

Deutsche Bank
Research



US Income and Wealth Inequality

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Overview

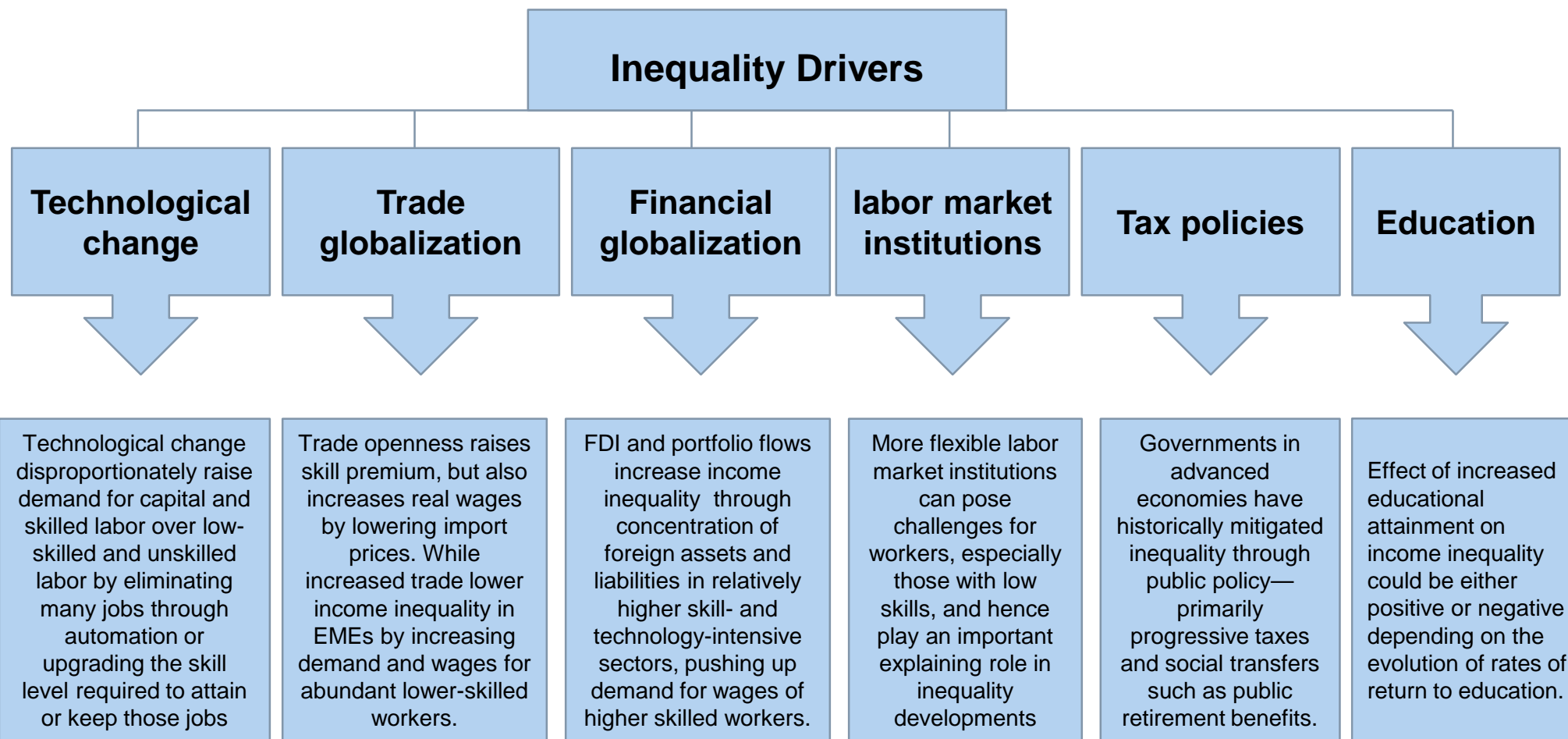
Inequality is likely an important driver of populism.

It is important for markets to understand the drivers of inequality and how income and wealth inequality have developed in different countries.

The bottom line is that inequality is increasing in most countries around the world and there are no signs of this changing anytime soon.



Drivers of income inequality



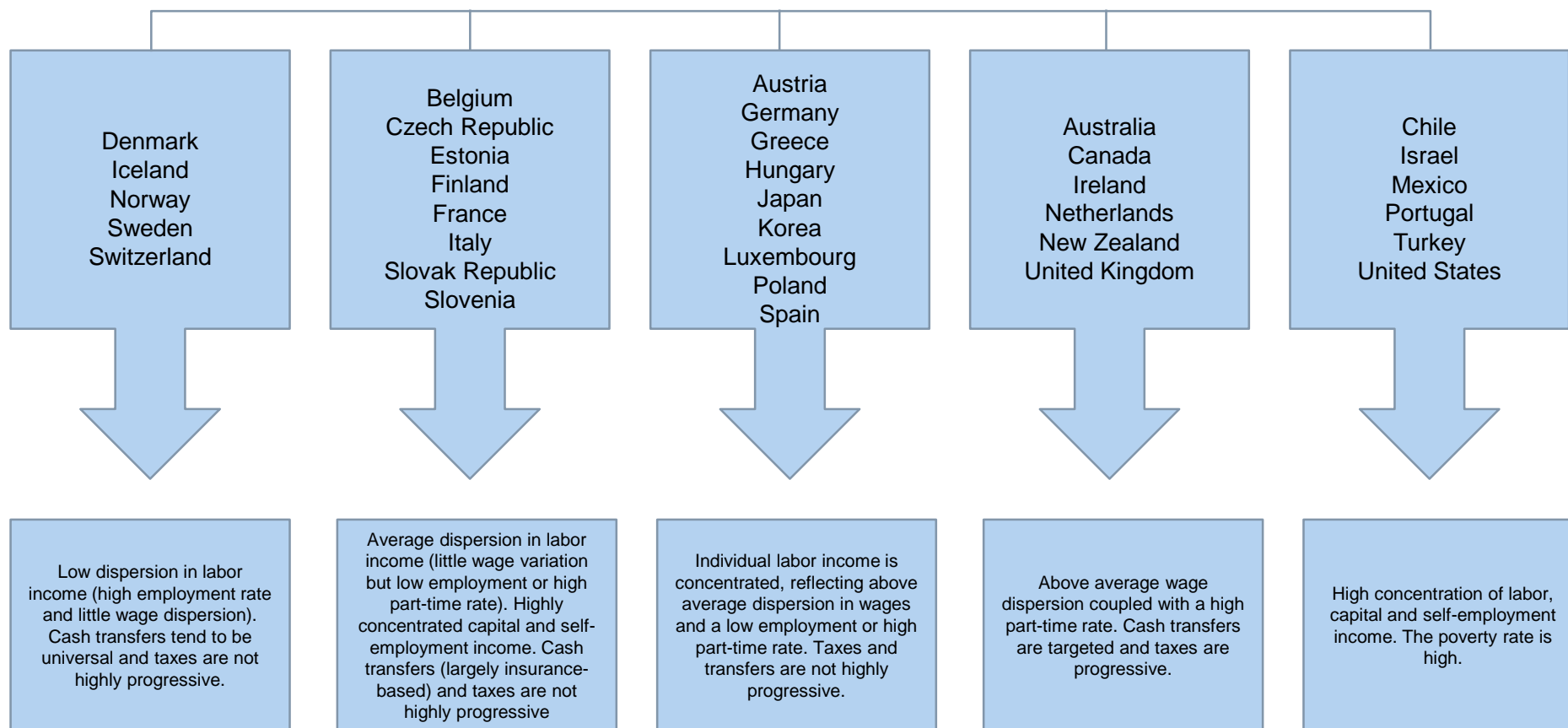
Source: OECD , DB Global Markets Research



