Chapter 8

Inequality, Savings, and Investments

8.1 National Accounting

Brief Recap of National Accounts Identities

Closed Economy:

$$Y = C + I \rightarrow S^p = Y - C = I$$

Add the public sector (G):

$$Y = C + I + G \rightarrow Y - C - G = I \rightarrow (Y - T - C) + (T - G) = I \rightarrow \mathbf{S^p} + \mathbf{S^g} = \mathbf{I}$$

$$\mathbf{S^p} + \mathbf{S^g} = \mathbf{I}$$

consider an Open Economy:

$$\mathbf{S^p} = \mathbf{I} - \mathbf{S^g} + \mathbf{NX}$$

where NX = net exports = exports(X) − imports(M)

Intuition & Extension

in an open economy

$$\mathbf{S^p} = \mathbf{I} - S^g + \mathbf{NX}$$

- $\mathbf{S^p} > \mathbf{I} \iff$ low private consumption (given production Y) $\iff$ possible to export production $\iff NX = X - M > 0$
- $\mathbf{NX} < 0 \iff M > X \iff$ need to borrow from abroad to pay for (net) imports $\iff$ possible to use this debt (foreig savings) to invest $I > S^p$

Minor adjustment to use national income (vs Y = GDP)

$$\mathbf{S^p} = \mathbf{I\text{-}S^g{+}F}$$

where $F = NX + W$ and W is net income from abroad

8.1.1 Inequality and Macro Outcomes

- According to Say's Law ($S = I$) →equilibrium condition in macro models
  - The supply side $Y = F(L, K, A)$ determines GDP
- It follows that inequality has no/positive effects on GDP

- Market inequality provides agents with the right (price) incentives to take sound economic decisions
- Inequality expected to increase S, and therefore I
  - $S^{rich} > S^{poor}$
  - *"A first justification for the claim that inequality is necessary for growth focuses on the role of savings and investment in promoting growth, and is based on the observation that those at the top save, while those at the bottom typically spend all of their earnings. (...). The only way to generate savings required for long-term growth is thus to ensure sufficient income for the rich"*. (Stiglitz, 2016)

8.2 The Saving Glut of the Rich and the Rise in Household Debt - (Mian et al. 2020)

Shares of national income across income distribution

Figure 1: Top 1% After-tax Shares of National Income

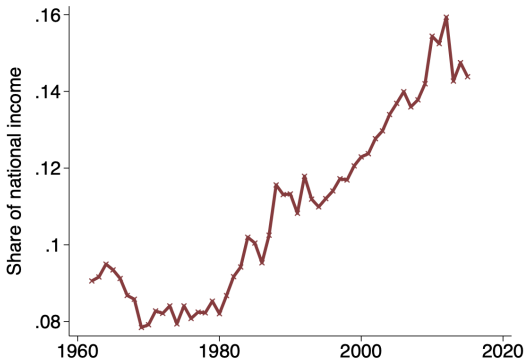
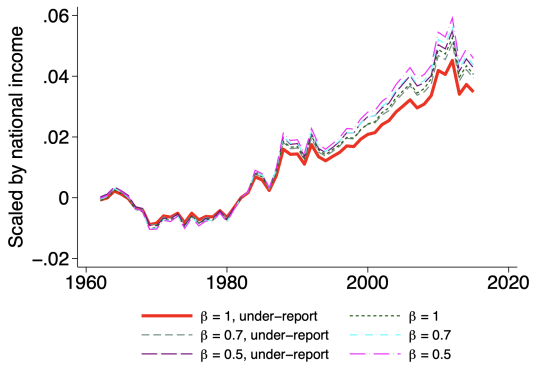


Figure 8.1: the after-tax income share of the top 1% of the income distribution increased by 3.4 percentage points from 1980 to 1988, by 5.5 percentage points by 2005, and by 7.7 percentage points by 2012

The Saving Glut of the Rich

$$S^P = \mathbf{S^P_{top\ \%}} + S^p_{90\%-99\%} + S^p_{bottom90\%}$$

Figure 3: Saving Glut of the Rich



The saving glut of the rich is defined to be the after-tax income of the top 1% of the income distribution minus personal consumption of the top 1% of the income distribution, scaled by national income. All series are relative to 1982. Different series reflect different assumptions on the evolution of the consumption to income ratio of the top 1%. $\beta = 1$ is a constant consumption to income ratio, and lower levels of β reflect a steeper decline in the consumption to income ratio based on income. Under-report refers to the fact that the baseline consumption share is inflated by 50% to account for under-reporting of consumption in the PSID. The solid red line is the baseline specification used going forward.

