm{E}_0 \int_0^\infty e^{-\widetilde{\rho}_\varsigma t} \frac{1}{1-\gamma} \left(\widetilde{c}_{\varsigma,t} - \widetilde{\Theta}_t \frac{h_{\varsigma,t}^{1+\chi}}{1+\chi} \right)^{1-\gamma} dt \qquad (1)$$

where $\widetilde{c}_{,t}$ and $h_{,t}$ denote respectively consumption and hours worked and they both depend on the household's skills and patience and his/her labour market history. The parameter χ measures labour supply elasticity, γ is the risk aversion parameter and ρ is the discount factor for each type of household.

The budget constraint of this household is

$$\dot{\widetilde{a}}_{\varsigma,t} = r_t \widetilde{a}_{\varsigma,t} + \widetilde{w}_{q,t} z_{q,t} h_{\varsigma,t} - T(r_t \widetilde{a}_{\varsigma,t} + \widetilde{w}_{q,t} z_{q,t} h_{\varsigma,t}) - \widetilde{c}_{\varsigma,t} \qquad (2)$$

where $\widetilde{a}_{,t}$ is the financial assets accumulated by households on which they receive the interest rate r_t at time *t*. Financial markets are imperfect: there is a borrowing constraint which limits household debt to $\bar{a}$. At each time *t*, when they supply work $h_{,t}$, households *q* receive wage $\widetilde{w}_{q,t}$, depending on his/her skill level, which is subject to a labour income shock $z_{q,t}$.

The function describing taxes T (·) is given by

$$T(r_t \widetilde{a}_{\varsigma,t} + \widetilde{w}_{q,t} z_{\varsigma,t} h_{\varsigma,t}) = r_t \widetilde{a}_{\varsigma,t} + \widetilde{w}_{q,t} z_{q,t} h_{\varsigma,t} - (1-\tau) e^{\lambda g} \left(\widetilde{w}_{q,t} z_{q,t} h_{\varsigma,t} + r_t \widetilde{a}_{q,t} \right)^{1-\lambda} \qquad (3)$$

where τ is the tax rate on financial income, λ measures the progressiveness of the taxation scheme and *g* is the long-run technological progress. A fall in λ makes the fiscal system less progressive. For $\lambda = 0$ (no progressiveness), the budget constraint becomes

$$\dot{a}_{\varsigma,t} = [(1-\tau)r_t - g]a_{\varsigma,t} + (1-\tau)w_{q,t}z_{q,t}h_{\varsigma,t} - c_{\varsigma,t} \quad (4)$$

The process of labour income shock $z_{q,t} \in Z_q$, with $\overline{z}_q = 1$, is

$$dz_{q,t} = \theta_q(\overline{z}_q - z_{q,t})dt + \sigma_q dW \quad \forall q \in \{u,s\} \quad (5)$$

where θ_q governs the persistence of the labour income shock. We will later interpret an increase in σ_q as a more risky labour market for workers. The joint distributions of z_q and wealth a_q are denoted $g_q(a_q,t)$, for $q = \{s,u\}$.

Following Achdou et al. (2021), the Hamilton-Jacobi-Bellman equation in stationary variables $xe^{gt} = \widetilde{x}$ is:

$$\rho v(a_{\varsigma,t},\varsigma) = \max_{c_{\varsigma,t},h_{\varsigma,t}} \left\{ u(c_{\varsigma,t},h_{\varsigma,t}) + v_a(a_{\varsigma,t},\varsigma)\dot{a}_{\varsigma,t} + v_z(a_{\varsigma,t},\varsigma)\mu(z_q) + \frac{1}{2}v_{zz}(a_{\varsigma,t},\varsigma)\sigma^2(z_q) \right\} \quad (6)$$

$$\text{s.t.} \quad \dot{a}_{\varsigma,t} = (1-\tau)\left(w_q z_q h_{\varsigma,t} + r a_{\varsigma,t}\right)^{1-\lambda} - g a_{\varsigma,t} - c_{\varsigma,t} \quad (7)$$

where $\rho = \widetilde{\rho} - (1-\gamma)g$. The long-run technological progress g modifies the stationary discount factor (for $\gamma \neq 1$) and the law of motion of the stationary wealth $a_{\varsigma,t}$ because $\widetilde{a}_{\varsigma,t} = a_{\varsigma,t}e^{gt}$ $ga_{\varsigma,t}e^{gt}$. The two terms v_z and v_{zz} represent respectively the first derivative and the second derivative of the value functions with respect to the labour income shocks $z_{q,t}$.

First-order conditions with respect to consumption c_t and labour supply l_t are respectively

$$\left(c_{\varsigma,t} - \theta\frac{h_{\varsigma,t}^{1+\chi}}{1+\chi}\right)^{-\gamma} - v_a(a_{\varsigma,t},\varsigma) = 0 \quad \Rightarrow \quad c_{\varsigma,t} = v_a'(a_{\varsigma,t},\varsigma)^{-\frac{1}{\gamma}} + \theta\frac{h^{1+\chi}}{1+\chi} \quad (8)$$

$$-\theta h_{\varsigma,t}^{\chi}\left(c_{\varsigma,t} - \theta\frac{h_{\varsigma,t}^{1+\chi}}{1+\chi}\right)^{-\gamma} + v_a(a_{\varsigma,t},\varsigma)(1-\tau)(1-\lambda)w_q z_q\left(w_q z_q h_{\varsigma,t} + r a_{\varsigma,t}\right)^{-\lambda} = 0 \quad (9)$$

The labour supply solves

$$\theta h_{\varsigma,t}^{\chi} = (1-\tau)(1-\lambda)w_q z_q\left(w_q z_q h_{\varsigma,t} + r a_{\varsigma,t}\right)^{-\lambda} \quad (10)$$

Piketty effect (r–g) in the model. We consider the case without financial constraints to highlight how the (r–g) effect intervenes in the model. We omit indices for the sake of simplicity. The optimization problem yields:

$$\frac{\dot{c}}{c} = \gamma(R(a) - \rho) = \gamma(R(a) - \widetilde{\rho} + (1-\gamma)g) \tag{11}$$

where the marginal return of an asset R(a) in the stationary economy is

$$R(a) = (1-\tau)r(1-\lambda)(ra + wzh)^{-\lambda} - g \tag{12}$$

It declines with wealth and labour market earnings when λ > 0, with the level of taxation τ and with the long-run trend of the economy *g*. Therefore, a fall in long-run growth stimulates saving in the economy

$$\frac{\dot{c}}{c} = \gamma(R(a) - \rho) = \gamma\Big((1-\tau)r(1-\lambda)(ra + wzh)^{-\lambda} - \widetilde{\rho} - \gamma g\Big) \tag{13}$$

where γ determines the magnitude of the effect. Hence, wealth inequality will be high when individuals accumulate wealth rapidly. If we assume for simplicity that λ = 0, which implies that R(a) = (1 − τ)r − g ∀a, a strong capitalization effect (large *r* − *g*) magnifies inequalities by facilitating wealth accumulation. The decline of the growth rate *g* observed since the 1990s can then rise wealth inequalities. Conversely, a decline in the interest rate, consistent with the wage premium increase, reduces wealth inequality within skill groups. It should also be noted that an increase in the tax rate on financial income τ will decrease (1 − τ)r, and thus *R(a)* when λ = 0 and ultimately will reduce wealth inequalities (weakening of the capitalization effect). This argument is the basis of Piketty's proposal to levy taxes on capital income to reduce inequalities (see Piketty 2014). On the other hand, an objection to using capital income taxes to tackle widening inequalities is that higher taxation on capital will simply lead to capital outflows since capital is internationally mobile.