Country groups with similar patterns of inequality

Low inequality in household disposable income

Higher inequality in household disposable income

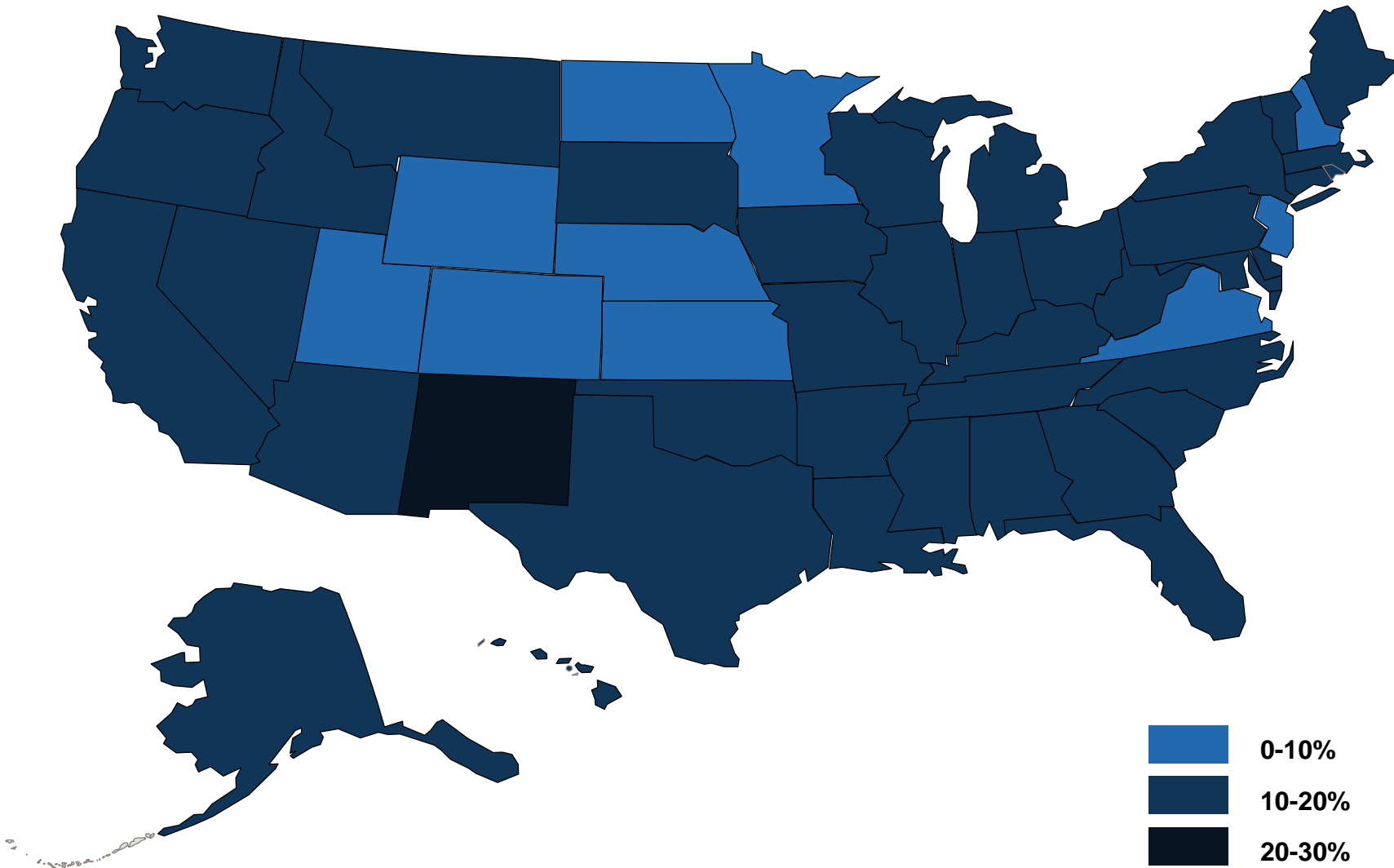


Source: OECD , DB Global Markets Research



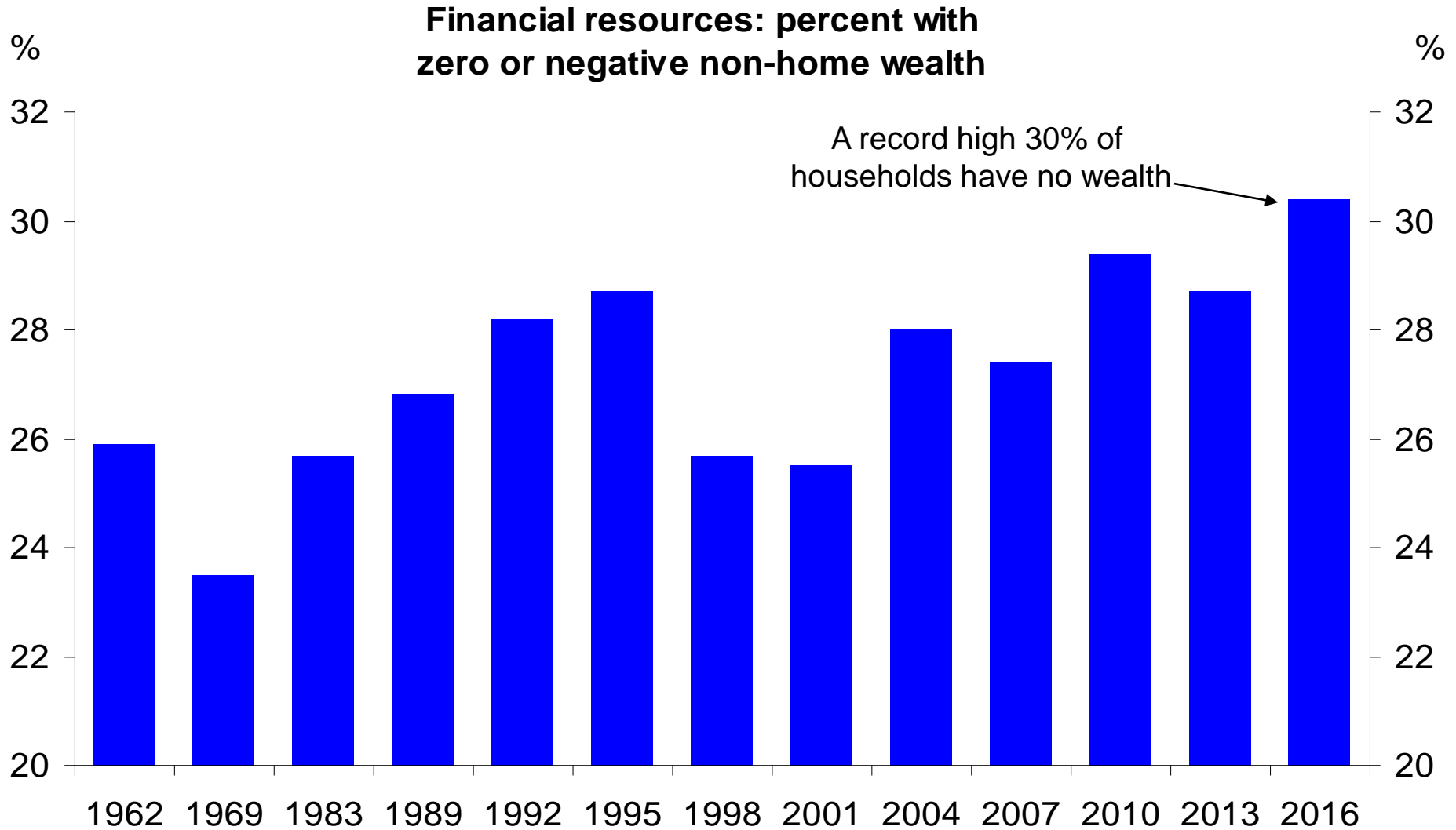
Overview

Percentage of population receiving food stamps, 2016



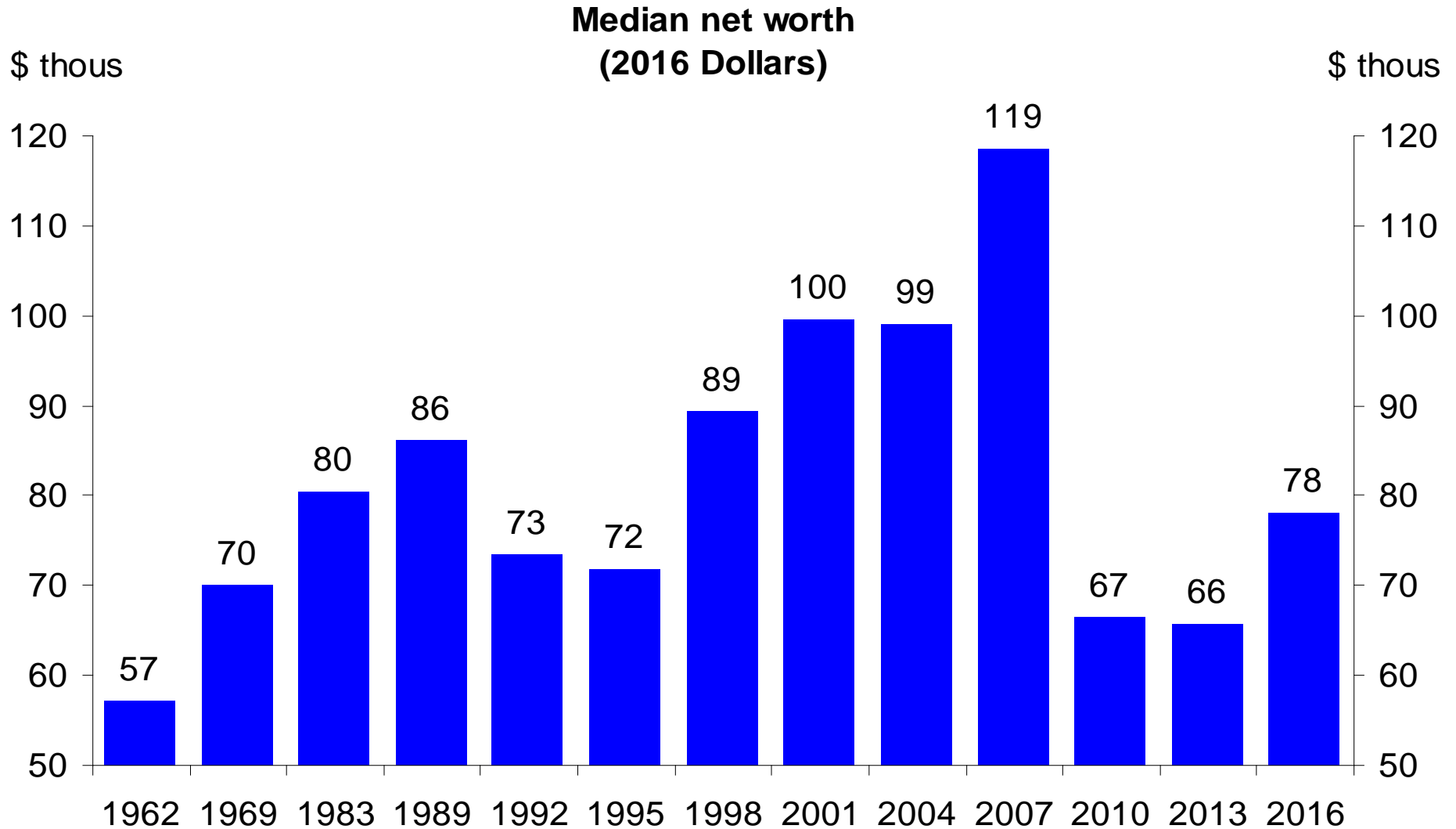
Source: CBPP, DB Global Markets Research