The figure plots the saving glut of the rich under the various assumptions on the evolution of consumption of the top 1% .

As the figure shows, the rise in the saving glut of the rich is large under any of the assumptions.

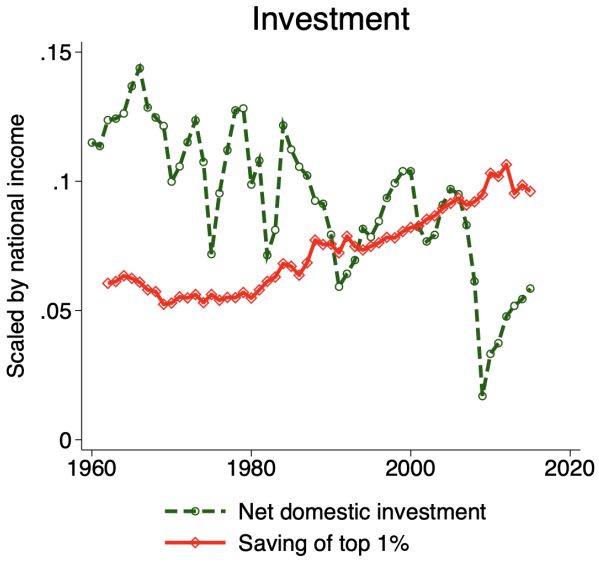
Absorption of the Saving Glut of the Rich

Investment:

$$S^p = \mathbf{S^p_{top\ \%}} + S^p_{90\%-99\%} + S^p_{bottom90\%} = \mathbf{I} - S^g + NX + W$$

The saving glut of the rich could have financed net domestic investment or it could have been invested in other countries(F)..

If neither of these happened, then a rise in the saving glut of the rich must have increased net borrowing by other households or by the government (S^g)



The saving of the top 1% is defined to be the after-tax income of the top 1% of the income distribution minus personal consumption of the top 1% of the income distribution, scaled by national income. Net domestic investment comes from the national accounts, and includes both government and private investment.

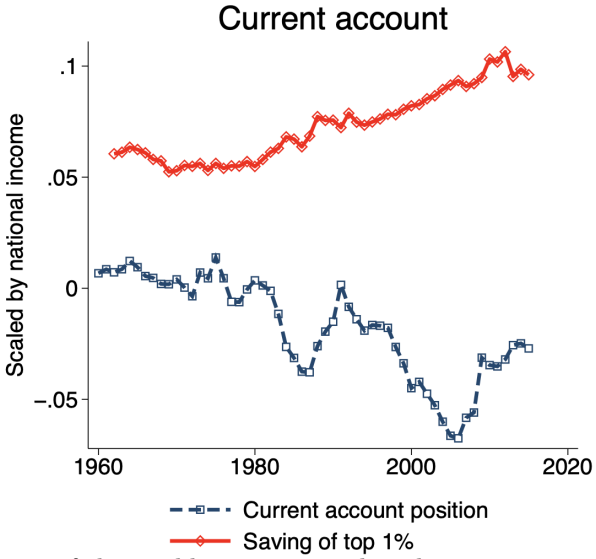
Net domestic investment moved in the opposite direction.

As the saving glut of the rich increased, net domestic investment fell. In fact, the pattern is so strong that after the Great Recession, the rich were saving a higher percentage of national income than total net domestic investment.

Current Account:

$$S^p = \mathbf{S^p_{top\ \%}} + S^p_{90\%-99\%} + S^p_{bottom90\%} = I - S^g + \mathbf{NX+W}$$

The current account position of the United States with the rest of the world also moved in the opposite direction.