3.2. Production

The domestic production technology is based on Krusell et al. (2000)

$$\widetilde{y}_t = A\left(\mu F_t^{\frac{\sigma_l - 1}{\sigma_l}} + (1-\mu)(X_t \ell_{u,t})^{\frac{\sigma_l - 1}{\sigma_l}}\right)^{\frac{\sigma_l}{\sigma_l - 1}} \tag{14}$$

where

$$F_t = \left[\zeta\left(s\widetilde{k}_t\right)^{\frac{\sigma_h - 1}{\sigma_h}} + (1-\zeta)(X_t \ell_{s,t})^{\frac{\sigma_h - 1}{\sigma_h}}\right]^{\frac{\sigma_h}{\sigma_h - 1}} \tag{15}$$

$\widetilde{y}_t$ denotes the final output, $_{s,t}$ and $_{u,t}$ the skilled and unskilled labour inputs, $\widetilde{k}_t$ the physical capital input. The parameters $\{\mu, \zeta\}$ determine the income shares of production factors. The parameter σ_l is the elasticity of substitution between unskilled labour and capital or skilled labour

and σ_h is the elasticity of substitution between skilled labour and capital. As shown by Krusell et al. (2000), capital-skill complementarities assumes that $\sigma_l > \sigma_h$.

We consider two sources of technological change. The first one is the technological progress $X_t \equiv e^{gt}$, which is common to skilled and unskilled workers (a drop in *g*, which can be interpreted as a global productivity slowdown). The second source is the skill-biased biased technological progress, *s*, defined such that a rise in *s* increases the demand for skilled workers and decreases the demand for unskilled workers.

3.3. Aggregation

In the financial market, the interest rate adjusts until assets held by households equal the amount of physical capital used in the production sector

$$k = \sum_q \sum_p N_{q,p} \int_a \int_{z_q} a_{q,p}(a, z_s) g_{q,p}(a, z_q) da dz_q \tag{16}$$

In the two labour markets, skilled and unskilled q ∈ {u, s}, aggregate supply of labour equal aggregate demand for labour:

$$l_q = \sum_p N_{q,p} \int_a \int_{z_q} h_{q,p}(a, z_s) g_{q,p}(a, z_q) da dz_q \tag{17}$$

$$\ell_q = \sum_p N_{q,p} \int_a \int_{z_q} z_q h_{q,p}(a, z_s) g_{q,p}(a, z_q) da dz_q \tag{18}$$

Since the size of the total population is normalized to one (in the absence of demographic growth), we impose $N_u + N_s = 1$ and interpret an increase in N_s as the outcome of higher education policy.

The level of taxation τ is adjusted to finance public spending *G*.

▶ 4 Calibration

To study the drivers of wealth inequality in the US economy, we proceed in three steps. First, the model is calibrated for the year 1989, which is the first wave of the SCF. We compute indicators of wealth inequality between and within skill groups. Second, we use external sources (e.g. observed data between 1989 and 2010) as well as the literature to calibrate the size of the shocks that may widen wealth inequalities. Third, we compute the new post-shock steady state and compare it with observed data for 2010.

4.1. Calibration of the constant parameters

▶ **Table 5: Calibrated parameters**

Category	Symbol	Values	Sources and targets (for 1989)
Population	N_s	0.24	Data (SCF 1989)
Preferences	γ	2	Attanasio and Low (2004)
	χ	3	Target: $h_s/h_u = 1.4$
	Θ	1	Normalization
	$\rho_{s,p}$	0.0180	Target: $p[25; 50]_p = 0.045$
	$\rho_{s,i}$	0.0535	Target: $p[75; 100]_p = 0.823$
	$\rho_{u,p}$	0.0245	Target: $p[25; 50]_i = 0.032$
	$\rho_{u,i}$	0.0484	Target: $p[75; 100]_i = 0.830$
	$\text{Share}_{s,p}$	1/4	Target: Capital-Output Ratio = 2.3
	$\text{Share}_{u,p}$	1/5	Target: $\text{Wealth}_s/\text{Wealth}_u = 3.35$

Category	Symbol	Values	Sources and targets (for 1989)
Technology	μ	0.52	Krusell et al. (2000)
	ζ	0.86	"
	σ_i	1.67	"
	σ_p	0.67	"
	s	3	Target: $w_s/w_u = 2.42$
	g	0.021	Fernald (2014)
	δ	0.08	Prescott (2004)
	A	1	Normalization
Earning shocks	θ_i	□ log (0.9859)	Hong, Seok, and You (2019)
	θ_p	□ log (0.9834)	"
	σ_i^2	0.0086	"
	σ_p^2	0.0171	"
Fiscal system	λ	0.16	Ferrière and Navarro (2018)

Table 5 reports the calibrated parameter values for the initial steady state. The calibration relies on external sources and targets which are based on data available for 1989.

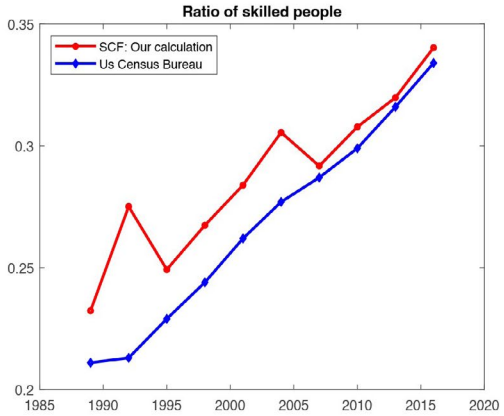
The share of skilled workers N_s is calibrated so as to match the share of this population group in the SCF data in 1989. As for the parameters in the utility function, the parameter measuring agents' risk aversion (γ) takes the values estimated by Attanasio and Low (2004), while the elasticity of hours worked to wages (χ) is calibrated so that the model reproduces the average difference in hours worked between skilled and unskilled workers observed in the SFC for 1989. Regarding the discount factors, ($\rho_{q,w}$, for q=s, u and $\omega = p, i$), their values and their distribution in the population of skilled and unskilled workers are calibrated so as to reproduce the values observed in the SFC for the capital ratio and other statistics summarizing the characteristics of the distribution of wealth in the United States. The parameters of the constant-elasticity-of-substitution (CES) production function take the values estimated by Krusell et al. (2000). The growth rate of the economy and the depreciation rate are set following Fernald (2014) and Prescott (2004). The earning shocks are calibrated following the estimations of Hong, Seok, and You (2019). Finally, the parameter measuring the progressiveness of the US tax system, λ, is calibrated in accordance with Ferrière and Navarro (2018).

4.2. Calibration of the structural changes in the US economy

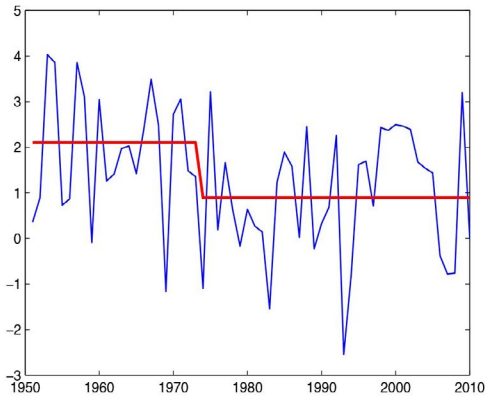
Panel A of figure 4 shows the increase in the share of skilled workers in the United States between 1989 to 2016, based on SCF data. This share rises from 24 per cent to 31 per cent between 1989 and 2010 (see Table 6).

