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The Evolution of Income Inequality in the United States, Its Consequences, and Some Policy Measures

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ABSTRACT

This paper discusses the key concepts and main stylized facts concerning household real income and income inequality in the United States in recent decades. It explains the widely used summary measures of income distribution, which reveal that income inequality in the US has been steadily rising. It explores the economic implications and social consequences of the evolution of household real income and income inequality and considers ongoing debates about policy measures to mitigate the adverse effects of elevated income inequality, such as universal basic income and job guarantees.

KEYWORDS: Household Real Income; Income Inequality; Macroeconomic and Social Effects of Inequality; Universal Basic Income; Job Guarantee

JEL CLASSIFICATIONS: D10; D31; D63; E02; E64

SECTION I: INTRODUCTION

In the United States, rich households have become richer, while lower-income households have not gained much since the 1970s (Horowitz, Igielnik, and Arditì 2020). Indeed, based on all widely used metrics of income distribution, it is unequivocal that income inequality has worsened. There are many reasons for this widening; the increase cannot and should not be attributed to one single factor. There are various debates in the literature on the causes of income inequality in the United States. Likewise, there are multiple and different proposals for addressing this inequality, two of which—namely a universal basic income and a job guarantee—are briefly discussed here. Though the primary objective of these proposals is not income inequality mitigation per se, these policies will have repercussions on labor markets, employment, and incomes, and are therefore worth serious consideration and critical assessment.

The paper is structured as follows. Section II describes the key stylized facts concerning the distribution of income in the United States in the past several decades. Section III presents four key summary measures of income inequality. Section IV briefly addresses the cause of rising income inequality. Section V points out the social, economic, and political consequences of the elevated and rising income inequality. It also discusses two proposals, namely universal basic income and job guarantee, that could be policy options to reduce income inequality. Section V concludes.

SECTION II: THE STYLIZED FACTS CONCERNING INCOME DISTRIBUTION

The income inequality discussed in the paper is that of pre-tax household real income, as reported by the US Census Bureau. It is based on data about the amount of money income received, outside of capital gains, by households from the following sources: earnings; unemployment compensation; workers' compensation; Social Security; supplemental security income; public assistance; veterans' payments; survivors' benefits; pension or retirement income; interest, dividends, rents, royalties, estates and trusts; educational assistance; alimony; child support; financial assistance from non-government sources; and other income. The

inequality does not reflect non-cash benefits, such as food stamps and Medicare. Income and earnings over time are adjusted for the cost of living using an appropriate consumer price index (CPI), namely the CPI-U-RS, which is an estimate of the CPI for all urban consumers, published by the Bureau of Labor Statistics (BLS).

A clear and distinct manner of illustrating the marked rise of income inequality is to compare the evolutions of the mean and median family real income over time, as shown in figure 1, below. Figure 1 shows that not only has family mean and median income risen over time, but the gap between mean and median incomes has widened both in absolute and relative terms. Mean real income has risen from \$41,000 in 1950 to \$145,000 in 2024 (measured in constant dollars). Meanwhile, median real income has risen from a bit more than \$35,000 in 1950 to almost \$106,000 in 2024. Comparing family median income as a share of family mean income reveals that it rose from 81.7 percent in 1950 to peak at 91.4 percent in 1958, but thereafter it has declined steadily, dropping to 73.3 percent in 2024, as shown in Figure 2.