The United States borrowed more from the rest of the world over time rather than investing more in it → this pattern has been called the **global saving glut**

Global Saving Glut: idea that there has been an influx of foreign savings that have been transformed into borrowing by governments, firms, and households in many advanced economies.

Compare the global saving glut and the saving glut of the rich.

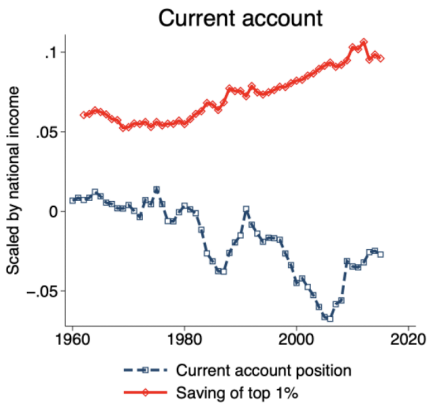
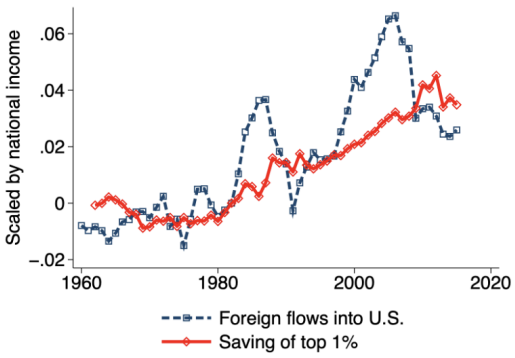


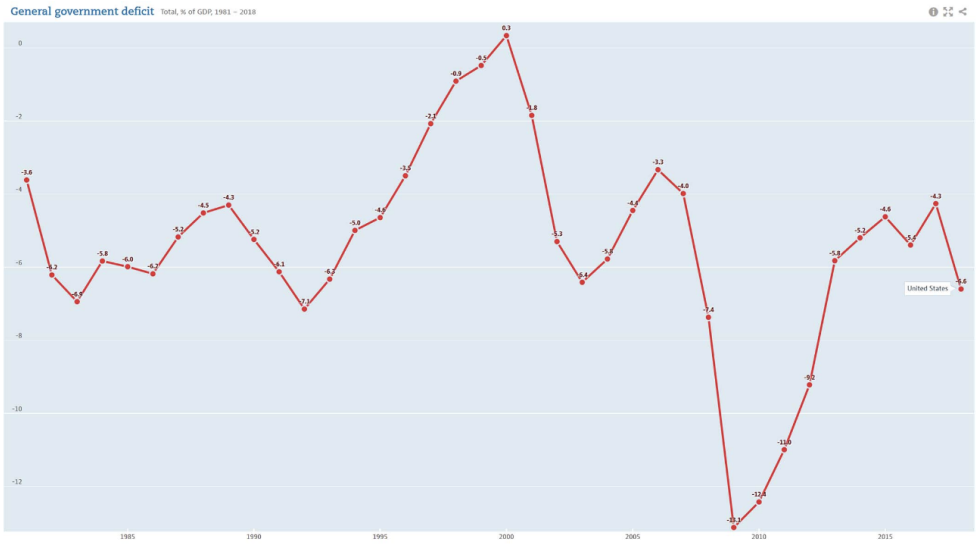
Figure 5: Saving Glut of the Rich and the Global Saving Glut



The global saving glut and the saving glut of the rich have been on the same order of magnitude. There have been periods in both the 1990s and 2010s in which the saving glut of the rich has exceeded the global saving glut.