▶ **Figure 4: Structural changes in the US economy**

(a) Share of skilled workers in the United States



(b) Growth rate in the US economy



Panel B in figure 4 shows the historical path of the growth rate of the US economy using data from Fernald (2014). On average, the growth rate has dropped significantly from 2.1 per cent before 1989 to 0.89 per cent in 2010 (see table 6).

Based on Ferrière and Navarro (2018), the parameter λ has dropped significantly from 0.18 to 0.13 after 1989, reflecting a tax system which is becoming less progressive (see table 6).

▶ **Table 6: Calibration of shocks**

Category	Symbol	Values (1989)	Values (2010)	Source
SBTC	s	3.2	8.5	SCF (wage premium)
Growth rate	g	0.021	0.0089	Fernald (2014)
Tax	λ	0.18	0.13	Ferrière and Navarro (2018)
Skills	N_s	0.24	0.31	SCF (share of skilled households)

Note: SBTC = skill-biased technological change; SCF = Survey of Consumer Finances.

▶ 5 Identifying the sources of rising in wealth inequalities

To solve and simulate the model, we employ the methodology proposed by Achdou et al. (2021). Results are reported in table 7. The upper part of table 7 compares empirical data with the model simulations based on the combination of the four shocks.

▶ **Table 7: Comparison between empirical data and model results**

	Wage premium	Wealth premium	Share of total wealth held by top 25% (skilled workers)	Share of total wealth held by top 25% (unskilled workers)	Gini index
Data 1989	2.43	3.35	0.82	0.83	0.79
Model 1989	2.44	3.33	0.80	0.86	0.69
Data 2010	3.34	5.11	0.86	0.87	0.85
Model 2010	3.28	9.12	0.79	0.86	0.79
Model 2010: only Skills	2.03	3.21	0.81	0.83	0.69
Model 2010: only SBTC	3.29	4.09	0.79	0.86	0.71
Model 2010: only Tax	2.68	4.78	0.79	0.85	0.71
Model 2010: only Growth	2.82	6.95	0.87	0.88	0.81

We calibrate the model to reproduce almost perfectly the target moments in 1989. The projections for 2010 simultaneously take into account changes in the composition of labour supply, skill-biased technical change, progressiveness of taxation and the rate of growth of the economy (see table 6). The model predicts an increase in inequality relatively close to the actual increase observed in the United States between 1989 and 2010. The Gini coefficient increases by 10 percentage points (from 0.69 to 0.79), which is very close to the 6 percentage point increase (from 0.79 to 0.85) in the empirical data. With regard to inequalities within skill groups, the share of wealth held by the richest 25 per cent remains stable in the model both for skilled and unskilled workers, while it increases very slightly in the data (from 0.82 to 0.86 for skilled workers and from 0.83 to 0.87 for unskilled workers). As for inequality between skill groups, the wealth premium – defined as the ratio of the average wealth held by skilled workers to the average wealth held by unskilled ones – increases from 3.33 to 9.12 (+5.79) in the model, while in the data the increase is more moderate, from 3.35 to 5.11 (+1.76). We calibrate our model so as to reproduce very accurately the increase in the wage premium observed in the data. The model predicts an increase in the wage premium from 2.44 in 1989 to 3.28 in 2010 (+0.84), while in the data it increases from 2.43 to 3.34 (+0.91). Therefore, we may conclude that the combination of the four structural changes is able to explain the observed evolution of inequalities in the United States from 1989 to 2010.[9] Both the data and the model indicate that, since 1989, the US economy has witnessed a rise in both wealth and income inequality, although wealth seems to be more unequally distributed than wages and income, as argued by Piketty (2014). Wealth inequality has increased to a greater extent between skill groups than within them.

[9] However, our model generates a too high elasticity of wealth premium.

In order to understand the impact of each of these four structural changes on the evolution of US wealth inequalities, we simulate the model by varying only one of the relevant parameters at a time. Specifically, we simulate one by one the effect of (a) an increase in the share of skilled workers; (b) technological change biased in favour of skilled workers; (c) a tax reform reducing the degree of tax progressiveness; and (d) a global productivity slowdown. These counterfactual simulations allow to isolate the impact of each factor (last four rows in Table 7).

The impact of the labour force composition The US economy has experienced a huge increase in the share of educated workers. The "only Skill" row in table 7 shows that, according to our model, the increase in the labour supply of skilled workers relative to unskilled workers should reduce the skill wage premium from 2.44 in 1989 to 2.03 in 2010. The model predicts a fall in the skill wealth premium as well (from 3.33 to 3.21) – leaving wealth inequality within skill groups unchanged. The race between technological change and education, as argued by Goldin and Katz (2009), is the most popular explanation for growing inequality despite rising levels of education. The change in labour force composition is not able to explain the rise in inequality observed in the data, neither between nor within skill groups. On the contrary, an increase in the share of skilled workers seems to moderate the rise in wage and wealth premium. This result is consistent with the observation in Aziz and Cortes (2021) that in societies where the share of skilled workers is above 50 per cent, an increase in educational attainment puts downward pressures on the skill premium and ultimately reduces inequality between skill groups. The US economy crossed the 50 per cent threshold in the 1980s, which explains why an increase in the share of skilled workers has had the effect of reducing between skill inequality.

The impact of skill-biased technological change According to a commonly held view, technological change that is biased in favour of skilled workers explains the rise in the skill wage premium (see Krusell et al. 2000). The "only SBTC" row in table 7 shows that this shock can explain the rise in both wage and wealth premiums between skill groups. According to the empirical data, between 1989 and 2010 the skill wealth premium increased from 3.35 to 5.11 (+1.76), while the wage premium increased from 2.43 to 3.34 (+0.91). The model with an "only SBTC" shock predicts a +0.76 point increase in the skill wealth premium, from 3.33 to 4.09, and a +0.85 point increase in the skill wage premium, from 2.44 to 3.29, which means that it underestimates the increase in both wage and wealth inequality between skill groups. However, while the estimated increase in wage inequality is quite close to the empirical value, the estimated increase in wealth inequality is less than half of the value observed in the data. Moreover, with an “only SBTC” shock, our model predicts a negligible change in inequality within skill groups. Therefore, the "only SBTC" shock is unable to explain either inequality within skill groups or the observed increase in wealth inequality between skill groups.

The impact of the tax reform One of the drivers of widening inequality is the decreasing progressiveness of taxation, as demonstrated by Piketty and Saez (2007) among others. The "only Tax" row in table 7 shows that a fiscal reform reducing the progressiveness of the tax system leads to an increase of both the wage and wealth skill premium. On the one hand, the model with the only tax shock is the able to explain both wage and wealth inequality between skill groups, although it slightly underestimates the increase in both premiums: according to the model, the wage premium should have increased by 0.24 points, whereas the empirically observed increase is 0.91 points; the model predicts a 1.45 point increase in the wealth premium, which is quite close to the increase observed in the data (1.76). In that respect, our results are close to the findings of Kaymak and Poschke (2016). On the other hand, a less progressive tax system is unable to explain the widening of inequalities within skill groups.