Figure 1: Mean and Median Family Income, 1950-2024

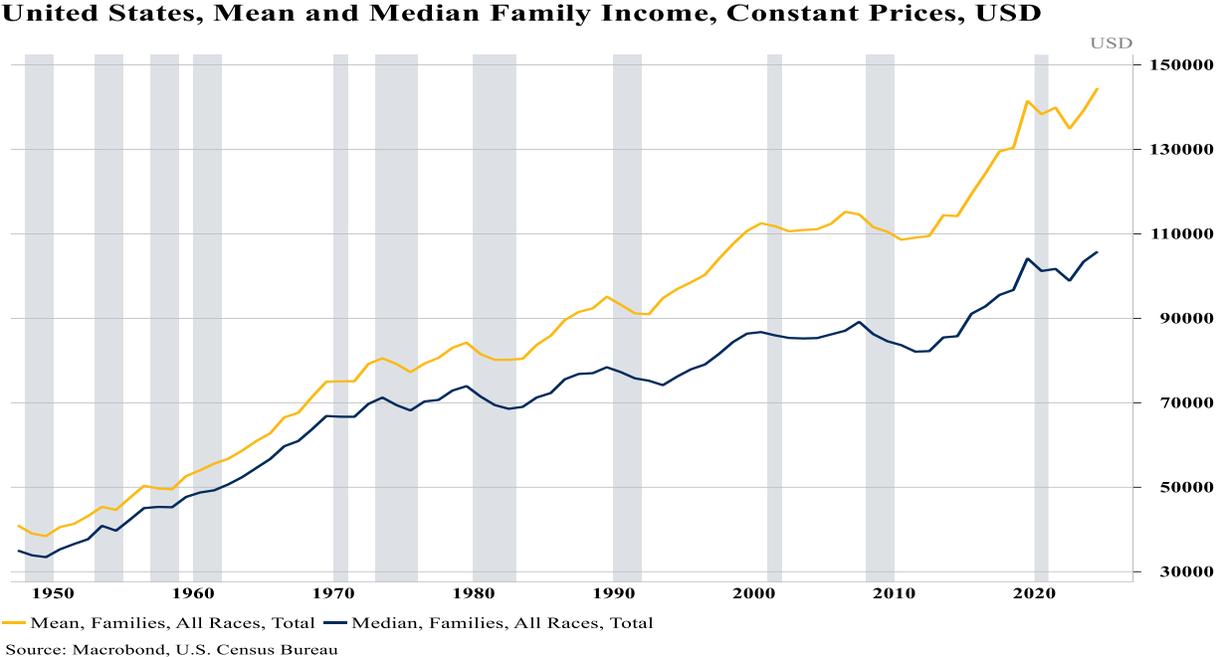


Figure 2: Median Family as a Share of Mean Family Income, 1950-2024

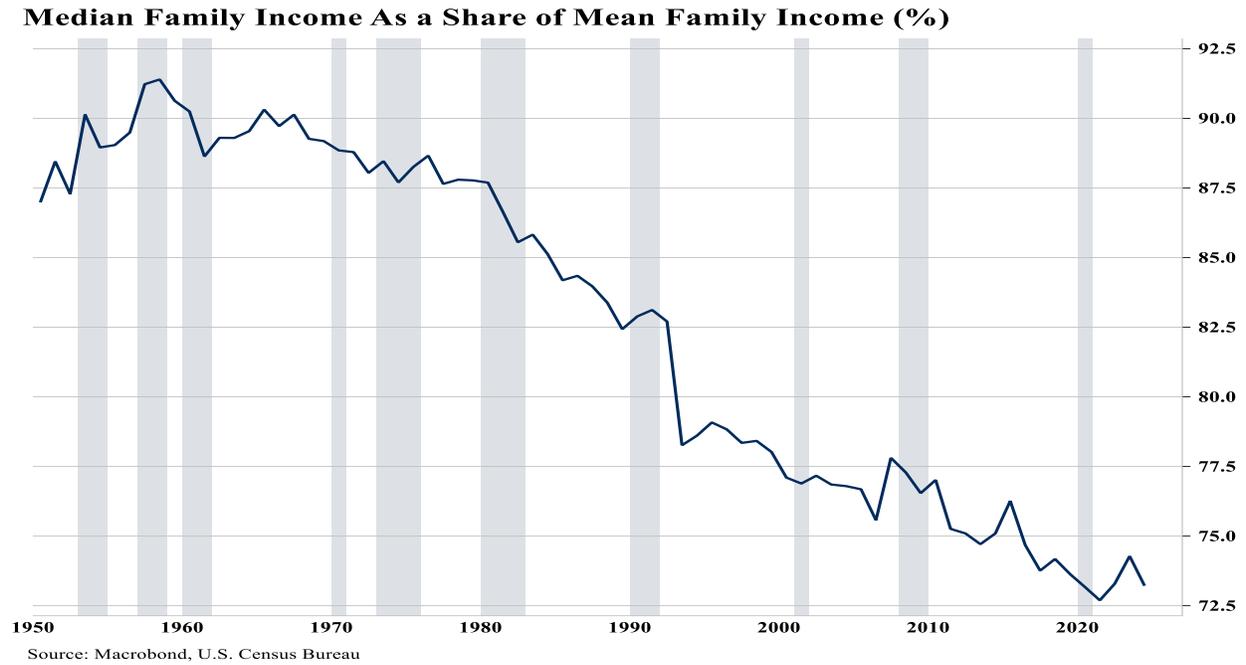


Table 1, below, displays the evolution of household median real income and household income of quintile groups at the beginning of each decade from 1970 to 2025. It also gives the share of household income by quintiles and two summary measures of income inequality. While median real income has risen during this period, the data reveal a notable rise in income inequality in the United States. The shares of income going to the lowest through the fourth income quintile groups have all declined steadily during this period. In contrast, the share of income received by the highest quintile group has increased markedly, from 43.4 percent in 1970 to 52.2 percent in 2024. Even more remarkable is the big jump in the share of income going to the top 5 percent, rising from 16.6 percent in 1970 to 23.1 percent in 2024. The two summary measures of income inequality given in table 1 (Gini index and mean log deviation) confirm the sharp rise in income inequality.

Table 1: Selected Measures of Household Income Distribution, 1970–2024

United States: Selected Measures of Household Income Dispersion, 1970-2024							
In 2024 C-CPI-U dollars							
	1970	1980	1990	2000	2010	2020	2024
Median household income	\$57,580	\$60,210	\$65,440	\$71,790	\$68,420	\$81,580	\$83,730
Mean household income of quintiles							
Lowest quintile	\$13,470	\$14,650	\$15,660	\$17,370	\$15,270	\$17,590	\$18,460
Second quintile	\$36,480	\$36,470	\$39,400	\$43,360	\$39,620	\$47,670	\$49,380
Third quintile	\$58,730	\$60,180	\$65,090	\$72,210	\$68,270	\$81,840	\$84,390
Fourth quintile	\$82,790	\$88,660	\$98,130	\$112,300	\$109,500	\$132,200	\$136,800
Highest quintile	\$146,600	\$158,100	\$190,400	\$243,300	\$235,200	\$305,200	\$316,100
Top 5%	\$225,000	\$236,200	\$303,200	\$431,600	\$398,800	\$536,800	\$560,000
Share of household income of quintile, %							
Lowest quintile	4.1	4.2	3.8	3.6	3.3	3.0	3.1
Second quintile	10.8	10.2	9.6	8.9	8.5	8.2	8.2
Third quintile	17.4	16.8	15.9	14.8	14.6	14.0	13.9
Fourth quintile	24.5	24.7	24.0	23.0	23.4	22.6	22.6
Highest quintile	43.3	44.1	46.6	49.8	50.3	52.2	52.2
Top 5%	16.6	16.5	18.5	22.1	21.3	23.0	23.1
Summary measures of income inequality							
Gini index of income inequality	0.390	0.408	0.428	0.462	0.470	0.488	0.488
Mean log deviation of income	0.370	0.375	0.402	0.490	0.574	0.617	0.606

Source: US Census Bureau

SECTION III: SUMMARY MEASURES OF INCOME INEQUALITY

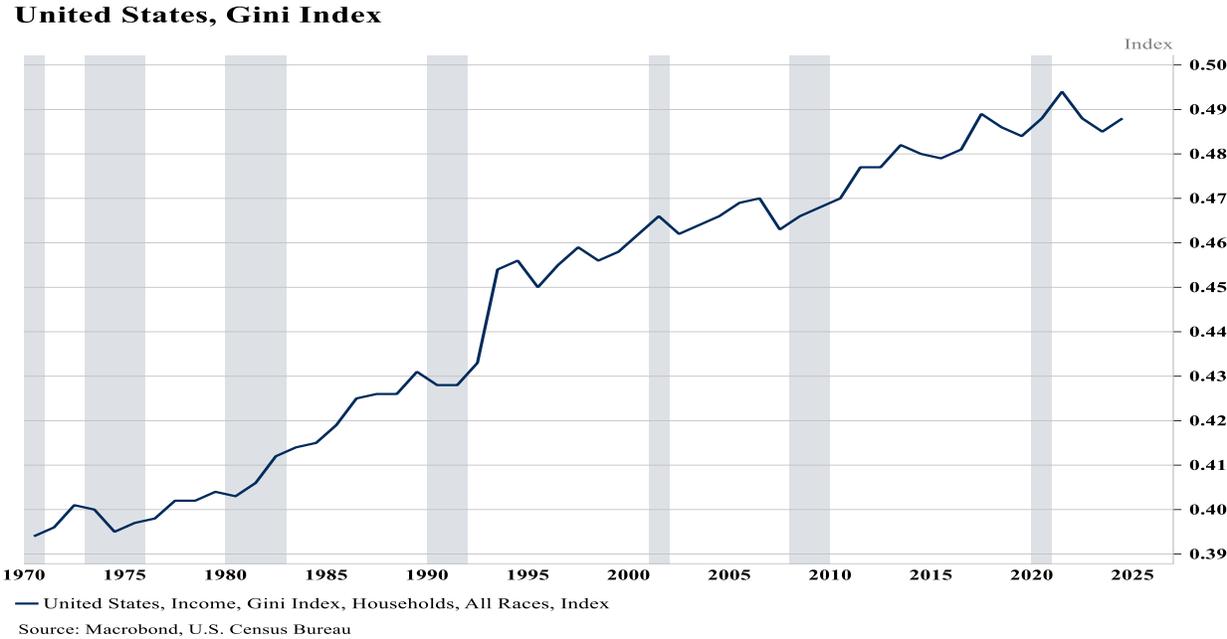
Summary measures are useful in understanding the evolution of income distribution. Atkinson (1983), Cowell (2011), and Sen (1992, 1997) cover in richly textured details the economics as well as the measurement of income equality, while Piketty’s (2014, 2015) research managed to elevate it to a topic *de jure* among the chattering class, albeit for a short-lived period.

The four key summary measures of income inequality that are discussed here are the Gini index of income inequality, the mean log deviation of income (MLD), the Theil index of income inequality, and the Atkinson index of income inequality. The inequality indices are explained below, while the appendix provides the formulas.

A Gini index of 0 expresses perfect equality, where everyone has the same income, while a Gini index of 1 expresses maximal inequality, where only one person has all the income. Another way of thinking is that the Gini index is half of the relative mean absolute difference of all pairs of

income for the population. It is convenient to view the Gini index in terms of the Lorenz curve, where the percentage of the population is represented on the horizontal axis and arranged from the poorest to the richest, while the percentage of income obtained by the bottom x percentage is shown on the vertical axis. Figure 3 shows inequality as measured by the Gini index, which has risen from 0.39 in 1970 to 0.49 in 2024.