More families than ever before have zero or negative non-home wealth



Source: Edward N. Wolff (2017). Survey of Consumer Finances, , DB Global Markets Research

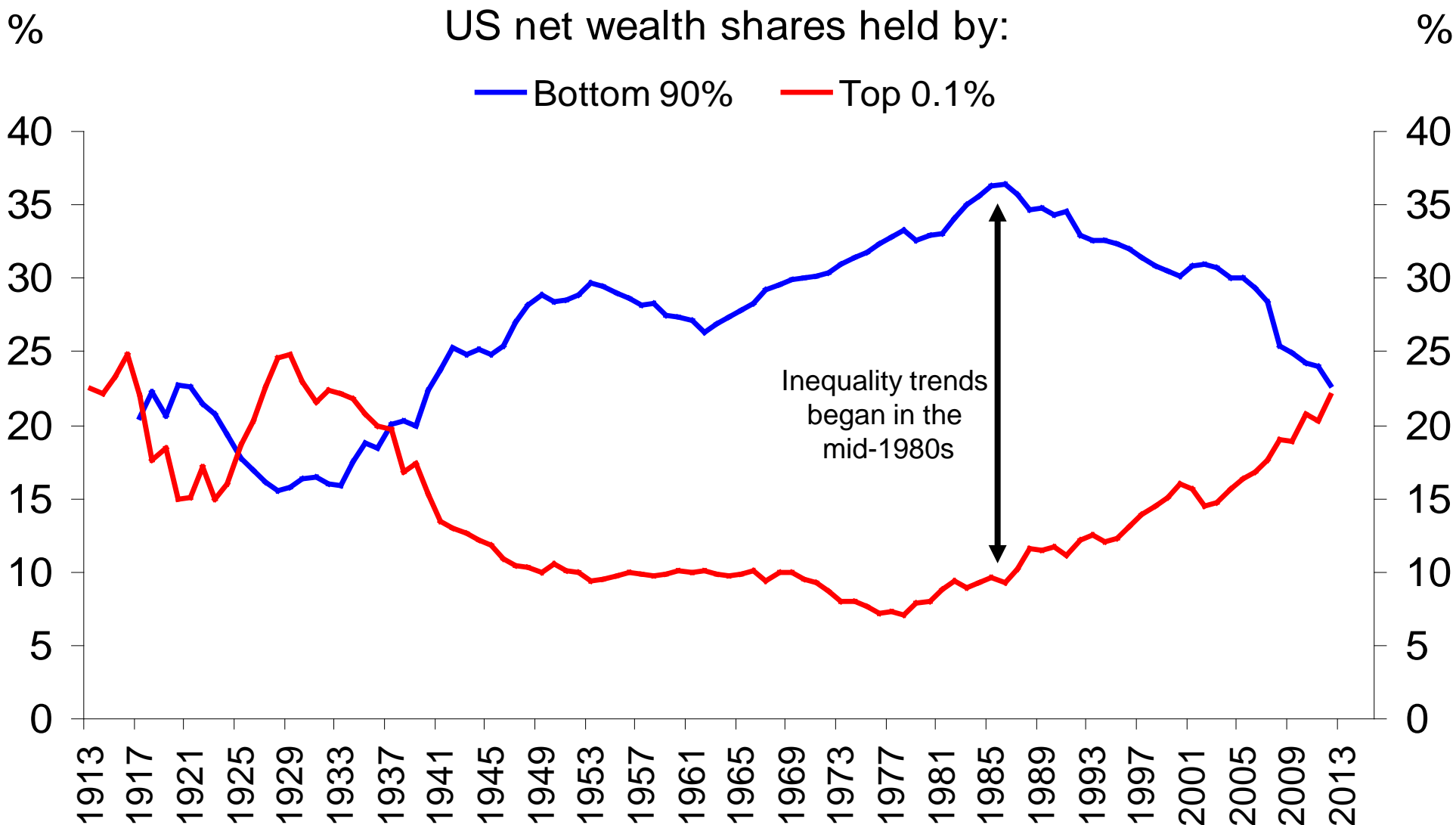
S&P500 and home prices may be at all-time highs but the median family still has low net worth



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



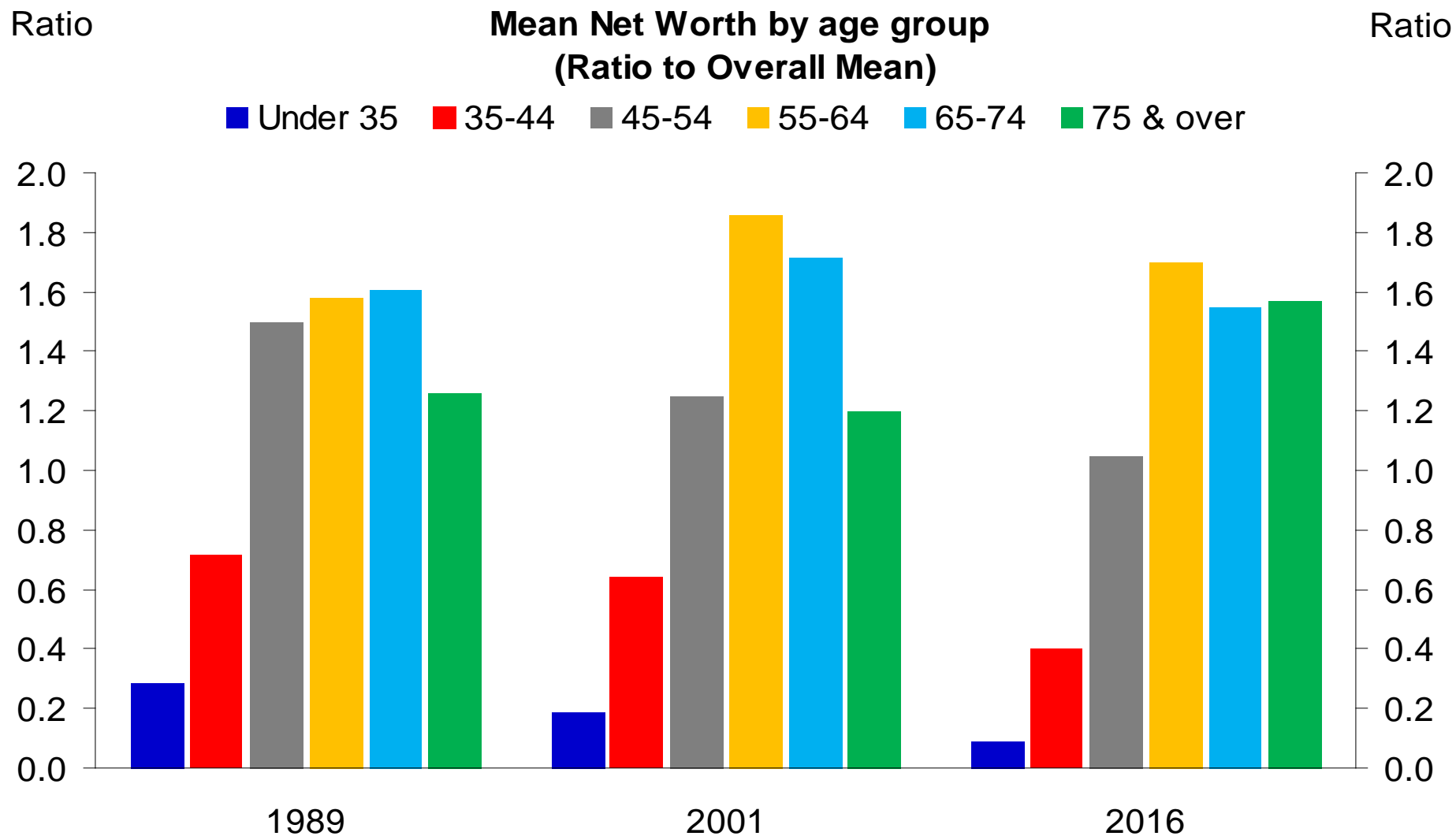
US: Top 0.1% owns as many assets as the bottom 90%