Public Deficit:

$$S^p = S^p_{top\%} + S^p_{90\%-99\%} + S^p_{bottom90\%} = I - \mathbf{S^g} + NX + W$$

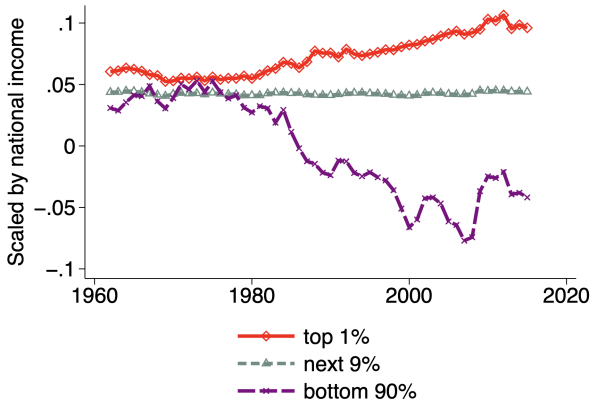


Dissaving by the bottom 90% and by the government

Given that investment and the current account did not increase as the saving glut of the rich increased, this implies that either the government or households in the bottom 99% of the income distribution must have reduced saving significantly

$$S^p = \mathbf{S^p_{top\ \%}} + \mathbf{S^p_{90\%\text{-}99\%}} + \mathbf{S^p_{bottom\ 90\%}} = I - S^g + NX + W$$

Figure 6: Saving Glut of the Rich and Saving of the non-Rich



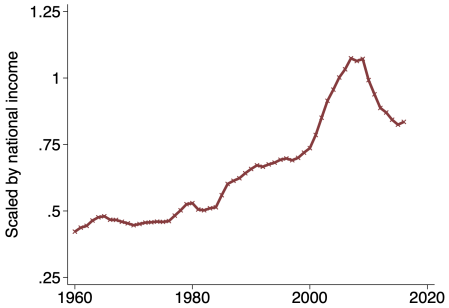
- Annual savings of households in the 90th to 99th percentile of the income distribution have been steady at about 4% of national income each year.
- In contrast, there has been a large decline in the saving of the bottom 90% of the income distribution

Financing the Rise in Household Debt

Private Debt:

Rise in total household debt to national income in the United States.
From 1982 to 2007, the household debt to national income ratio rose by 57 percentage points.

Figure 11: Household Debt to National Income Ratio



Holders of Household Debt

Figure 14: Who Holds Household Debt across the Income Distribution?

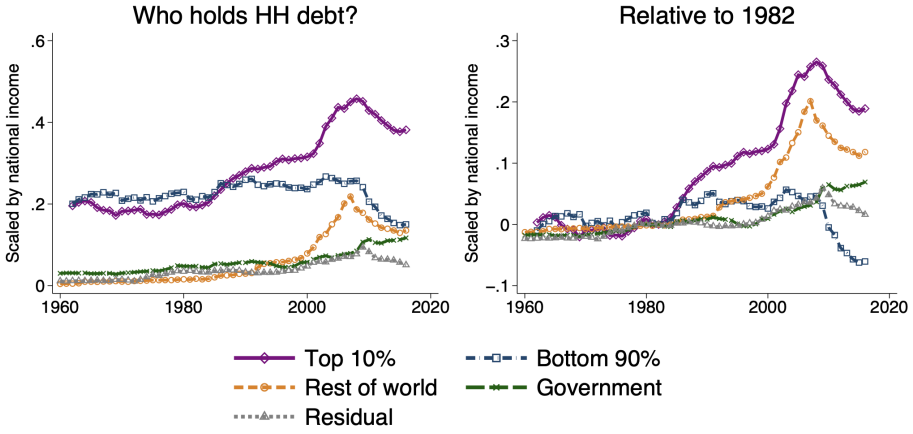


Figure 8.2: splits household debt held by the U.S. household sector by the top 10% of the income distribution and bottom 90% of the income distribution

- a substantial fraction of the rise in household debt from 1982 to 2007 was financed by the top 10% of the income distribution.

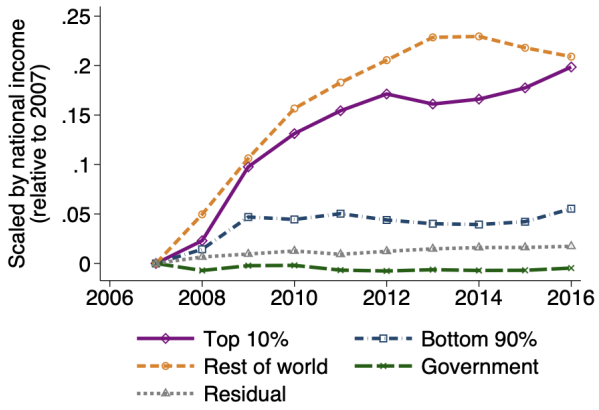
- households in the top 10% of the income distribution increased their holdings of U.S. household debt by 26 percentage points of national income from 1982 to 2007, which is almost half of the overall rise in household debt during this period.
- Prior to 1996, the fraction is significantly higher.
- The total rise in the household debt to national income ratio from 1982 to 1996 was 19.5 percentage points, and the top 10% of the income distribution accounted for 11.8 percentage points of the total increase.