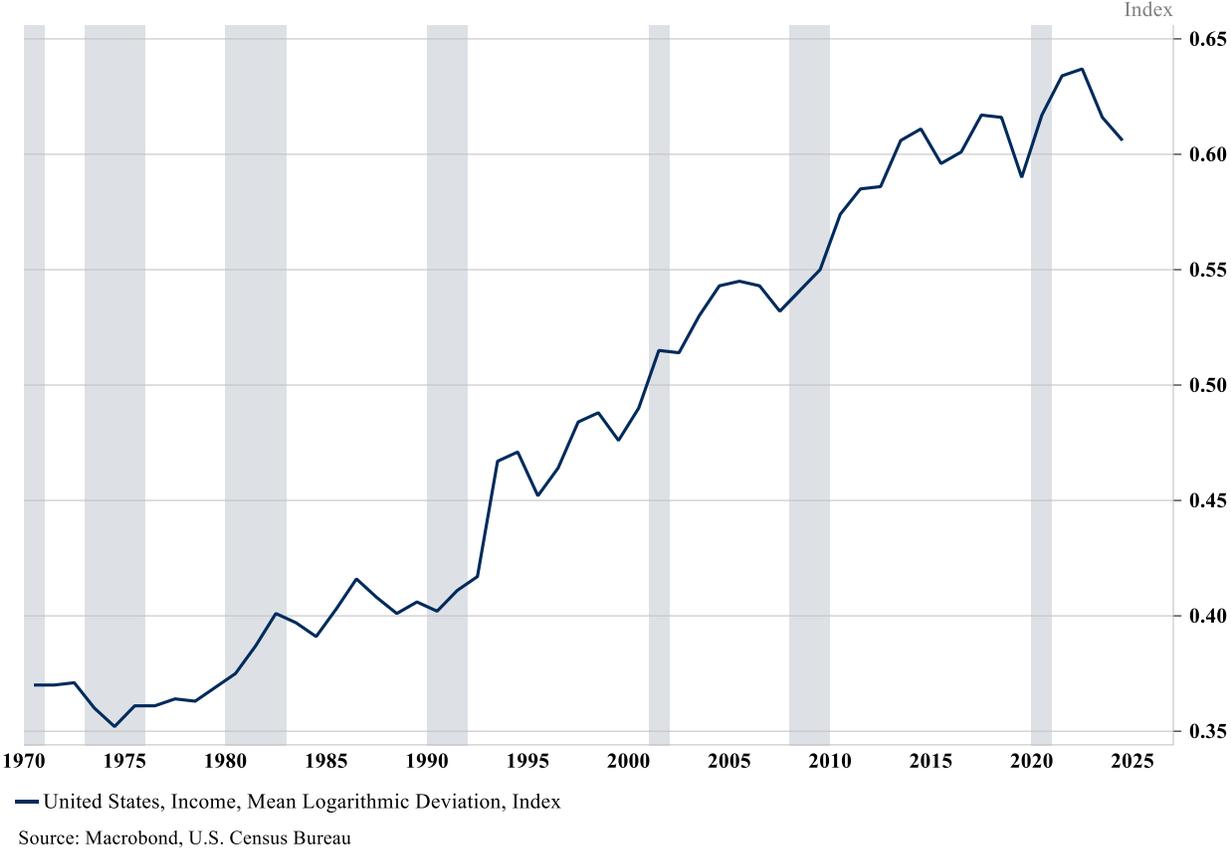
Figure 3: The Evolution of the Gini Index, 1970–2024



The MLD is another measure of income inequality. The MLD is 0 when everyone has the same income and takes a larger positive value as income becomes more unequal, particularly at the high end (Atkinson and Bourguignon 2000). Figure 4 displays inequality as measured by the MLD, which increased from 0.38 in 1970 to 0.61 in 2024.

Figure 4: The Evolution of Mean Logarithmic Deviation, 1970–2024

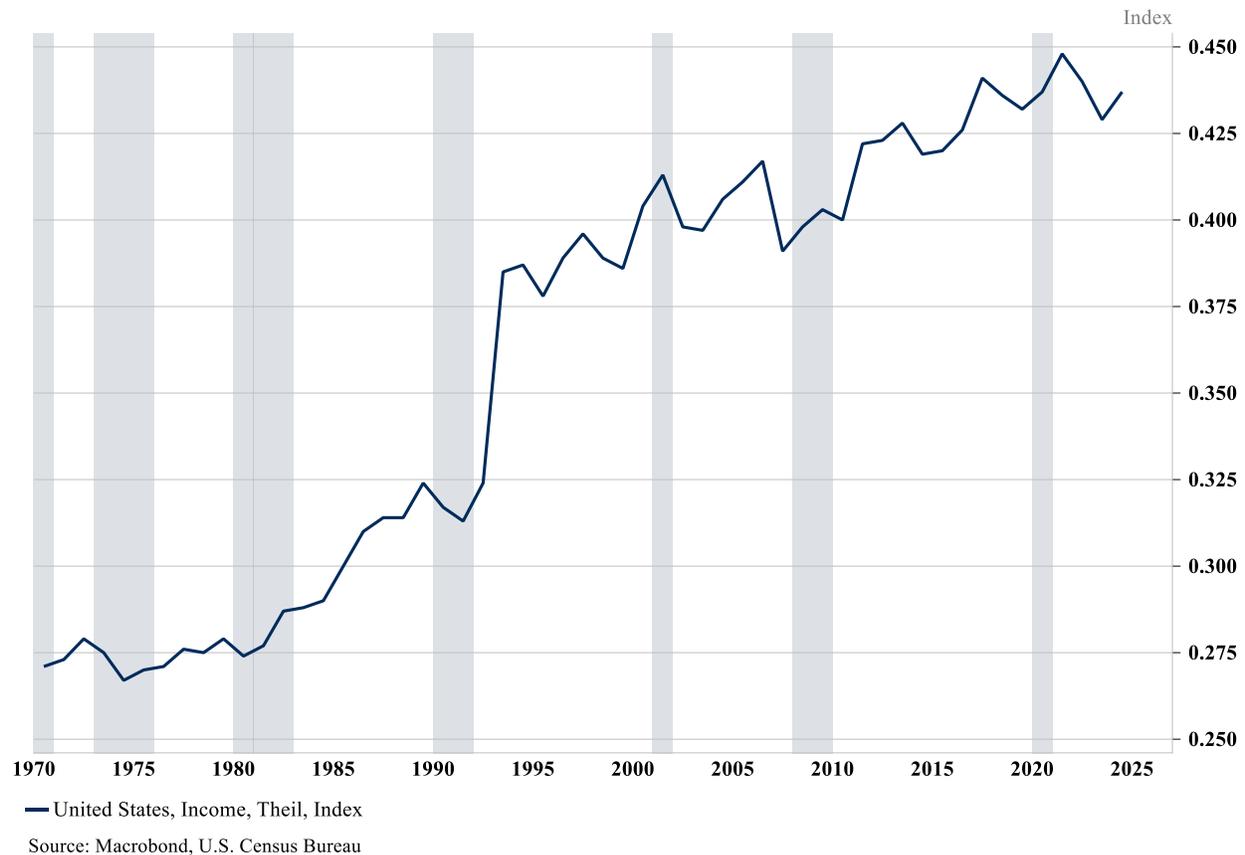
United States, Mean Logarithmic Deviation Index



The Theil (1967) index is another measure of income inequality, drawn from information theory. It is particularly useful for decomposing inequality into its components. If everyone has the same income, then the Theil index equals 0. However, if one person has all the income, then the Theil index gives the result $\ln(N)$, where N is the number of individuals and $\ln(.)$ is a natural logarithm. $\ln(N)$ represents maximal inequality. The Theil index is a measure of entropy loss relative to perfect equality. Figure 5 shows inequality as measured by the Theil index, which has increased from 0.37 in 1970 to 0.44 in 2024.