Source: The World Wealth and Income Database, DB Global Markets Research



Younger generations have smaller and smaller net worth

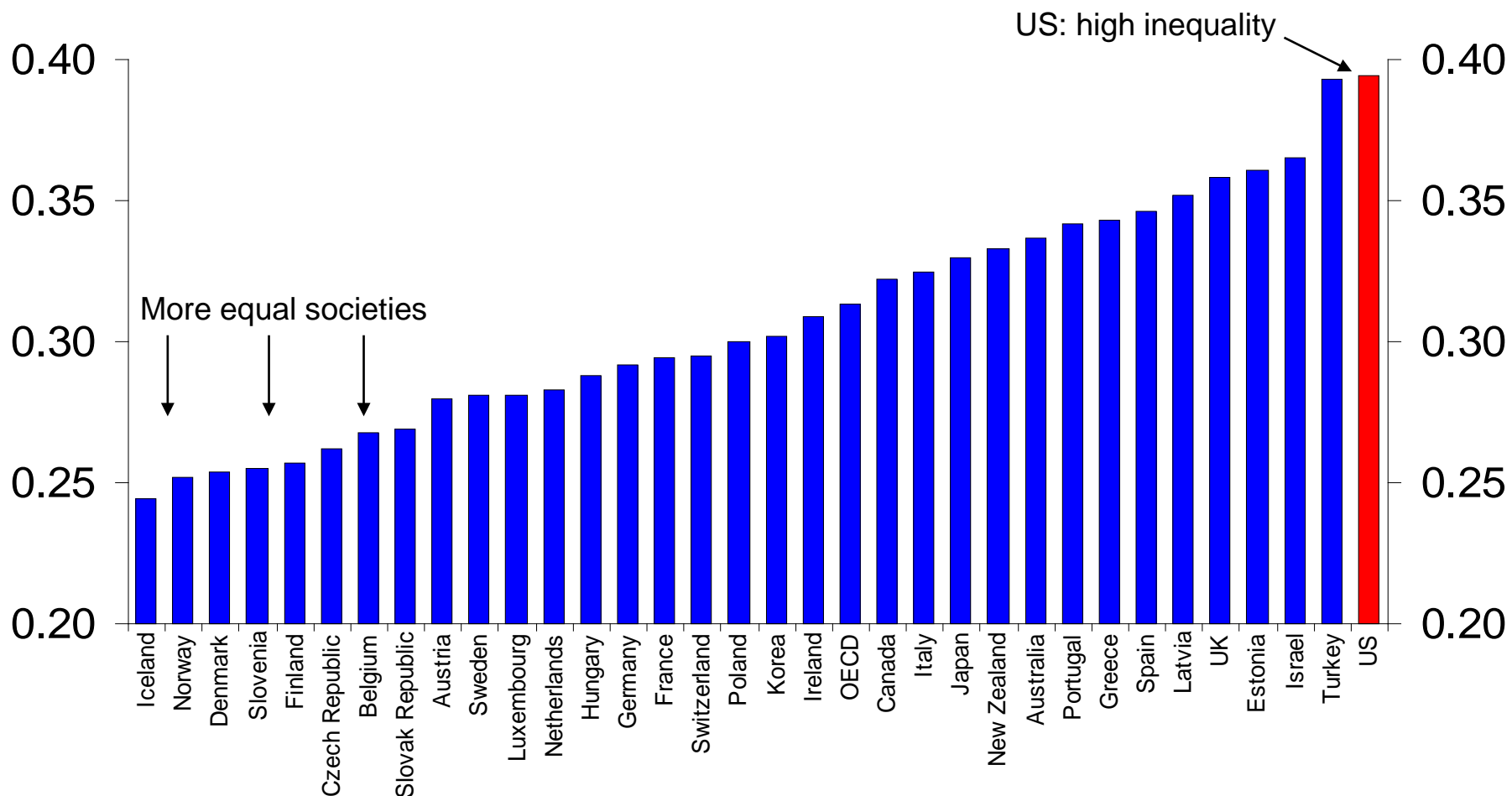


Source: Edward N. Wolff (2017) . Survey of Consumer Finances, DB Global Markets Research



Income inequality very high in the United States

Gini coefficient



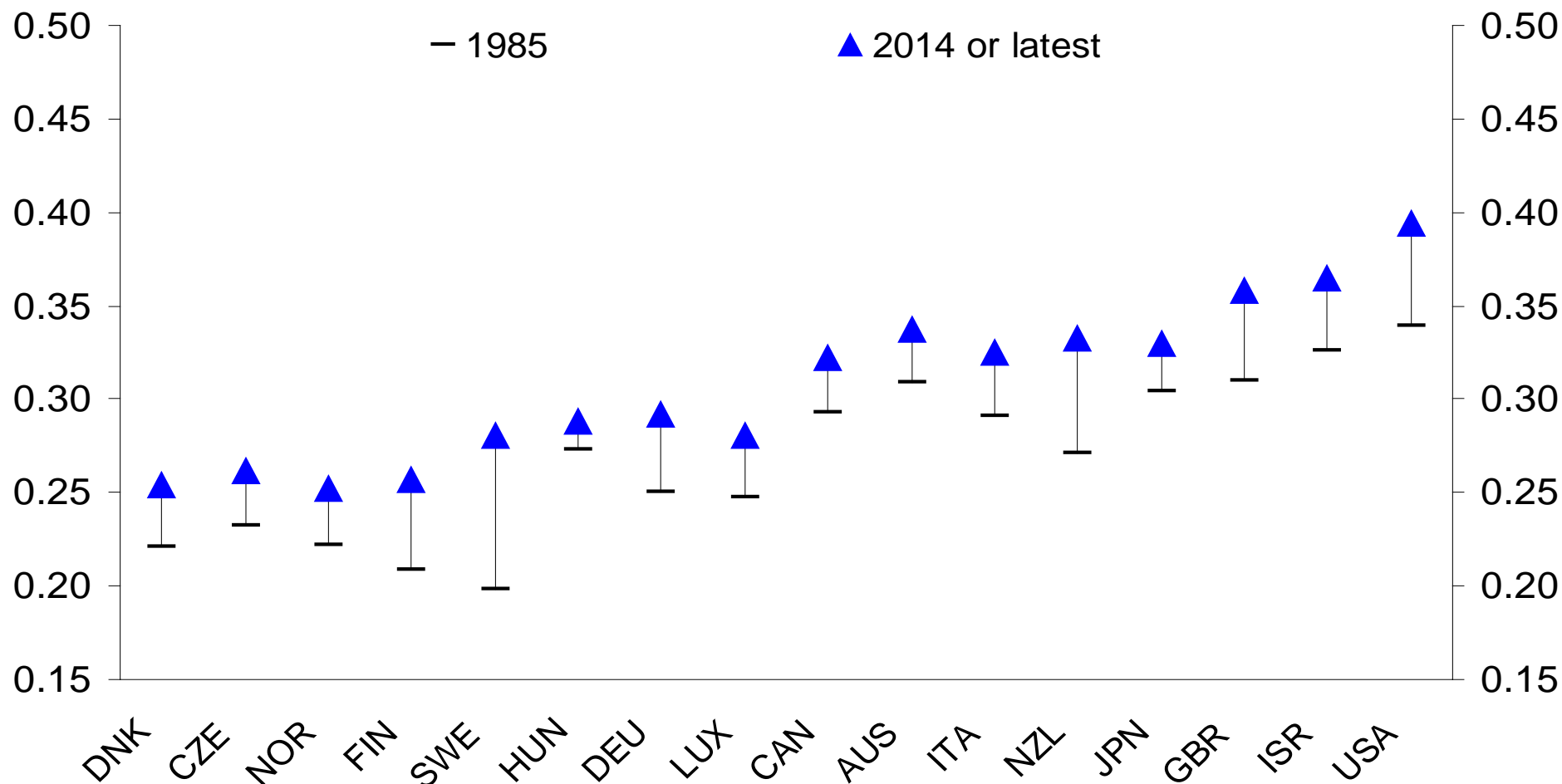
Note: Gini coefficients (disposable income, post taxes and transfers) are based on equivalised incomes for OECD countries, Colombia, Latvia and the Russian Federation; per-capita incomes for other countries; and per-capita consumption for India and Indonesia. Data from 2014 or latest year available.