The impact of growth We finally analyse the effect of a global productivity slowdown which has been disclosed by Piketty (2014) and Piketty and Zucman (2015) as the $r > g$ mechanism. The "only g" row in table 7 demonstrates the attractive nature of this mechanism: it alone is able to account for an increase in wealth inequality both between and within skill groups, as observed in the data. The model with an "only Growth" shock predicts an increase of 0.05 points in within-skill

inequality for skilled workers and an increase of 0.02 points for unskilled workers. These estimates are very close to the empirically observed values, that is, a 0.04 point increase for both groups.

▶ 6 Extending the analysis: Changes in income risk

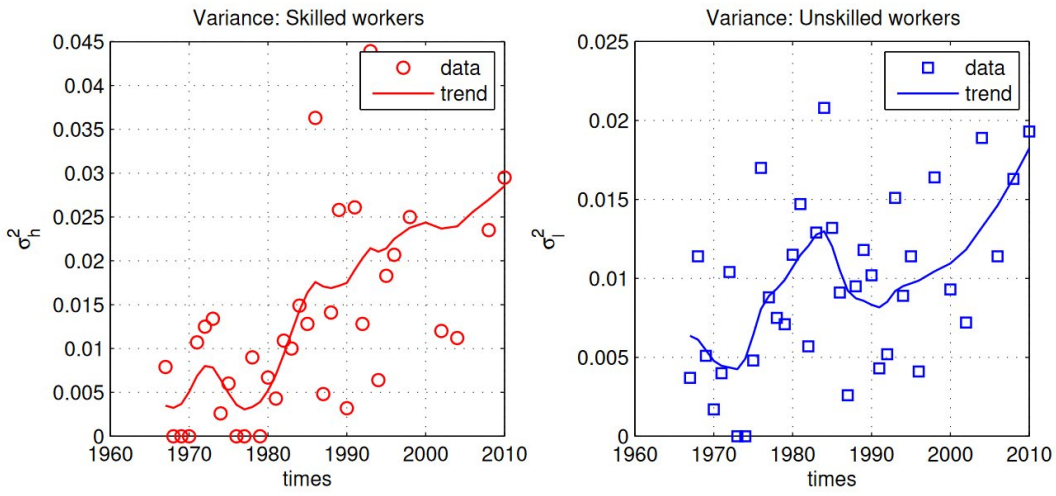
Beyond macroeconomic factors, structural changes can also affect microeconomic risks. Figure 5 shows that earnings risk has indeed increased since the late 1980s for both skilled and unskilled workers.

At the theoretical level, larger individual risks are not necessarily synonymous with rising wealth inequalities. Indeed, the accumulation of precautionary savings is stronger in a risky and uncertain economy and may induce a larger share of households to save. This force can then moderate the very sharp increase in wealth inequalities associated with skill-biased technical progress and economic growth. The underlying reason is that, as argued by Hubmer, Krusell, and Smith Jr (2020), higher income volatility encourages poor households to save (to protect themselves against labour market risk) and rich households to consume (since the return on assets falls).

Table 8 shows the changes in earnings risk used for our model simulations. In particular, we assume that the earnings risk increases more for unskilled workers than for skilled ones, but that its level still remains lower for the unskilled group.

Compared to results reported in table 7, table 9 shows that when we introduce income risk, the skill wealth premium decreases by 0.67 points (from 3.35 to 2.68) and the model does not account for the observed increase in the wealth ratio between skilled and unskilled workers. However, an increase in income risk has a very strong effect on wealth inequalities within skill groups. Indeed, the share of wealth held by the richest 25 per cent in both skill groups falls sharply in the model (by approximately 20 percentage points), which is counterfactual. While wage/income risk can explain higher wage or income inequality, it does not explain the contemporaneous surge in wealth inequality observed in the data. The model with the only income risk leads to a counterfactual drop in the Gini index as well.

▶ **Figure 5: Changes in income risk in the US economy, skilled versus unskilled workers, 1968–2010**



▶ Table 8: Calibration of shocks

Category	Symbol	Values (1989)	Values (2010)	Source
Risk	$\{\sigma_i^2, \sigma_p^2\}$	{0.0086; 0.0171}	{0.0182; 0.0285}	Hong, Seok, and You (2019)

▶ Table 9: Comparison between empirical data and modelling results (with income risk)

	Wage premium	Wealth premium	Share of total wealth held by top 25% (skilled workers)	Share of total wealth held by top 25% (unskilled workers)	Gini index
Data 1989	2.43	3.35	0.82	0.83	0.79
Model 1989	2.44	3.33	0.80	0.86	0.69
Data 2010	3.34	5.11	0.86	0.87	0.85
Model 2010	3.33	5.34	0.67	0.59	0.64
Model 2010: only income risk	2.50	2.68	0.68	0.60	0.54

▶ 7 Conclusions and policy implications

The stylized facts discussed in section 2 highlight the importance of understanding the drivers of rising wealth inequality between and within skill groups. Using our model to analyse the effects of various factors, we found strong evidence for the potential role of the global productivity slowdown in explaining widening wealth inequalities, both between and within skill groups. In contrast, the other structural changes and shocks that we considered are able to explain only inequality between skill groups. Our results are consistent with the view that, while wealth and income inequality between skilled and unskilled workers is due to differences in educational attainment, within-group inequality is due to differences in productivity across firms. Workers in more successful firms are paid more than their peers with the same level of education and skills in less successful firms (see Barth et al. 2016; Furman and Orszag 2018; and Bloom et al. 2018).

Taxation is certainly a key policy tool for sharing the gains from technological progress and reducing in- equality. Governments should not only adopt a fair tax system, but also introduce new taxes to ensure that these gains can be shared equally throughout the economy (for a discussion, see Merola 2022).

8 Appendix: Detailed statistics from the Survey of Consumer Finances

For our analysis we used data from the Survey of Consumer Finances (SCF), which has been measuring the wealth of US households every three years since 1989 (see Cooper and Zhu 2016; Kuhn and Rios-Rull 2016; Pfeffer, Gross, and Schoeni 2019).

In this appendix we report statistics from the 1989, 1995, 2001, 2004, 2007, 2010, 2013 and 2016 surveys. The following definitions are used.

- E: Earnings, defined as wages and salaries of all kinds, plus a fraction of business income. Business income includes income from professional practices, businesses and farm sources. The value for the fraction of business and farm income that we impute to labour earnings is the sample-wide ratio of labour income (wages plus salaries) to the sum of labour income and unambiguous capital income.
- I: Income consists of all kinds of revenue before taxes. We include government and private transfers.
- W: Wealth includes the value of financial and real assets of all kinds net of various kinds of debts. In this case, we take each component of net worth already built in the SCF; therefore, the values reported here are higher than those in Kuhn and Rios-Rull (2016).
- Skilled: "college degree" and "postgraduate".
- Unskilled: "some college", "high school" and "dropout".
- Notations for income distribution: B 0–1 = bottom 1 per cent; B 1–5 = bottom 1–5 per cent; B 5–10 = bottom 5–10 per cent; 1st Q = first quartile; 2nd Q = second quartile; 3rd Q = third quartile; 4th Q = fourth quartile; 5th Q = fifth quartile; T 90–95 = top 90–95 per cent; T 95–99 = top 95–99 per cent; T 99–100 = top 1 per cent.
- Values are in thousands of 2016 US dollars.