Figure 5: The Evolution of the Theil Index, 1970–2024

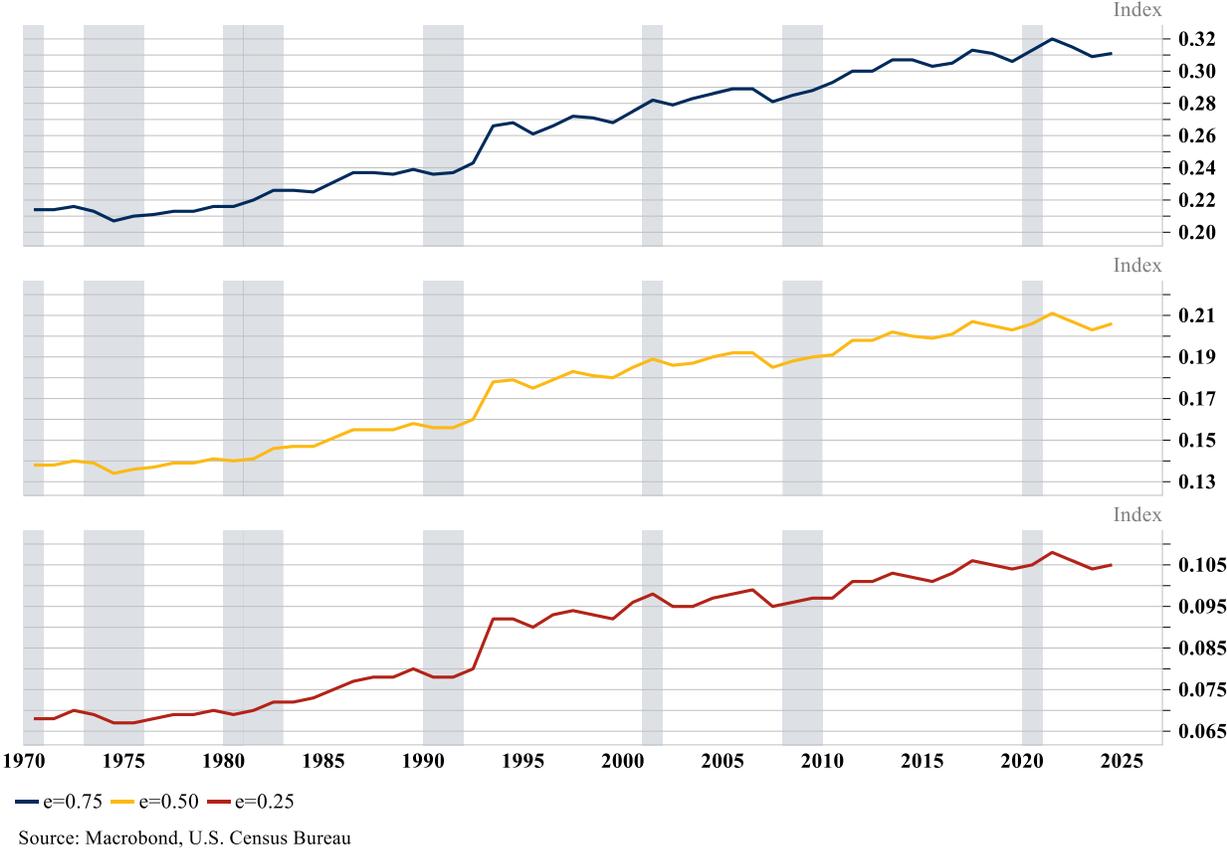
United States, Theil Index



The Atkinson index of inequality illuminates which end of the distribution contributed most to the observed income inequality (Atkinson 1970, 1983; Atkinson and Bourguignon 2000). A distinct advantage of the Atkinson index is that it converted into a *normative* measure by imposing a parameter, e , to weigh income. The e parameter reflects the evaluator’s inequality aversion, since it quantifies the social utility that is obtained from a complete redistribution of income. For $e = 0$ there is no aversion to inequality, while $e = \infty$ stands for infinite aversion to inequality. Figure 6 presents inequality as measured by the Atkinson index of inequality with three different e parameters: $e = 0.25$, $e = 0.50$, and $e = 0.75$. These measures of the previously mentioned parameters have risen from 0.07, 0.14, and 0.21, respectively, in 1970 to 0.11, 0.21, and 0.31, respectively, in 2024.

Figure 6: The Evolution of the Atkinson Index, 1970–2024

United States, Atkinson Index



SECTION IV: THE CAUSES OF RISING INCOME INEQUALITY

There is no single cause that explains rising income inequality in the United States; rather there are multiple reasons for its rise, with different scholars emphasizing different causes and their relative importance. However, broadly, several factors are associated with the rise of income inequality and thus may be attributed as its causes. Some of the factors are briefly discussed below. Neckerman and Torche (2007) provide a comprehensive review of both the causes and consequences of income and wealth inequality in the United States.

The decline of manufacturing is often regarded as a crucial factor that has led to rising income inequality (Novta and Pugacheva 2019). The share of value added in manufacturing has fallen

steadily since the start of the 21st century, from 15 percent of nominal GDP (nGDP) in 2000 to 10 percent of nGDP in 2024 (see figure 7). Manufacturing employment has also declined markedly, falling from slightly more than 24 percent of total employment in 1970 to merely 8 percent in 2024 (figure 8). The unionization rate, which is a measure of the share of the labor force that is unionized, has fallen from 18 percent in 1985 to merely 10 percent in 2024 (figure 9). The fall in unionization has lowered the bargaining power of the working class.

Figure 7: The Decline in the Share of Manufacturing Value Added in US nominal GDP, 2000-2024

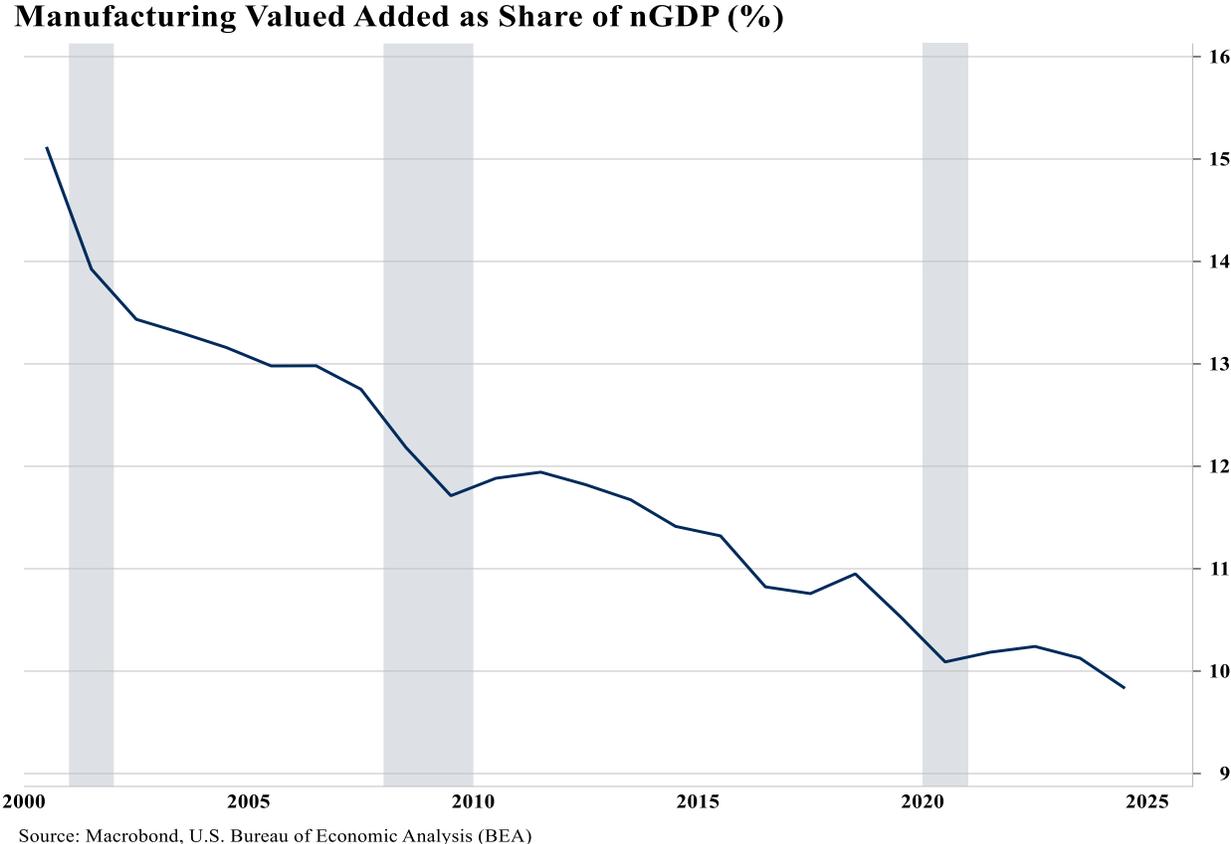


Figure 8: The Drop in Manufacturing Employment as a Share of Total Employment, 1970-2024