Source: OECD , DB Global Markets Research



Income inequality increasing everywhere

Gini coefficients of income inequality, mid-1980s and 2014 or latest available year



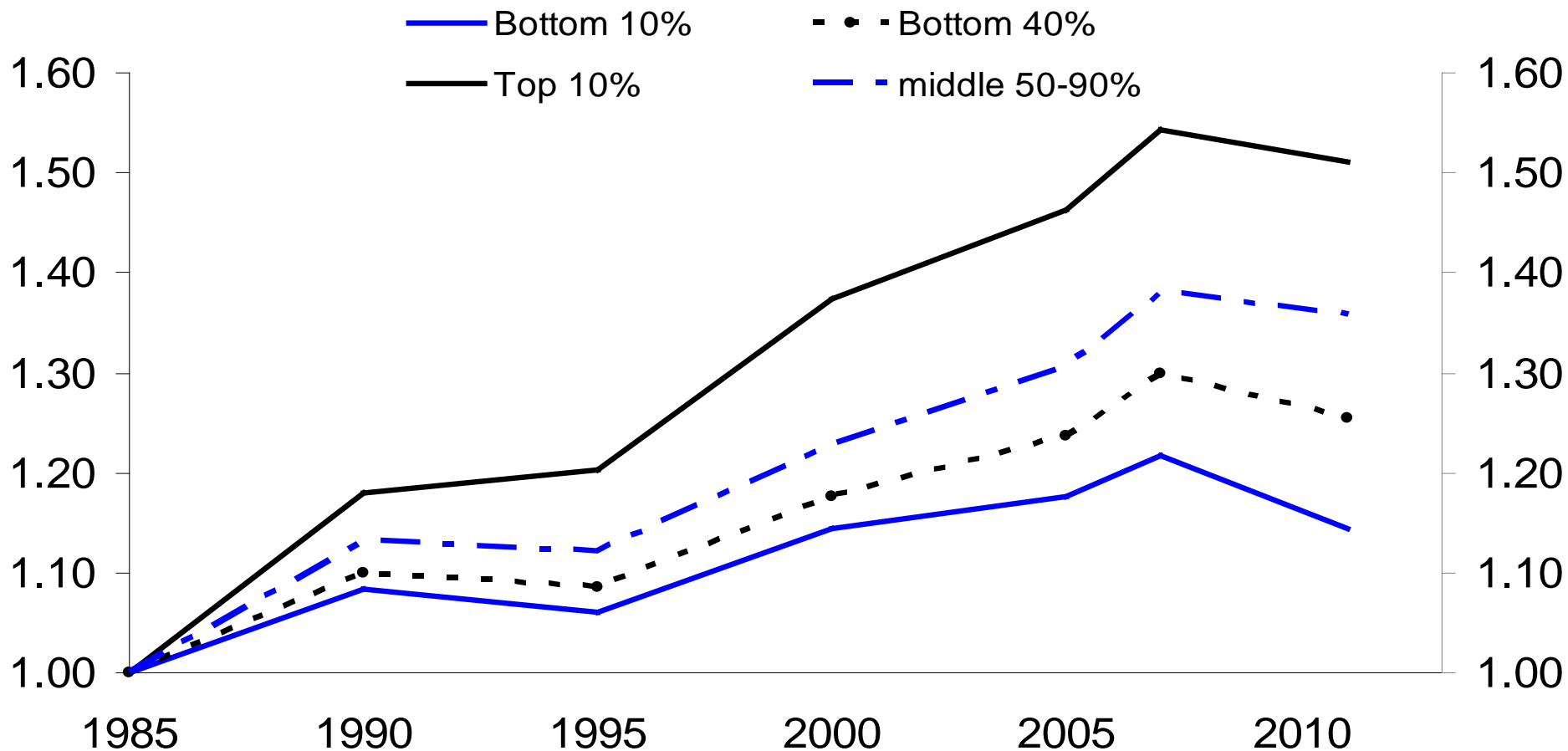
Note: Note: Income refers to disposable household income, corrected for household size.

Source: OECD , DB Global Markets Research

Across OECD countries, incomes have increased more for high-income households



Trends in real household incomes at the bottom, the middle and the top, OECD average, 1985 = 1



Note: Note: Income refers to disposable household income, corrected for household size. OECD is the unweighted average of 17 countries (Canada, Germany, Denmark, Finland, France, United Kingdom, Greece, Israel, Italy, Japan, Luxembourg, Mexico, Netherlands, Norway, New Zealand, Sweden and United States).