▶ Table A1: Average earnings, income and wealth of US households, 1989

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	43.10	49.77	31.78	41.24	63.98	81.82	114.76	204.99	157.30	274.75	885.88	101.07
	I	45.32	49.79	34.32	43.02	72.25	103.42	133.79	335.79	234.22	485.84	1827.06	136.94
	W	-158.25	-20.14	1.34	-0.68	133.26	404.25	903.03	5198.76	3539.53	7679.69	34124.46	1314.73
Unskilled	E	30.23	30.55	11.28	17.49	29.82	37.55	45.72	71.30	60.22	88.87	232.02	40.39
	I	32.23	35.62	18.37	24.37	35.75	45.80	58.69	102.77	85.13	132.27	386.62	53.50
	W	-48.23	-10.23	-0.80	-4.19	25.66	124.46	317.86	1634.31	1097.43	2378.83	12081.53	419.95
All	E	28.87	36.91	10.19	21.91	34.88	46.80	60.30	123.13	101.47	152.71	510.39	57.34
	I	30.84	40.61	17.58	27.74	41.08	56.08	77.40	181.95	132.30	231.05	997.22	76.76
	W	-84.86	-12.32	-0.63	-5.62	41.38	173.59	437.54	2712.41	1705.41	3997.51	19900.92	669.71

▶ Table A2: Average earnings, income and wealth of US households, 1995

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	69.74	40.79	36.34	45.45	62.62	81.95	83.94	217.28	186.12	281.56	1025.79	98.33
	I	72.93	45.09	40.18	48.91	67.11	91.42	102.60	292.22	230.78	397.73	1552.61	120.56
	W	-148.90	-16.56	5.24	4.63	102.10	253.88	579.39	3791.35	2253.95	5359.88	31136.70	947.08
Unskilled	E	30.19	23.24	14.09	16.80	28.97	42.28	47.37	71.41	65.53	78.79	271.47	41.36
	I	33.24	27.27	19.02	22.51	34.88	49.45	57.51	99.78	87.00	111.93	464.06	52.81
	W	-78.31	-11.40	-1.06	-5.02	26.81	107.55	250.81	1270.91	805.96	1678.66	10348.00	330.15
All	E	41.48	28.76	13.65	21.85	37.36	52.12	59.54	123.72	102.39	164.19	596.55	58.85
	I	45.11	32.57	19.89	27.20	42.87	59.24	71.52	167.74	129.91	215.33	944.82	73.62
	W	-100.06	-12.63	-0.66	-4.93	42.19	143.05	325.41	2100.46	1232.66	2751.54	18030.34	519.59

▶ Table A3: Average earnings, income and wealth of US households, 2001

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	59.58	46.43	33.37	46.27	74.76	97.43	114.12	297.35	228.34	513.18	1098.10	125.63
	I	62.34	48.54	38.11	51.01	80.51	107.81	136.51	441.81	300.87	797.51	2088.02	162.97
	W	-109.09	-21.47	5.86	12.85	160.25	408.01	933.15	5868.87	3797.41	9896.26	38571.65	1468.05
Unskilled	E	36.31	29.01	1.44	19.80	37.19	40.99	51.03	78.45	62.27	75.14	356.80	45.48
	I	39.76	32.86	7.57	25.16	40.77	48.99	61.91	108.42	82.88	122.78	476.88	57.04
	W	-59.32	-12.11	-1.07	-4.56	23.31	97.60	265.32	1366.97	938.37	1832.35	9574.80	349.56
All	E	50.07	33.68	11.64	24.80	43.07	53.77	72.80	169.12	135.00	261.34	776.91	72.70
	I	53.15	36.99	17.55	29.64	48.04	62.30	85.69	239.49	174.82	340.53	1444.48	93.02
	W	-77.91	-15.12	-0.44	-4.26	44.55	163.04	432.04	3013.39	1781.14	4608.47	23605.68	729.47

▶ Table A4: Average earnings, income and wealth of US households, 2004

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	27.16	46.16	31.43	44.79	72.61	89.69	106.65	274.15	211.79	408.06	1244.48	117.56
	I	32.97	49.03	36.08	48.96	77.95	102.38	128.67	366.34	281.90	545.45	1854.26	144.84
	W	-162.06	-29.97	-0.64	1.23	138.04	376.57	891.51	5475.11	3380.01	8891.17	38911.66	1375.86
Unskilled	E	45.60	28.10	15.69	20.50	30.46	41.33	45.63	70.25	71.96	58.34	286.48	41.66
	I	49.85	33.82	20.50	26.05	36.04	48.90	58.36	98.81	91.83	90.67	449.15	53.67
	W	-73.78	-10.16	-0.55	-4.47	20.16	91.51	249.80	1376.79	971.83	1816.38	9957.02	347.73
All	E	39.88	34.95	18.71	24.34	41.44	53.46	69.10	158.98	119.46	214.96	829.76	69.45
	I	44.23	39.30	23.61	29.58	46.97	62.13	83.35	213.32	150.26	293.53	1211.37	87.05
	W	-111.56	-16.33	-0.75	-6.59	40.98	157.73	426.66	3003.60	1750.45	4391.43	23950.10	724.07

▶ Table A5: Average earnings, income and wealth of US households, 2007

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	44.21	49.97	37.40	46.12	73.28	95.54	99.26	305.01	288.20	462.22	1415.72	123.83
	I	45.27	55.06	44.24	51.61	80.52	105.72	120.68	442.35	355.60	701.57	2457.92	160.17
	W	-110.42	-28.96	1.18	3.72	149.78	387.06	857.99	5956.26	4086.98	10055.75	40267.84	1471.03
Unskilled	E	33.19	28.13	16.21	19.92	31.57	38.67	45.03	81.88	73.09	83.11	343.55	43.40
	I	39.19	34.70	22.22	26.31	37.83	48.53	58.68	118.52	95.36	120.96	635.24	57.95
	W	-95.67	-13.05	-1.29	-6.90	19.32	95.49	264.85	1381.40	884.51	1711.94	10947.21	350.47
All	E	38.81	36.06	17.91	24.88	38.44	53.69	69.44	172.23	117.66	282.50	875.49	71.76
	I	42.12	42.68	24.74	30.92	45.38	63.85	83.27	246.36	155.09	385.69	1509.85	93.99
	W	-107.69	-18.35	-1.29	-7.09	39.98	166.29	418.91	3106.47	1650.20	4984.13	25040.12	745.57

▶ Table A6: Average earnings, income and wealth of US households, 2010

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	64.93	59.67	42.77	45.44	62.37	80.04	95.04	280.47	248.53	471.98	982.94	112.79
	I	72.13	65.31	48.21	51.68	69.15	91.69	116.94	356.70	300.16	599.34	1377.89	137.39
	W	-245.65	-70.79	-14.00	-25.51	71.81	244.93	691.27	4826.92	3287.17	7684.50	31898.93	1164.72
Unskilled	E	51.26	37.26	25.73	22.92	25.42	38.07	42.75	65.12	57.95	88.35	242.92	38.87
	I	59.10	44.81	32.92	30.59	32.48	46.48	56.19	93.41	81.75	125.08	345.99	51.85
	W	-143.19	-32.89	-5.96	-15.16	10.64	55.22	174.33	1050.43	667.46	1474.98	8051.88	255.47
All	E	60.42	46.40	30.27	27.87	35.53	48.19	58.25	161.79	136.45	260.55	725.57	66.43
	I	68.51	53.02	36.98	35.19	42.05	58.03	73.51	209.24	170.96	319.87	1025.27	83.74
	W	-192.15	-46.59	-7.94	-20.02	20.96	97.54	294.14	2568.44	1604.80	3982.72	20324.84	594.43