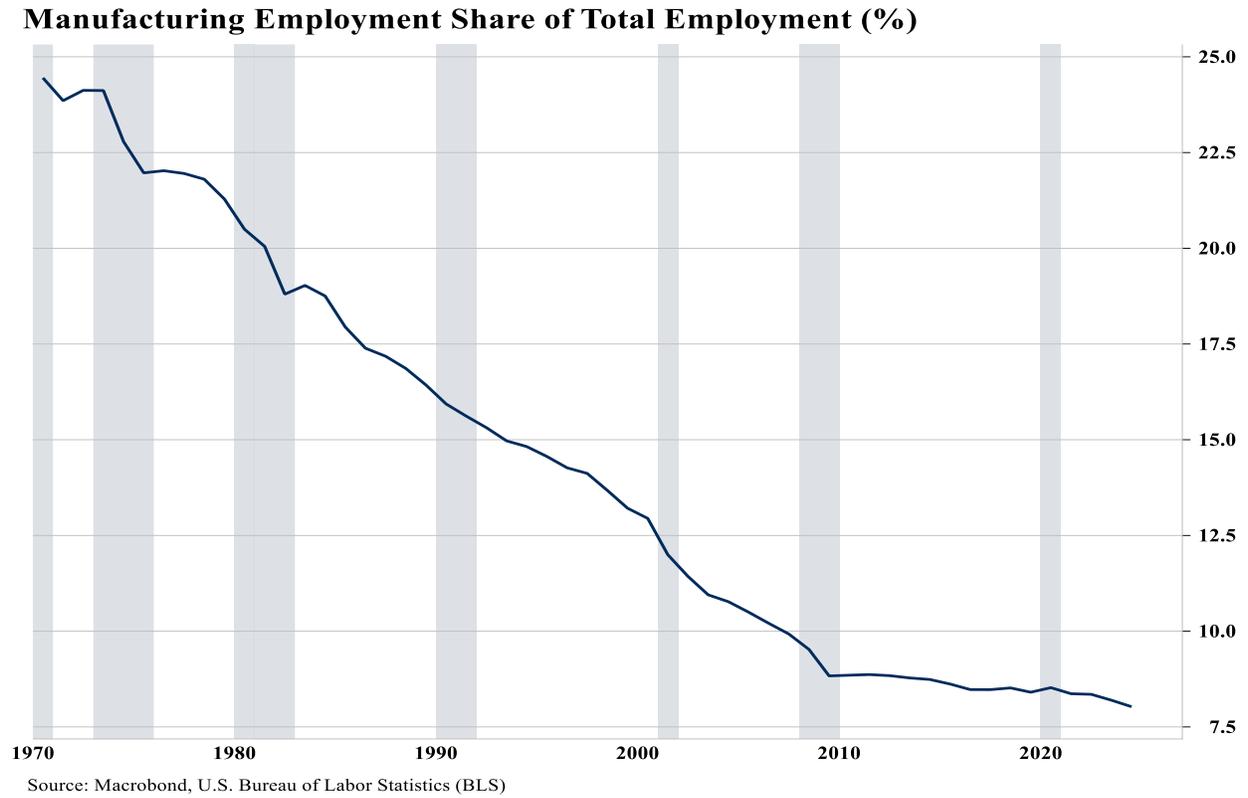
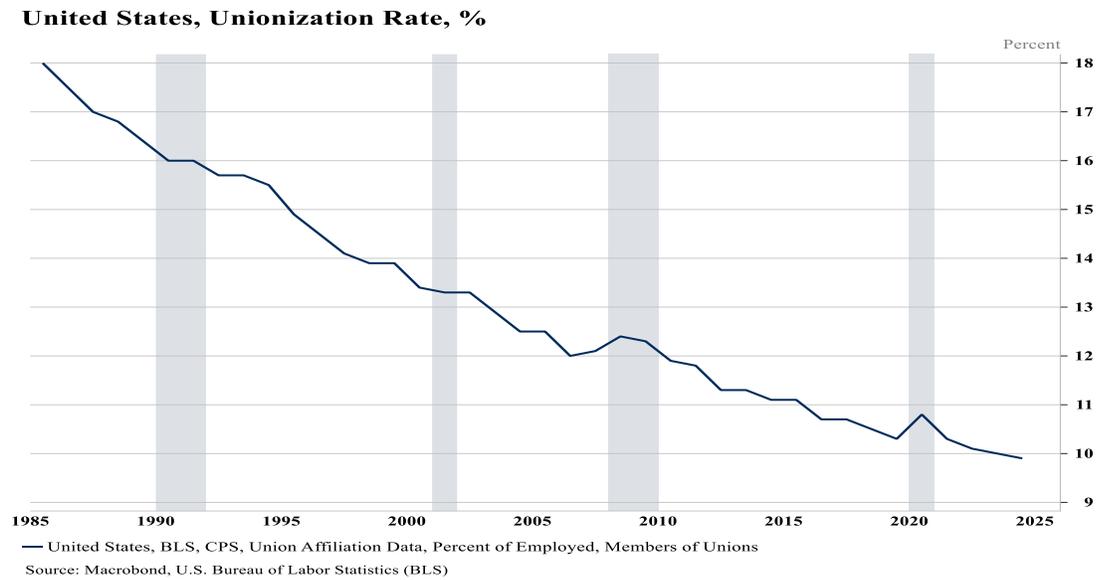


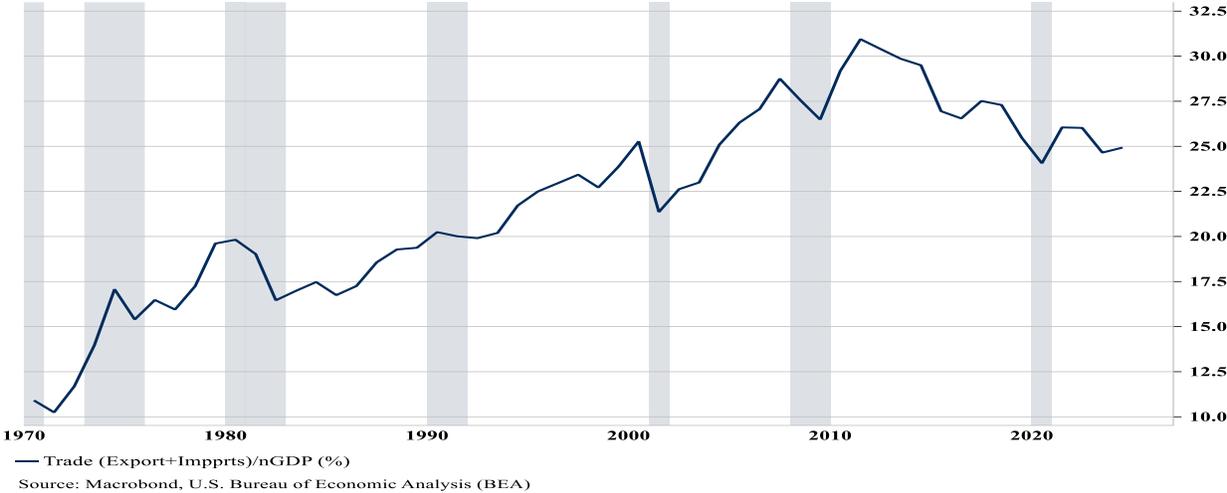
Figure 9: The Unionization Rate Has Plummeted, 1985-2024



“Globalization” is another factor that is often held responsible for the rise of income inequality (Keller and Olney 2021). However, this notion is fuzzy. Globalization is associated with the rise of international trade, foreign direct investment (FDI), “footloose” multinational enterprises, and international migrations. International trade (exports and imports) in the US has risen from almost 9 percent as a share of nGDP in 1980 to 25 percent as a share of nGDP in 2024 (figure 10).