Source: OECD, DB Global Markets Research

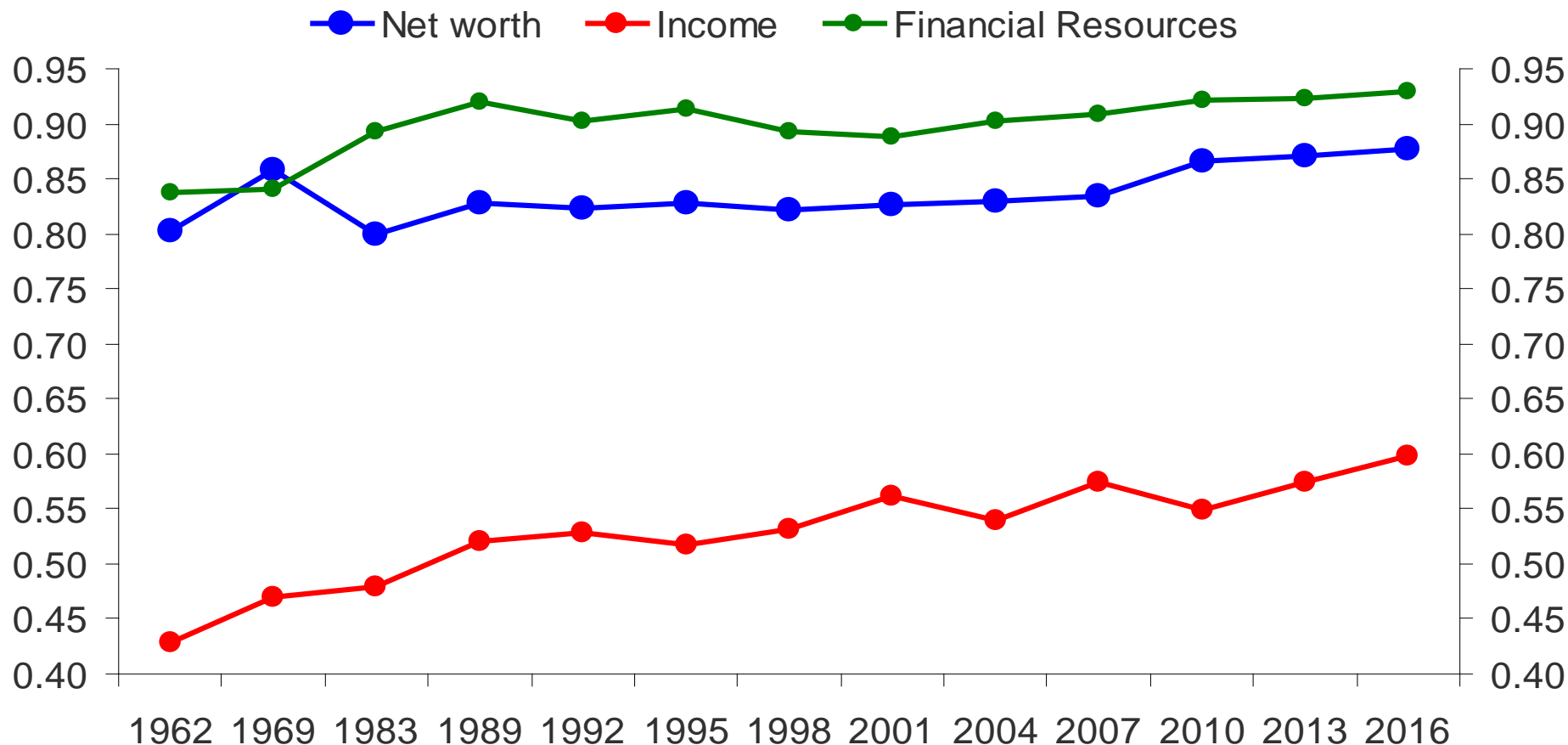


US Income inequality today and over time

Gini coefficients have increased for both income and net worth

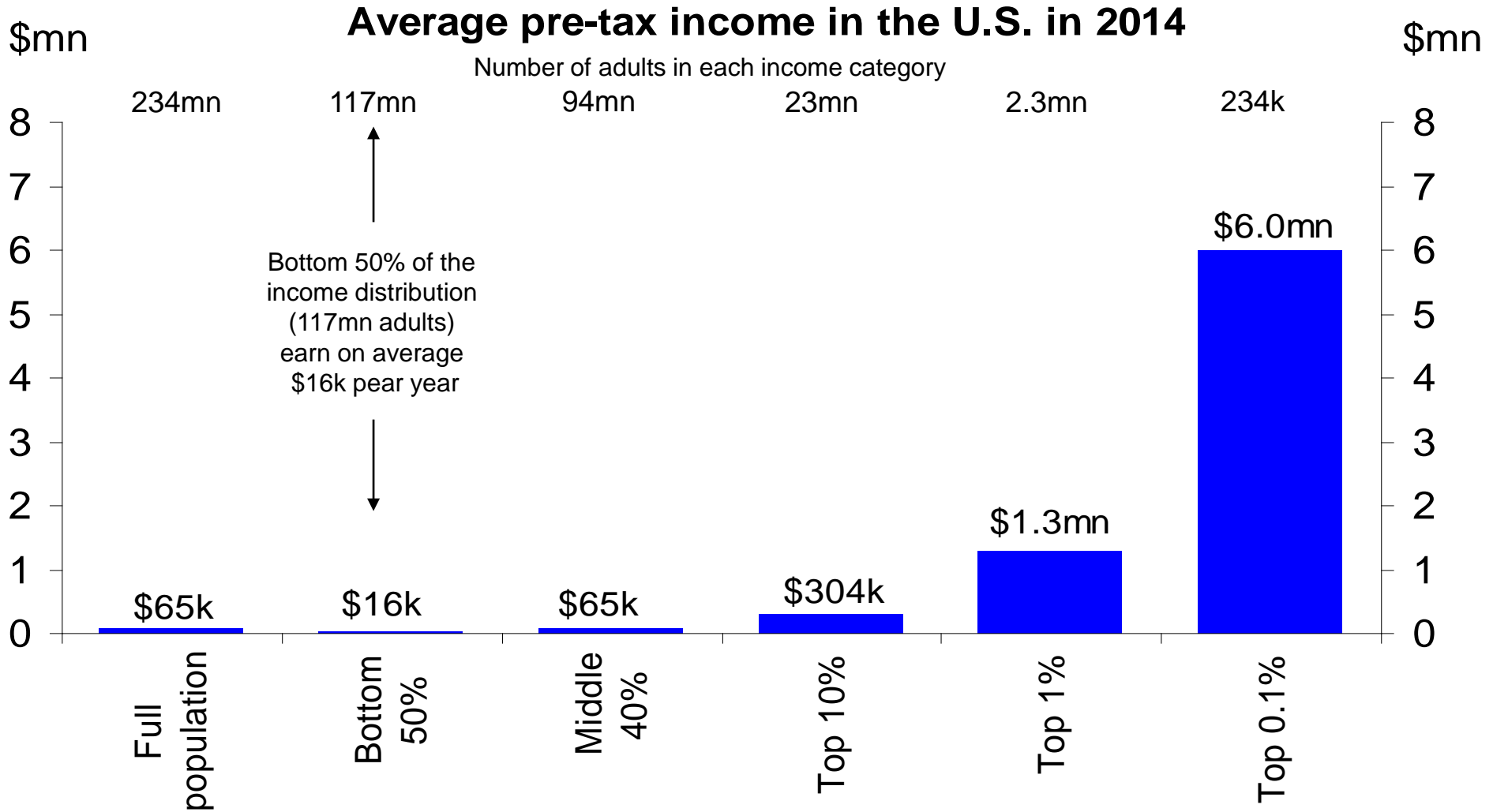


Wealth and Income Inequality (Gini coefficients)



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research

The 2.3 million people in the top 1% of the income distribution earn on average \$1.3mn per year

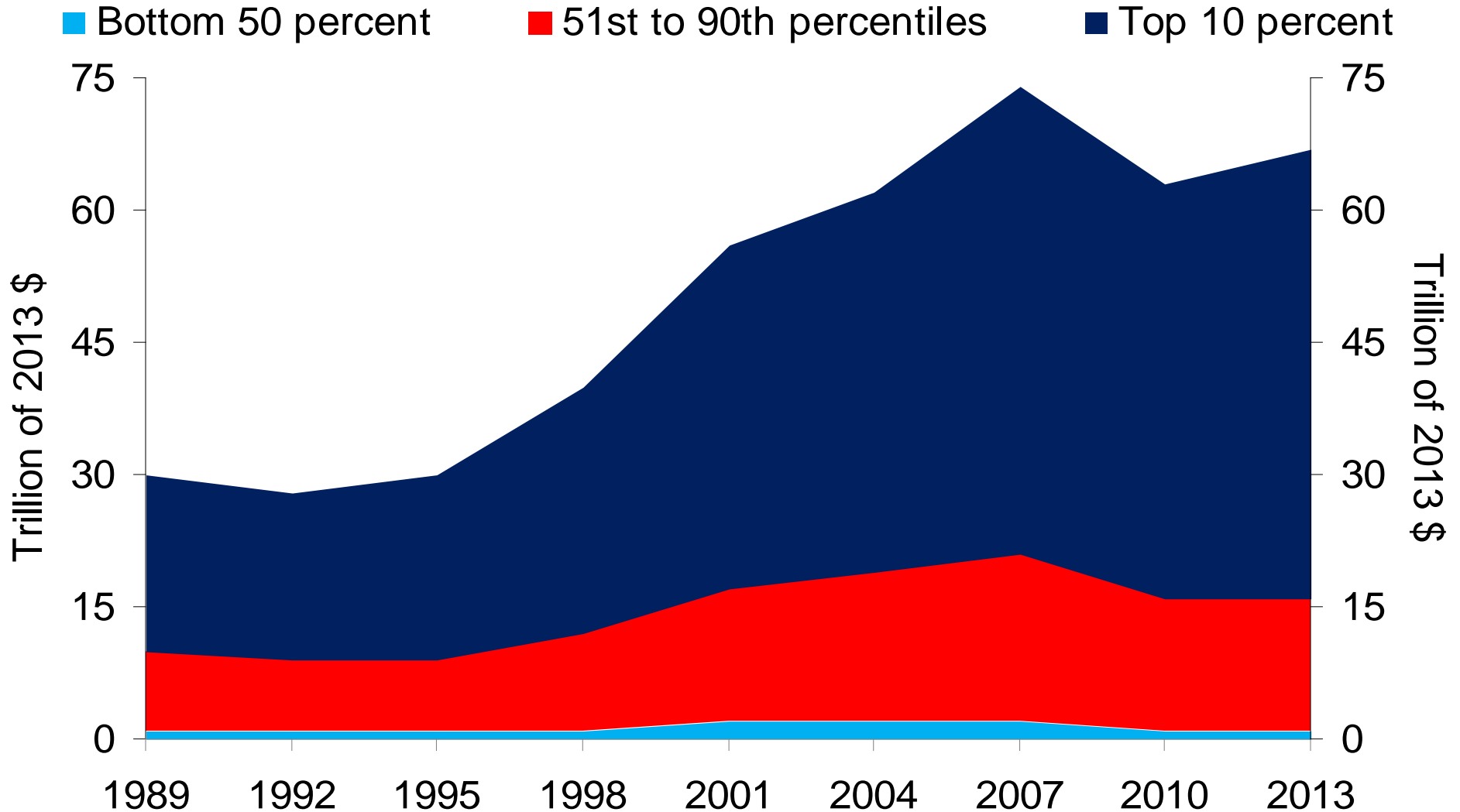


Source: Piketty, Saez, and Zucman (2016, Table 1), DB Global Markets Research

US: The top 10 percent of families own \$51trn in wealth, or about 75% of total household wealth