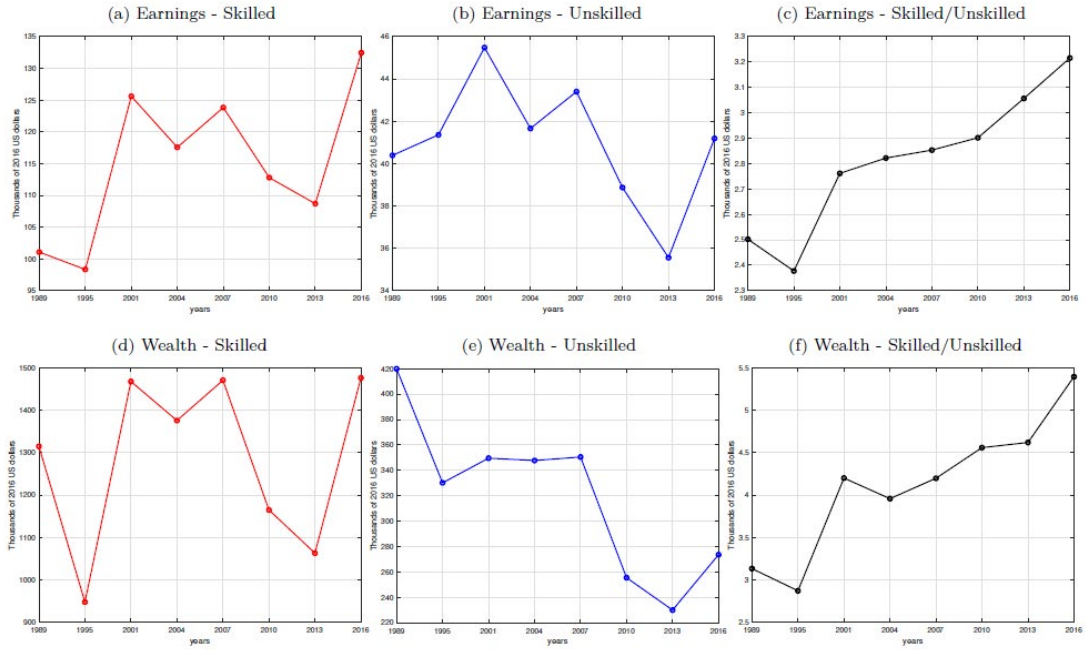
▶ Table A7: Average earnings, income and wealth of US households, 2013

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	44.47	44.82	38.55	37.39	59.63	76.28	96.52	273.76	227.34	399.47	1277.04	108.69
	I	70.77	50.13	44.86	44.23	67.67	90.02	121.10	396.80	296.94	571.96	2294.97	143.92
	W	-188.79	-61.00	-16.66	-21.77	64.62	236.87	624.33	4410.79	2984.98	7055.77	31757.32	1062.61
Unskilled	E	40.15	31.24	20.80	19.38	24.79	33.19	37.87	62.54	50.57	83.38	254.23	35.56
	I	47.15	38.53	28.82	27.46	32.07	42.78	54.46	93.16	73.91	120.67	394.48	50.01
	W	-153.46	-29.95	-5.57	-14.98	9.29	47.18	151.67	954.63	578.53	1234.96	8105.64	230.00
All	E	47.20	34.10	29.77	24.44	32.19	44.16	56.68	162.30	130.18	254.17	771.50	63.93
	I	60.41	41.18	36.36	32.20	39.60	55.19	74.97	230.38	170.34	348.23	1294.15	86.43
	W	-172.65	-41.58	-8.76	-18.63	17.95	89.28	271.00	2406.87	1337.00	3772.93	19600.45	552.93

▶ Table A8: Average earnings, income and wealth of US households, 2016

		B 0-1	B 1-5	B 5-10	1st Q	2nd Q	3rd Q	4th Q	5th Q	T 90-95	T 95-99	T 99-100	All 0-100
Skilled	E	43.37	53.60	46.50	46.39	66.59	81.25	116.57	350.46	268.50	623.34	1658.54	132.45
	I	47.27	57.84	51.88	52.31	77.50	101.47	153.89	526.28	373.53	877.23	3012.74	182.62
	W	-207.90	-64.26	-17.16	-20.17	95.62	297.52	821.07	6165.24	3821.76	9970.48	45762.50	1476.57
Unskilled	E	40.66	32.57	26.56	23.27	27.71	38.70	45.64	70.79	56.63	80.25	352.87	41.19
	I	48.62	39.47	33.70	31.05	35.02	48.62	63.17	110.71	87.03	136.57	514.54	57.67
	W	-97.01	-24.19	-4.79	-10.44	12.16	59.86	174.66	1135.61	653.86	1454.14	9808.87	273.68
All	E	45.96	43.39	30.38	26.57	33.78	48.30	58.69	190.48	136.35	281.44	1118.24	71.55
	I	51.46	48.26	37.17	33.53	41.48	59.71	80.17	279.62	195.62	400.56	1799.70	98.88
	W	-149.97	-38.51	-7.20	-16.36	20.99	99.02	292.37	2990.30	1615.18	4504.90	26296.39	676.86

Figure A1: **Average earnings, income and wealth of US households, by skill group, 1989–2016**



▶ Table A9: Measures of inequality among US households, total and by skill group, 1989

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	4.51	5.04	3.84	1.17	1.47	6.28	3.85	4.60	5.06
Varriance of logs	0.87	0.82	3.76	1.08	0.99	4.16	1.09	1.05	4.27
Gini index	0.48	0.51	0.76	0.51	0.47	0.78	0.53	0.52	0.79
Location of mean	68.00	74.00	79.00	61.00	64.00	77.00	65.00	69.00	80.00
99-50 ratio	7.13	8.64	36.51	6.42	6.57	44.04	7.88	8.37	50.56
90-50 ratio	2.53	2.48	6.62	2.56	2.34	8.31	2.63	2.61	8.50
Mean-to-median ratio	1.39	1.53	3.27	1.28	1.30	4.04	1.38	1.43	4.21
50-30 ratio	1.45	1.47	3.07	1.91	1.74	6.24	1.74	1.66	4.93

▶ Table A10: Measures of inequality among US households, total and by skill group, 1995

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	3.17	4.22	5.08	1.53	2.78	5.87	2.92	4.14	5.89
Varriance of logs	0.82	0.84	3.00	1.02	1.10	3.44	1.04	1.13	3.48
Gini index	0.52	0.52	0.78	0.52	0.48	0.78	0.54	0.52	0.80
Location of mean	72.00	75.00	81.00	61.00	64.00	77.00	67.00	71.00	82.00
99-50 ratio	8.54	9.34	47.69	7.53	7.35	33.17	8.86	9.09	44.00
90-50 ratio	2.67	2.80	7.41	2.67	2.51	6.73	2.64	2.57	7.14
Mean-to-median ratio	1.48	1.61	4.04	1.32	1.33	3.52	1.44	1.48	3.89
50-30 ratio	1.55	1.44	2.33	2.06	1.64	4.64	1.75	1.66	3.92

▶ Table A11: Measures of inequality among US households, total and by skill group, 2001