Figure 10: The Rise in the Share of International Trade in the United States, 1970-2024

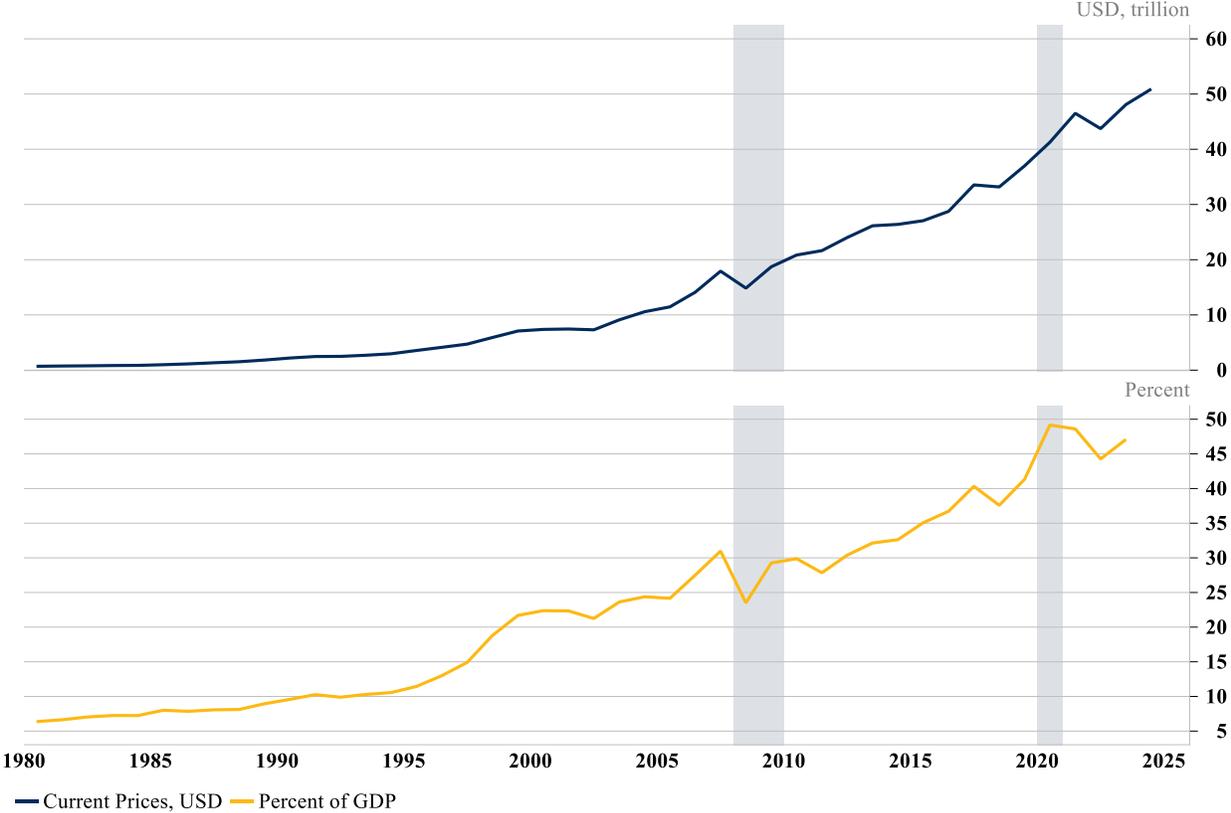
United States, Nominal Exports & Nominal Imports As a Share of Nominal GDP, %



The global stock of FDI has increased from merely \$0.7 trillion (current dollars) in 1980, which amounted to 6.3 percent of global nGDP, to \$48.1 trillion (current dollars) in 2023, which amounted to 47.1 percent of global nGDP (figure 11). During the same period, United States’s inward and outward FDI increased markedly, as shown in figures 12 and 13. The United States’s inward FDI has risen from less \$0.1 trillion in 1980 (2.9 percent of nGDP) to \$12.8 trillion (46.9 percent of nGDP) in 2023, while its outward FDI increased from 0.2 trillion (7.5 percent of nGDP) in 1980 to \$9.2 trillion in 2023 (34.5 percent of nGDP). The remarkable rise in the FDI is a testimony to the globalization of production and supply chain and the “footloose” nature of multinational enterprises in their quest for maximizing shareholder values, higher profits, revenue growth, lower costs, access to markets, and greater market share.

Figure 11: The Stock of Global Foreign Direct Investment (FDI) has Risen Sharply. 1980-2024