Holdings of family wealth, by wealth group

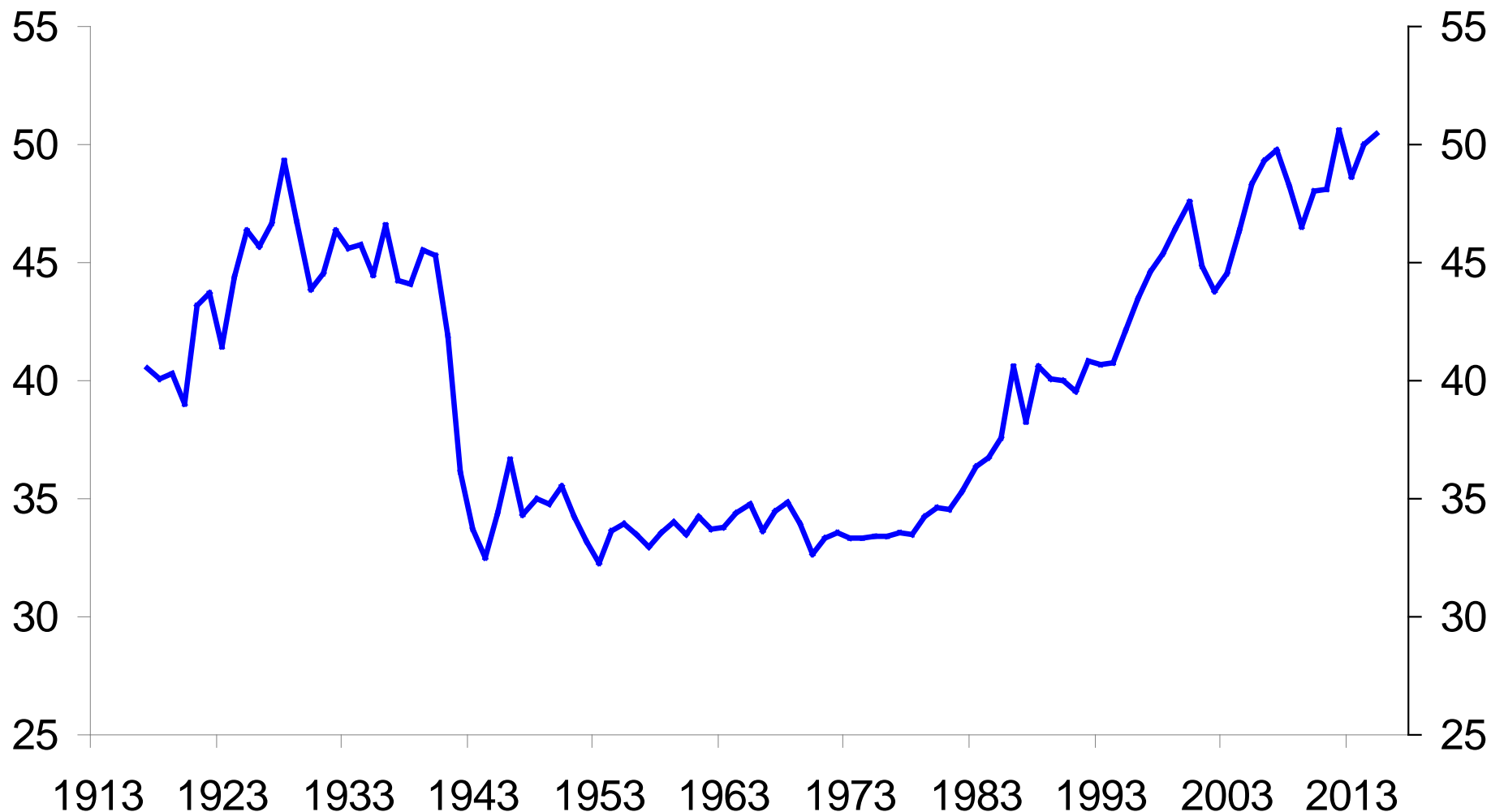


Source: Congressional Budget Office, using data from the Survey of Consumer Finances, supplemented with data from Forbes magazine's list of the nation's 400 wealthiest people, DB Global Markets Research

Income share up significantly for highest incomes



Top 10% Pre-tax Income Share in the United States, 1917–2015



Note: Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

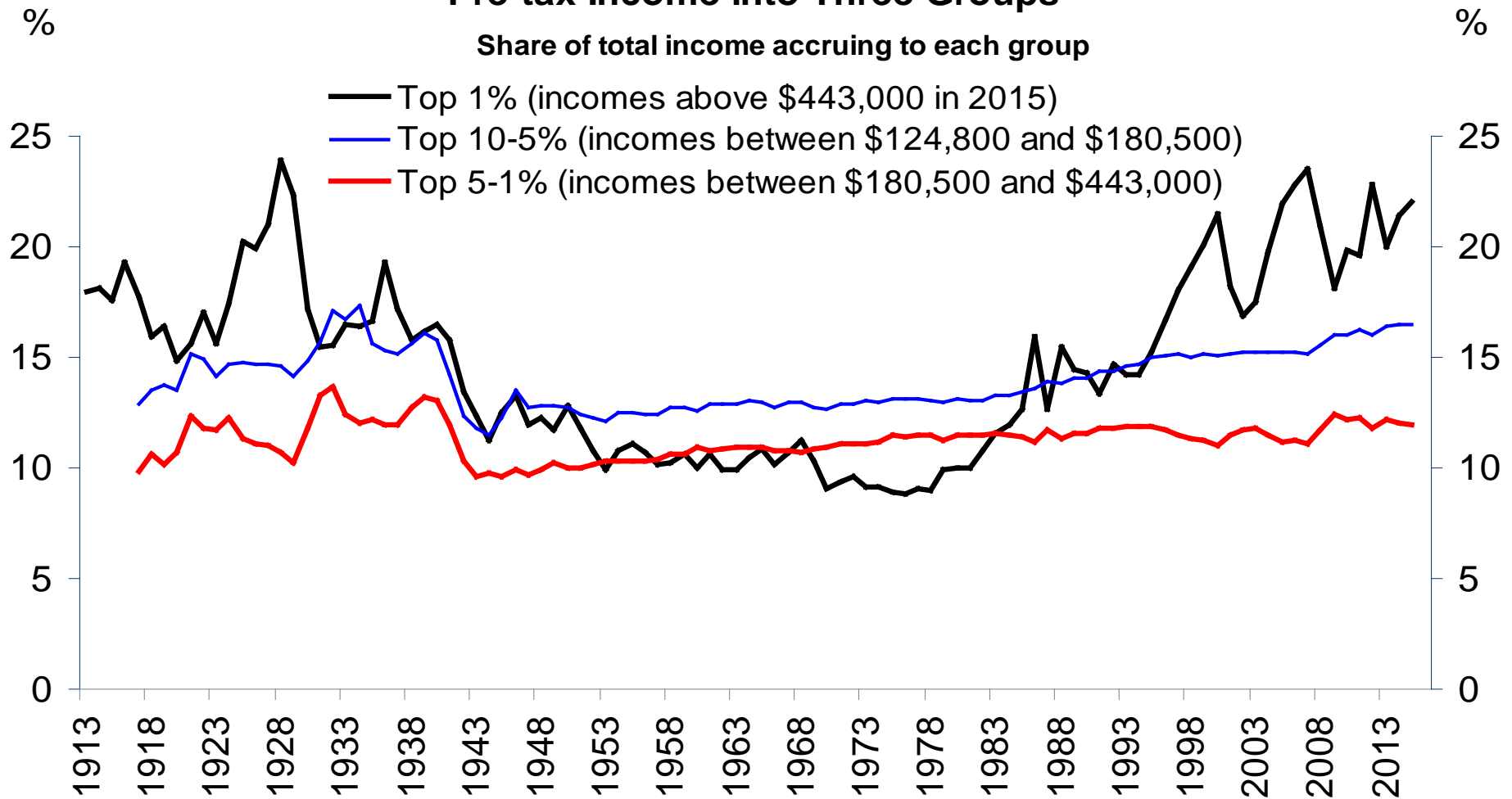
Source: Alvaredo et al. (2016), DB Global Markets Research