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	2.15	3.18	3.94	2.01	2.06	5.03	2.34	3.40	4.94
Varriance of logs	0.96	0.94	3.15	0.95	0.92	4.03	1.08	1.08	4.23
Gini index	0.53	0.57	0.77	0.50	0.46	0.79	0.55	0.56	0.82
Location of mean	75.00	79.00	81.00	64.00	64.00	78.00	69.00	73.00	81.00
99-50 ratio	12.87	14.61	50.83	5.33	5.41	46.21	12.20	12.57	80.49
90-50 ratio	2.62	2.84	6.85	2.58	2.46	10.02	2.86	2.79	8.91
Mean-to-median ratio	1.54	1.76	3.71	1.33	1.34	4.64	1.59	1.69	5.05
50-30 ratio	1.54	1.51	2.57	1.72	1.56	4.25	1.67	1.64	4.23

▶ Table A12: Measures of inequality among US households, total and by skill group, 2004

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	2.45	2.78	4.03	1.56	2.05	5.33	2.53	2.99	5.11
Varriance of logs	0.98	0.90	3.45	0.83	0.81	4.22	1.01	1.00	4.53
Gini index	0.52	0.52	0.78	0.48	0.44	0.79	0.55	0.53	0.82
Location of mean	70.00	73.00	81.00	62.00	63.00	78.00	68.00	70.00	81.00

		Skilled			Unskilled			All	
99-50 ratio	9.52	10.33	52.01	5.59	5.20	40.25	9.49	10.20	80.30
90-50 ratio	2.56	2.60	7.03	2.64	2.53	10.34	2.94	2.87	9.94
Mean-to-median ratio	1.46	1.55	3.94	1.27	1.31	4.34	1.54	1.59	5.41
50-30 ratio	1.59	1.58	2.92	1.76	1.52	5.23	1.70	1.62	4.67

▶ Table A13: Measures of inequality among US households, total and by skill group, 2007

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	2.42	3.44	4.30	3.32	4.28	5.97	2.90	4.05	5.44
Varriance of logs	0.97	0.91	3.28	0.93	0.75	4.47	1.08	0.95	4.58
Gini index	0.54	0.56	0.79	0.51	0.46	0.80	0.57	0.55	0.82
Location of mean	74.00	78.00	83.00	62.00	66.00	77.00	70.00	73.00	82.00
99-50 ratio	11.83	13.80	51.36	6.48	6.67	48.08	11.33	12.99	78.35
90-50 ratio	2.72	2.83	7.34	2.83	2.70	9.67	2.85	2.87	8.55
Mean-to-median ratio	1.60	1.74	3.81	1.35	1.40	4.47	1.56	1.69	5.20
50-30 ratio	1.49	1.46	2.88	1.79	1.53	6.01	1.76	1.64	5.10

▶ Table A14: Measures of inequality among US households, total and by skill group, 2010

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	2.59	3.24	4.55	1.84	1.96	6.72	2.74	3.41	5.88
Varriance of logs	1.06	0.98	3.79	1.03	0.69	4.43	1.19	0.94	4.81
Gini index	0.57	0.55	0.82	0.52	0.44	0.85	0.59	0.55	0.87
Location of mean	73.00	75.00	81.00	61.00	64.00	79.00	71.00	73.00	83.00
99-50 ratio	13.08	13.39	69.33	6.20	5.70	63.88	13.19	12.91	115.59
90-50 ratio	3.23	3.19	12.27	2.84	2.60	11.91	3.06	2.96	14.20
Mean-to-median ratio	1.67	1.73	5.51	1.38	1.37	5.86	1.61	1.65	7.73
50-30 ratio	1.61	1.52	3.56	1.96	1.54	5.03	1.87	1.67	5.43

▶ Table A15: Measures of inequality among US households, total and by skill group, 2013

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	3.00	3.89	5.43	1.33	1.48	4.78	3.09	4.06	6.62
Varriance of logs	1.20	1.01	3.45	1.07	0.73	4.77	1.27	0.99	4.97
Gini index	0.58	0.57	0.82	0.53	0.45	0.87	0.60	0.56	0.87
Location of mean	73.00	76.00	81.00	62.00	66.00	80.00	70.00	73.00	83.00
99-50 ratio	13.63	14.24	61.29	6.80	6.36	87.15	12.96	13.62	131.06
90-50 ratio	3.04	3.01	9.30	3.01	2.74	15.45	3.28	3.17	14.91
Mean-to-median ratio	1.67	1.78	4.97	1.38	1.41	7.71	1.68	1.79	8.15
50-30 ratio	1.69	1.59	4.24	1.98	1.55	4.41	1.93	1.66	5.48

▶ Table A16: Measures of inequality among US households, total and by skill group, 2016

		Skilled			Unskilled			All	
	E	I	W	E	I	W	E	I	W
Coefficient of variation	2.49	3.46	5.30	2.08	2.29	10.01	2.75	3.87	7.30
Varriance of logs	1.23	1.10	3.50	0.98	0.78	4.97	1.24	1.08	5.39
Gini index	0.60	0.61	0.84	0.51	0.46	0.85	0.61	0.60	0.88
Location of mean	75.00	79.00	83.00	63.00	66.00	82.00	72.00	77.00	85.00
99-50 ratio	17.84	22.12	81.12	6.17	6.56	74.23	15.72	16.09	146.47
90-50 ratio	3.14	3.36	10.35	2.74	2.47	11.27	3.39	3.22	14.09
Mean-to-median ratio	1.81	2.05	5.83	1.36	1.37	6.25	1.79	1.87	8.57
50-30 ratio	1.70	1.53	3.45	1.86	1.65	5.47	1.86	1.70	5.82

References

Acemoglu, Daron and David Autor, 2011. "Skills, Tasks and Technologies: Implications for Employment and Earnings". In O. Ashenfelter and D. Card, editors, *Handbook of Labor Economics, volume 4 of Handbook of Labor Economics*, chapter 12, 1043–1171. Elsevier.

Achdou, Yves, Jiequn Han, Jean-Michel Lasry, Pierre-Louis Lions, and Benjamin Moll, 2021. "Income and Wealth Distribution in Macroeconomics: A Continuous-Time Approach". *The Review of Economic Studies* 89 (1): 45–86.

Adermon, Adrian, Mikael Lindahl, and Daniel Waldenström, 2018. "Intergenerational Wealth Mobility and the Role of Inheritance: Evidence from Multiple Generations". *Economic Journal* 128 (612): 482–513.

Ahn, SeHyoun, Greg Kaplan, Benjamin Moll, Thomas Winberry, and Christian Wolf, 2018. "When Inequality Matters for Macro and Macro Matters for Inequality". *NBER Macroeconomics Annual* 32 (1): 1–75.

Aiyagari, S. Rao, 1994. "Uninsured Idiosyncratic Risk and Aggregate Saving". *The Quarterly Journal of Economics* 109 (3): 659–684.

Attanasio, Orazio P. and Hamish Low, 2004. "Estimating Euler Equations". *Review of Economic Dynamics* 7 (2): 406–435.

Aziz, Imran and Guido Matias Cortes, 2021. "Between-Group Inequality May Decline despite a Rising Skill Premium". IZA Discussion Papers 14701, Institute of Labor Economics (IZA).

Barth, Erling, Alex Bryson, James C. Davis, and Richard Freeman, 2016. "It's Where You Work: Increases in the Dispersion of Earnings across Establishments and Individuals in the United States". *Journal of Labor Economics* 34 (S2): 67–97.

Bartscher, Alina K, Moritz Kuhn, and Moritz Schularick, 2019. "The College Wealth Divide: Education and Inequality in America, 1956-2016". Discussion Papers 13864, C.E.P.R.

Blanden, Joanne, Paul Gregg, and Lindsey Macmillan, 2007. "Accounting for Intergenerational Income Persistence: Noncognitive Skills, Ability and Education". *Economic Journal* 117 (519): C43–C60.