World, Foreign Direct Investment (FDI), Stock



Source: Macrobond, United Nations Trade & Development

Figure 12: The Rise of Inward FDI in the United States, 1980-2024

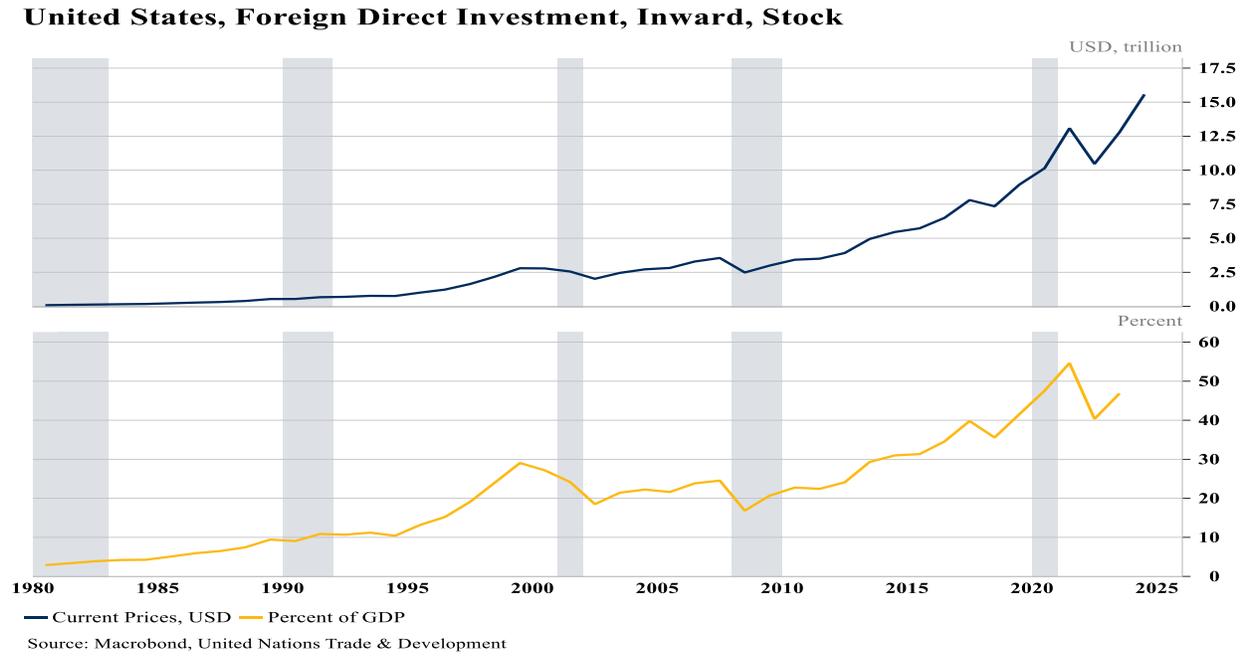
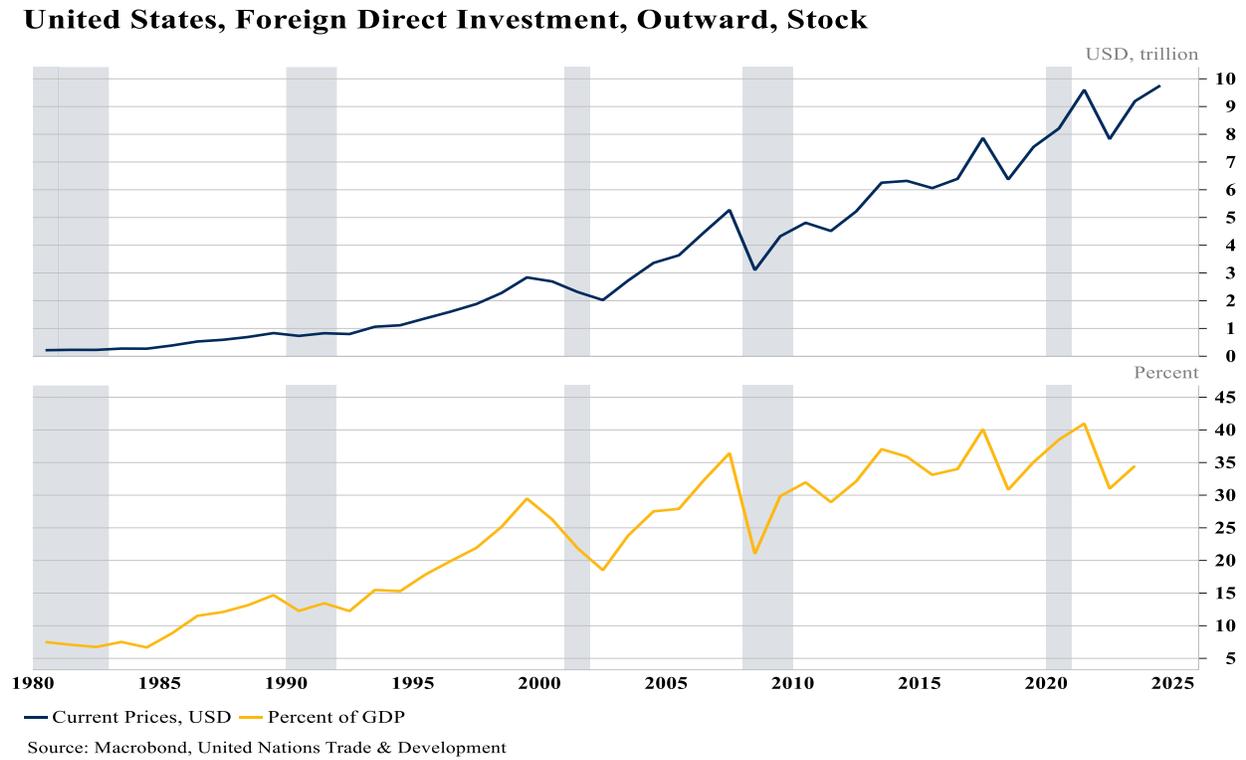


Figure 13: The Increase in the United States’s Outward FDI, 1980-2024



Other factors, such as the rise of China, cutbacks on social welfare, political changes, assortative mating, skill-biased technological change, and government policies on taxation (Nallareddy, Rouen, and Serrato 2022) have also contributed to increasing income inequality. Moreover, rent-seeking behavior on the part of capital owners has also led to this rise.

SECTION V: THE CONSEQUENCES OF RISING INCOME INEQUALITY AND SOME POLICY OPTIONS

Rising income inequality affects the US economy and society in many ways. It undermines democracy, electoral systems, and representation at every level of government (Rau and Stokes 2024). It can create social and political discontent and resentment (Justino 2025), providing a basis for right-wing populism. It can foster protectionism, xenophobia, and anti-immigration bias, as well as racial and ethnic divisions and mistrust (Riaz 2024). It can stifle economic growth and well-being and could lead to social unrest and political instability (Topuz 2022). The rise of Donald Trump may well be attributed to his ability to capitalize on the resentments and frustrations of a vast number of US citizens, particularly those who have been left behind amid globalization and the economic changes of the past decades.

While income inequality is part and parcel of capitalist monetary economies, there is nothing *inevitable* about elevated or rising income inequality. Different policies can be implemented to potentially reduce inequality or, at the very least, prevent its further rise, even though *any* policy measures will have uncertainty and unintended consequences associated with them. Policies to promote economic growth and employment in the private sector could check or lower income inequality. Changes in tax rates, tax structures, and the taxation regime, coupled with various incentives and disincentives, can have a profound effect on income inequality. Investment in education at primary, secondary, and tertiary levels could curb income inequality. Policies to support skill formation and human capital development could also reduce income gaps. Both fiscal and monetary policy can affect income inequality in many ways and appropriate public policies—including distributive and redistributive policies—can be effective.

Specifically, there are two policy proposals that are worthy of serious consideration by progressive people and movements in the United States, even though the *primary* objective of these proposals is not the mitigation of income inequality per se. These are the universal basic income program and the job guarantee or full employment program.

The basic income program guarantees all citizens a minimum income through a periodic, unconditional cash transfer with no work requirement. While no country has a full-fledged basic income program, the notion of basic income has a long and distinguished pedigree; Thomas Paine (1797) was an early advocate of universal basic income. Even Milton Friedman (1968), not particularly famous for his progressive views, was in favor of a negative income tax, which can be considered as a form of universal basic income. In recent years, Van Parijs (2004) and Standing (2017) have championed a universal basic income. Ghatak and Maniquet (2019) provide a comprehensive overview and maintain that universal basic income can be useful in combating poverty but are lukewarm regarding its scope as a social justice and income redistribution tool.

A job guarantee program is funded by a government with monetary sovereignty, providing voluntary employment opportunities to all and any citizens who are able, ready, and willing to work for a minimum wage. Its main feature is that it is a permanent, but voluntary, program that acts as a safety net and a transitional employment program for those who have been rendered unemployed by the private sector. Jobs provided by the program support public works and investment in public goods and services. Because any citizen can obtain a job under the program, it can be assumed that few would accept a private-sector wage lower than that offered by the job guarantee program, creating a *de facto* floor on nominal wages. The main objective of job guarantee program is to ensure “full employment,” or something as very close to full employment as is practically feasible under a capitalist economy. The case for a job guarantee has a long history within the institutional economics tradition, as evident in Gordon (1997). However, in recent decades Mitchell and Mosler (2002) have articulated the case for a job guarantee program as a feasible countercyclical and full employment economic policy for those countries that are the monopoly issuer of fiat currency. More recently, Tcherneva (2018) has persuasively argued that a job guarantee is not only an effective countercyclical program that

supports income and employment but is also socially transformative and that it enhances the common good. Full employment—by providing earnings to those who are willing to work and by setting a *de facto* minimum wage (floor) at above the sustainable living wage—can reduce income inequality and improve social well-being.

There are debates among scholars and activists about the relative merits of these programs. However, no consensus has emerged about which program is the most suitable for the task of narrowing the income distribution gap. Hence, further debates and research seem warranted. There is ample scope to work out the details of such programs that are appropriate to specifics of a particular community. However, the decision to address income inequality is a political one.