→ The saving glut of the rich was financing the rise in household debt in the United States before the global saving glut was.

The Rise in Government Debt

What has been the role of the saving glut of the rich in this process? To answer this question, government debt is unveiled and assigned across the income distribution This allows for an analysis of how much of the rise in government debt since 2007 was financed by the top 10% of the income distribution.

Figure 19: Who Financed the Rise in Government Debt?



There have been two main sources of incremental financing for the U.S. government since 2007:

- the top 10% of the income distribution of U.S. households
- the rest of the world

The two groups have financed government deficits to a similar degree

The saving glut of the rich has played an **important role in financing the government** as it has stepped in to make-up for the reduction in household consumption after the recession.

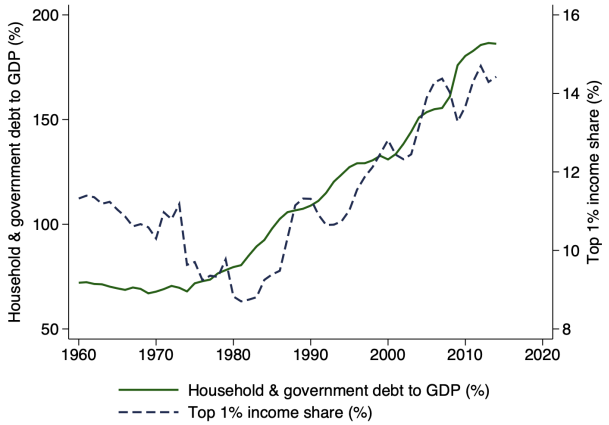
Main findings

- The **saving glut of the rich has been as large as the global saving glut**, and it has **not been associated with an increase in investment**
  - investment has declined since the 1980s
  - government deficits were stable until the Great Recession
  - The US as a whole has borrowed more from the rest of the world during this time period
- Substantial dissaving and large accumulation of debt by the non-rich
  - borrowing by non-rich households from rich households has been an important factor sustaining aggregate consumption growth as income inequality has accelerated
  - The decline in saving by the bottom 90% was masked by housing valuation gains until 2007
- Since the Great Recession, the saving glut of the rich has been financing government deficits to a greater degree

Other Countries

This study focuses on the United States, but the findings may be applicable to other countries. Australia, Canada, and the United Kingdom, for example, have all witnessed a substantial increase in top income shares and large increases in household debt

Figure 20: Top income shares and rising household debt across countries



The saving glut of the rich may be linked to the rise in household debt worldwide

Private debt (IMF-ILO 2010)

> "*"Over the past three decades, inequalities have widened in many countries, driven by various factors, including the diminishing share of wages in national income and increasing inequality within wage income, as well as technological change. This, in turn, has fed back into the globalization process and the structure of demand, contributing to the emergence of imbalances nationally and internationally and raising multiple issues of fairness"*
>
> *(...)*
>
> *"In some countries, and particularly in the United States, increasing inequality may have led to increased indebtedness of the household sector and thus an important factor in explaining the subprime mortgage crisis*"

Implications

- Both public and private debt matter
- Institutions are key determinants of AD, inequality, and savings
  - Directly [e.g. public expenditures (G) in deficit]
  - Indirectly (e.g. shaping income distribution)
- Consensus Institutions might have detrimental effects on macroeconomic outcomes (and stability)
- Open discussion

> "*Escaping a debt trap requires consideration of less standard macroeconomic policies, such as those focused on redistribution or those reducing the structural sources of high inequality*" - (Mian et al. 2020)