Bloom, Nicholas, Fatih Guvenen, David Price, Jae Song, and Till von Wachter, 2018. "Firming Up Inequality". Working Papers 750, Federal Reserve Bank of Minneapolis.

Castañeda, Ana, Javier Diaz-Gimenez, and Jose-Victor Rios-Rull, 2003. "Accounting for the U.S. Earnings and Wealth Inequality". *Journal of Political Economy* 111 (4): 818–857.

Chancel, L., T. Piketty, E. Saez, and G. Zucman, 2022. "*World Inequality Report 2022*". World Inequality Lab.

Chang, Yongsung and Sun-Bin Kim, 2006. " From Individual to Aggregate Labor Supply: A Quantitative Analysis Based on a Heterogeneous Agent Macroeconomy". *International Economic Review* 47 (1): 1–27.

Cooper, Russell and Guozhong Zhu, 2016. "Household Finance over the Life-Cycle: What Does Education Contribute?". *Review of Economic Dynamics* 20: 63–89.

Daruich, Diego and Julian Kozlowski, 2020. "Explaining Intergenerational Mobility: The Role of Fertility and Family Transfers". *Review of Economic Dynamics* 36: 220–245.

De Nardi, Mariacristina, Giulio Fella, and Fang Yang, 2016. "Piketty's Book and Macro Models of Wealth Inequality". *Chicago Fed Letter*.

Duncan, Denvil and Klara Sabirianova Peter, 2012. "Unequal Inequalities: Do Progressive Taxes Reduce Income Inequality?". IZA Discussion Papers 6910, Institute of Labor Economics (IZA).

Ernst, Ekkehard, 2022. "The AI trilemma: Saving the planet without ruining our jobs". *Frontiers in Artificial Intelligence* 5.

Fernald, John, 2014. "A Quarterly, Utilization-Adjusted Series on Total Factor Productivity". Working Paper 2012-19, Federal Reserve Bank of San Francisco.

Ferrière, Axelle and Gaston Navarro, 2018. "The Heterogeneous Effects of Government Spending: It's All About Taxes". International Finance Discussion Paper 1237, Federal Reserve Board.

Furman, Jason and Peter Orszag, 2018. "Slower Productivity and Higher Inequality: Are They Related?". Working Paper Series WP18-4, Peterson Institute for International Economics.

Gerber, Claudia, Alexander Klemm, Li Liu, and Victor Mylonas, 2018. "Personal Income Tax Progressivity: Trends and Implications". IMF Working Papers 2018/246, International Monetary Fund.

Goldin, Claudia Dale and Lawrence F. Katz, 2009. *The Race Between Education and Technology*. Harvard University Press.

Goos, Maarten, Alan Manning, and Anna Salomons, 2014. "Explaining Job Polarization: Routine-Biased Technological Change and Offshoring". *American Economic Review* 104 (8): 2509–2526.

Gottschalk, Peter, 1997. "Inequality, Income Growth, and Mobility: The Basic Facts". *Journal of Economic Perspectives* 11 (2): 21–40.

Greenwood, Jeremy, Zvi Hercowitz, and Gregory W. Huffman, 1988. "Investment, Capacity Utilization, and the Real Business Cycle". *The American Economic Review* 402–417.

Heathcote, Jonathan, Kjetil Storesletten, and Giovanni L. Violante, 2010. "The Macroeconomic Implications of Rising Wage Inequality in the United States". *Journal of Political Economy* 118 (4): 681–722.

Heathcote, Jonathan, Kjetil Storesletten, and Giovanni L. Violante, 2017. "Optimal Tax Progressivity: An Analytical Framework". *The Quarterly Journal of Economics* 132 (4): 1693–1754.

Hong, Jay H., Byoung Hoon Seok, and Hye Mi You, 2019. "Wage Volatility and Changing Patterns of Labor Supply". *International Economic Review*.

Horowitz, Juliana, Ruth Igielnik, and Tanya Arditi, 2020. "Most Americans Say There Is Too Much Economic Inequality in the US, but Fewer Than Half Call It a Top priority". Technical report, PEW Research Centre.

Hubmer, Joachim, Per Krusell, and Anthony A. Smith Jr, 2020. "Sources of US Wealth Inequality: Past, Present, and Future". In *NBER Macroeconomics Annual 2020, volume 35*, NBER Chapters, 391–455. National Bureau of Economic Research.

Jones, Charles I., 2014. "Simple Models of Pareto Income and Wealth Inequality".

Kaymak, Barış and Markus Poschke, 2016. "The Evolution of Wealth Inequality over Half a Century: The Role of Taxes, Transfers and Technology". *Journal of Monetary Economics* 77: 1–25.

Keane, Michael P. and Kenneth I. Wolpin, 2001. "The Effect of Parental Transfers and Borrowing Constraints on Educational Attainment, journal=International Economic Review" 42 (4): 1051–1103.

Kopczuk, Wojciech and Joseph P. Lupton, 2007. "To Leave or Not to Leave: The Distribution of Bequest Motive". *Review of Economic Studies* 74 (1): 207–235.

Krusell, Per, Lee E Ohanian, José-Víctor Ríos-Rull, and Giovanni L. Violante, 2000. "Capital-Skill Complementarity and Inequality: A Macroeconomic Analysis". *Econometrica* 68 (5): 1029–1053.

Krusell, Per and Anthony A. Smith, 2015. "Is Piketty's Second Law of Capitalism Fundamental?". *Journal of Political Economy* 123 (4): 725–748.

Krusell, Per and Anthony A. Smith, Jr, 1998. "Income and Wealth Heterogeneity in the Macroeconomy". *Journal of Political Economy* 106 (5): 867–896.

Kuhn, Moritz and José-Victor Rios-Rull, 2016. "2013 Update on the US Earnings, Income, and Wealth Distributional Facts: A View from Macroeconomics". *Quarterly Review, Federal Reserve Bank of Minneapolis* 1–75.

Kuhn, Moritz, Moritz Schularick, and Ulrike Steins, 2017. "Income and Wealth Inequality in America, 1949-2016". CEPR Discussion Papers 12218, C.E.P.R. Discussion Papers.

Langot, François, Ekkehard Ernst, Rossana Merola, and Jhon Jair Gonzalez Pulgarin, 2023. "Intergenerational Educational and Earnings Mobility Trends in the United States since the 1960s". ILO Working Paper forthcoming.

Merola, Rossana, 2022. "Inclusive Growth in the Era of Automation and AI: How Can Taxation Help?". *Frontiers in Artificial Intelligence* 5.

Pfeffer, Fabian T., Matthew Gross, and Robert Schoeni, 2019. "The Demography of Rising Wealth Inequality"'. Technical report, The Inequality Lab.

Piketty, Thomas, 2014. *Capital in the Twenty-First Century*. Harvard University Press.

Piketty, Thomas and Emmanuel Saez, 2007. "How Progressive is the US Federal Tax system? A historical and international perspective". *Journal of Economic Perspectives* 21 (1): 3–24.

Piketty, Thomas and Gabriel Zucman, 2015. "Wealth and Inheritance in the Long Run". In *Handbook of income distribution*, volume 2, 1303–1368. Elsevier.

Prescott, Edward C., 2004. "Why do Americans Work so Much More than Europeans?". Technical report, National Bureau of Economic Research.

Solow, Robert, 1987. "We'd Better Watch Out". *New York Times Book Review* July 12: 36.

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