SECTION VI: CONCLUSION

This paper has examined the evolution of household income inequality in the United States. The study presents empirical evidence across four major measurement frameworks—the Gini index, mean log deviation, Theil index, and Atkinson index—all of which documented a marked deterioration in income distribution in the United States since the 1970s.

The paper also showed that the causes of rising inequality are multifaceted and interconnected. The decline of manufacturing, coupled with falling unionization rates, has eroded the economic foundation of middle-class prosperity. Globalization, manifested through expanded international trade and foreign direct investment, has created winners and losers in the domestic economy. Additional factors, including skill-biased technological change, shifts in tax policy, rent-seeking behavior, and cutbacks in social welfare programs, have compounded these structural transformations. The paper also examines the consequences of rising inequality, including threats to democratic institutions, social discontent, and political polarization. Undoubtedly the class, ethnic, and gender dimensions of income distribution, poverty and destitution are also important but these topics are beyond the scope of the current paper.

The paper has highlighted two policy interventions; namely universal basic income and job guarantee programs. While both proposals have the potential to combat rising inequality, they also pose implementation challenges and may entail unintended and unforeseen consequences. Further research and experiments are required to understand the outcomes of these two policy proposals that progressive economists have recommended.

REFERENCES

- Atkinson, A. B. 1970. "On the Measurement of Inequality." *Journal of Economic Theory* 2(3): 244–63. [https://doi.org/10.1016/0022-0531\(70\)90039-6](https://doi.org/10.1016/0022-0531(70)90039-6)
- . 1983. *The Economics of Inequality*. Oxford: Oxford University Press.
- Atkinson, A. B., and F. Bourguignon. 2000. "Introduction: Income distribution and economics." In Atkinson and Bourguignon (eds.), *Handbook of Income Distribution*, vol. I. Amsterdam: Elsevier. [https://doi.org/10.1016/S1574-0056\(00\)80003-2](https://doi.org/10.1016/S1574-0056(00)80003-2).
- Cowell, F. 2011. *Measuring Inequality*. Oxford: Oxford University Press.
- Friedman, M. 1968. "The Case for the Negative Income Tax: A View from the Right." In J. H. Bunzel (ed.), *Issues of American Public Policy*. Englewood Cliffs, NJ: Prentice-Hall.
- Ghatak, M., and F. Maniquet. 2019. "Universal Basic Income: Some Theoretical Aspects." *Annual Review of Economics* 11(1): 895–928. <https://doi.org/10.1146/annurev-economics-080218-030220>
- Gordon, W. 1997. "Job Assurance—The Job Guarantee Revisited." *Journal of Economic Issues* 31(3): 826–34. <https://doi.org/10.1080/00213624.1997.11505968>
- Horowitz, J., R. Igielnik, and T. Ardit. 2020. "Most Americans Say There Is Too Much Economic Inequality in the U.S., but Fewer Than Half Call It a Top Priority." Pew Research Center Report. Washington, DC: Pew Research Center. https://www.pewresearch.org/wp-content/uploads/sites/20/2020/01/PSDT_01.09.20_economic-inequailty_FULL.pdf
- Justino, P. 2025. "Revisiting the Links between Economic Inequality and Political Violence: The Role of Social Mobilization." *World Development* 185: 106820. <https://doi.org/10.1016/j.worlddev.2024.106820>
- Keller, W., and W. W. Olney. 2021. "Globalization and Executive Compensation." *Journal of International Economics* 129: 103408. <https://doi.org/10.1016/j.jinteco.2020.103408>
- Nallareddy, S., E. Rouen, and J. C. Suárez Serrato. 2022. "Do Corporate Tax Cuts Increase Income Inequality?" *Tax Policy and the Economy* 36(1): 35–91. <https://www.journals.uchicago.edu/doi/full/10.1086/718950>
- Neckerman, K. M., and F. Torche. 2007. "Inequality: Causes and Consequences." *Annual Review of Sociology* 33(1): 335–57. <https://doi.org/10.1146/annurev.soc.33.040406.131755>

- Novta, N., and E. Pugacheva. 2019. “Manufacturing Jobs and Inequality: Why is the U.S. Experience Different?” *IMF Working Paper* No. 19/191. Washington, DC: International Monetary Fund. <https://ssrn.com/abstract=3471382>.
- Mitchell, W. F., and W. B. Mosler. 2002. “Fiscal Policy and the Job Guarantee.” *Australian Journal of Labour Economics* 5(2): 243–59.
http://www.collectedworksofwarrenmosler.com/research-reports/PDF_Fiscal%20policy%20and%20the%20job%20guarantee.pdf
- Paine, Thomas. 1797. *Agrarian Justice*. Online version, available at:
<https://triarisproject.com/wp-content/uploads/2022/04/Paine1795.pdf>
- Piketty, T. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press.
- . 2015. *The Economics of Inequality*. Cambridge, MA: Harvard University Press.
- Riaz, S. 2024. “Does Inequality Foster Xenophobia? Evidence from the German Refugee Crisis.” *Journal of Ethnic and Migration Studies* 50(2): 359–78
<https://doi.org/10.1080/1369183X.2023.2259108>
- Rau, E. G., and S. Stokes. 2024. “Income Inequality and the Erosion of Democracy in the Twenty-first Century.” *Proceedings of the National Academy of Sciences* 122(1): e2422543121. <https://doi.org/10.1073/pnas.2422543121>
- Sen, A. 1992. *Inequality Reexamined*. Oxford: Oxford University Press.
- . 1997. *On Economic Inequality*. Oxford: Oxford University Press.
- Standing, G. 2017. *Basic Income: And How We Can Make It Happen*. London: Penguin.
- Tcherneva, P. 2018. “The Job Guarantee: Design, Jobs, and Implementation.” Levy Institute Working Paper No 902. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College. https://www.levyinstitute.org/pubs/wp_902.pdf
- Theil, H. 1967. *Economics and Information Theory*. Chicago: Rand McNally and Company.
- Topuz, S. G. 2022. “The Relationship Between Income Inequality and Economic Growth: Are Transmission Channels Effective?” *Social Indicator Research* 62(3):1177–1231.
<https://doi.org/10.1007/s11205-022-02882-0>
- Van Parijs, P. 2004. “Basic Income: A Simple and Powerful Idea for the Twenty-First Century.” *Politics and Society* 32(1): 7–39. <https://doi.org/10.1177/0032329203261095>

APPENDIX: DEFINITIONS OF SUMMARY MEASURES OF INCOME INEQUALITY

Let y_i be the income of person i , and there are n persons; the average income is \bar{y} .

The Gini Index

The Gini index is defined as follows:

$$G = \frac{\sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|}{2n^2 \bar{y}} = \frac{\sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|}{2n \sum_{i=1}^n y_i}$$

The Mean Log Deviation (MLD)

The mean log deviation (MLD) of income is defined as follows:

$$MLD = \frac{1}{n} \sum_{i=1}^n LN\left(\frac{\bar{y}}{y_i}\right)$$

The Theil Index

The Theil index of income inequality is defined as follows:

$$T = \frac{1}{n} \sum_{i=1}^n \frac{y_i}{\bar{y}} LN\left(\frac{y_i}{\bar{y}}\right)$$

The Atkinson Index

The Atkinson index of income inequality is defined as follows:

$$A_e = \begin{cases} 1 - \frac{1}{\bar{y}} \left(\frac{1}{n} \sum_{i=1}^n y_i^{1-e} \right)^{\frac{1}{(1-e)}} & \text{for } 0 \leq e \neq 1 \\ 1 - \frac{1}{\bar{y}} (\prod_{i=1}^n y_i)^{\frac{1}{n}} & \text{for } e = 1 \end{cases}$$

Here e is the parameter representing the aversion to inequality.