Top 1% earn 22% of total income, up from 8% in the 1970s

Decomposing the U.S. Top 10% Pre-tax Income into Three Groups

Share of total income accruing to each group

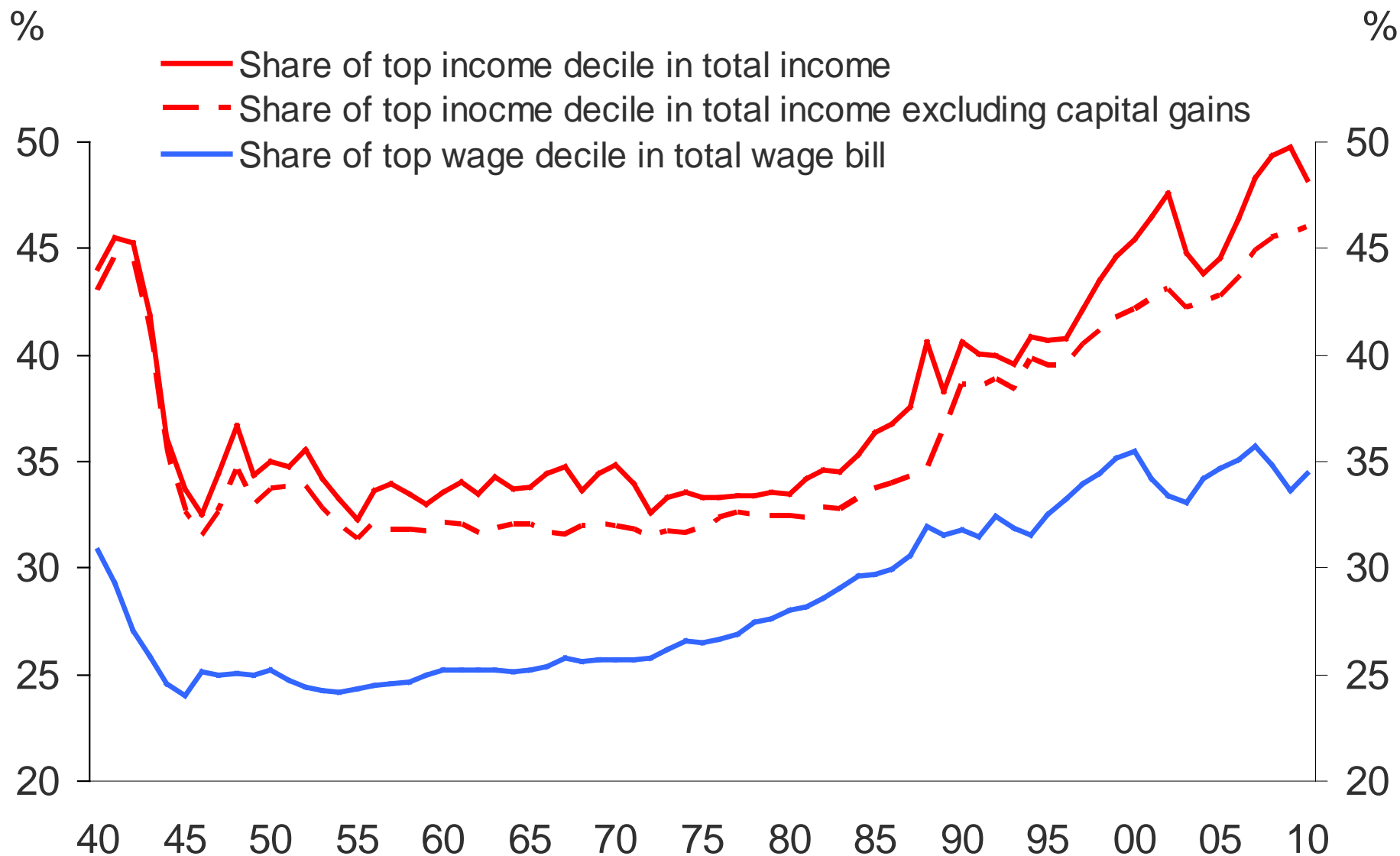


Note: Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Source: Atkinson, Piketty and Saez. (2015)., DB Global Markets Research



Wage inequality a key driver of income inequality

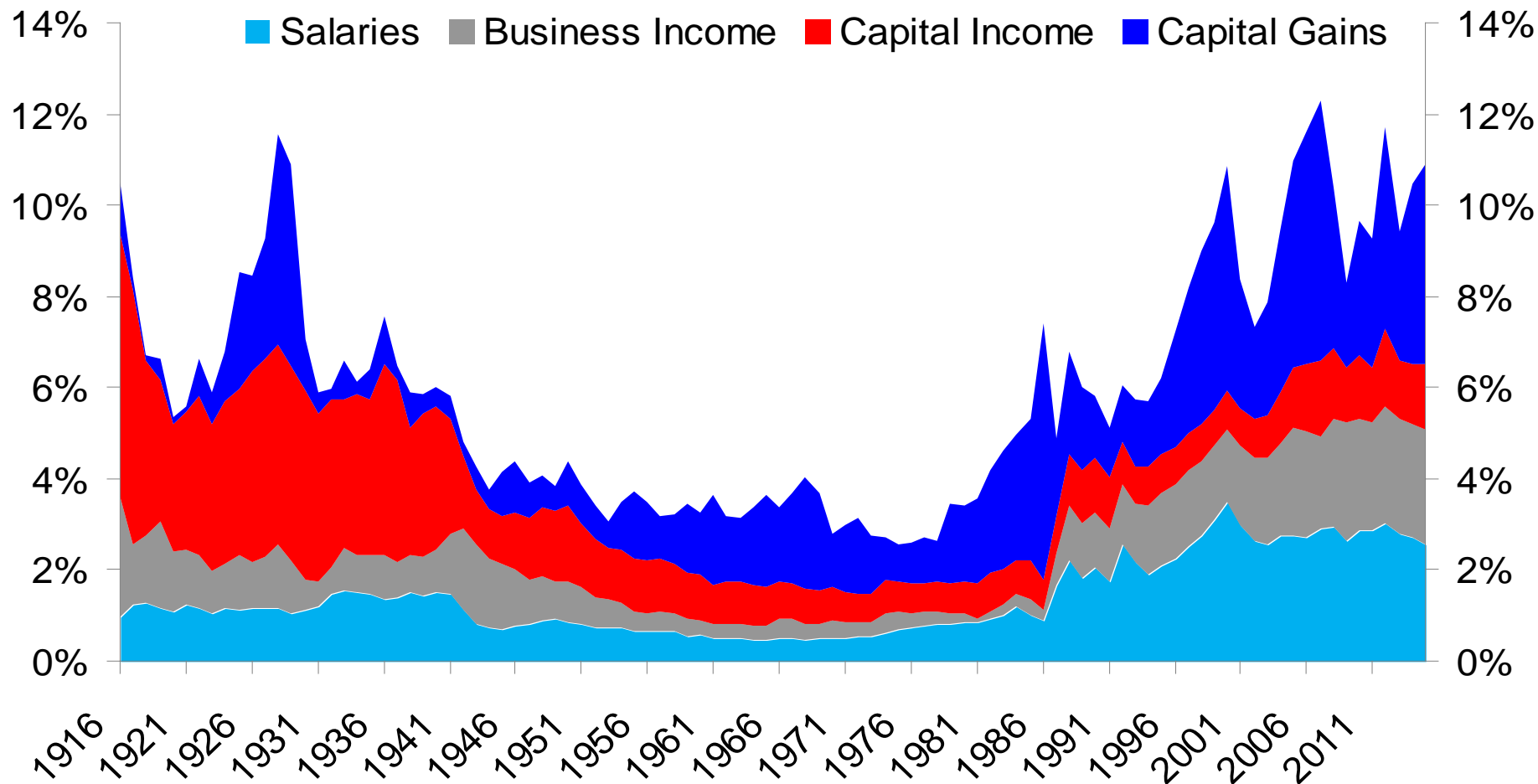


Source: Piketty (2014)., DB Global Markets Research



Business income and capital gains make up bigger share of income for the Top 0.1%

U.S. Top 0.1% Pre-Tax Income Share and Composition



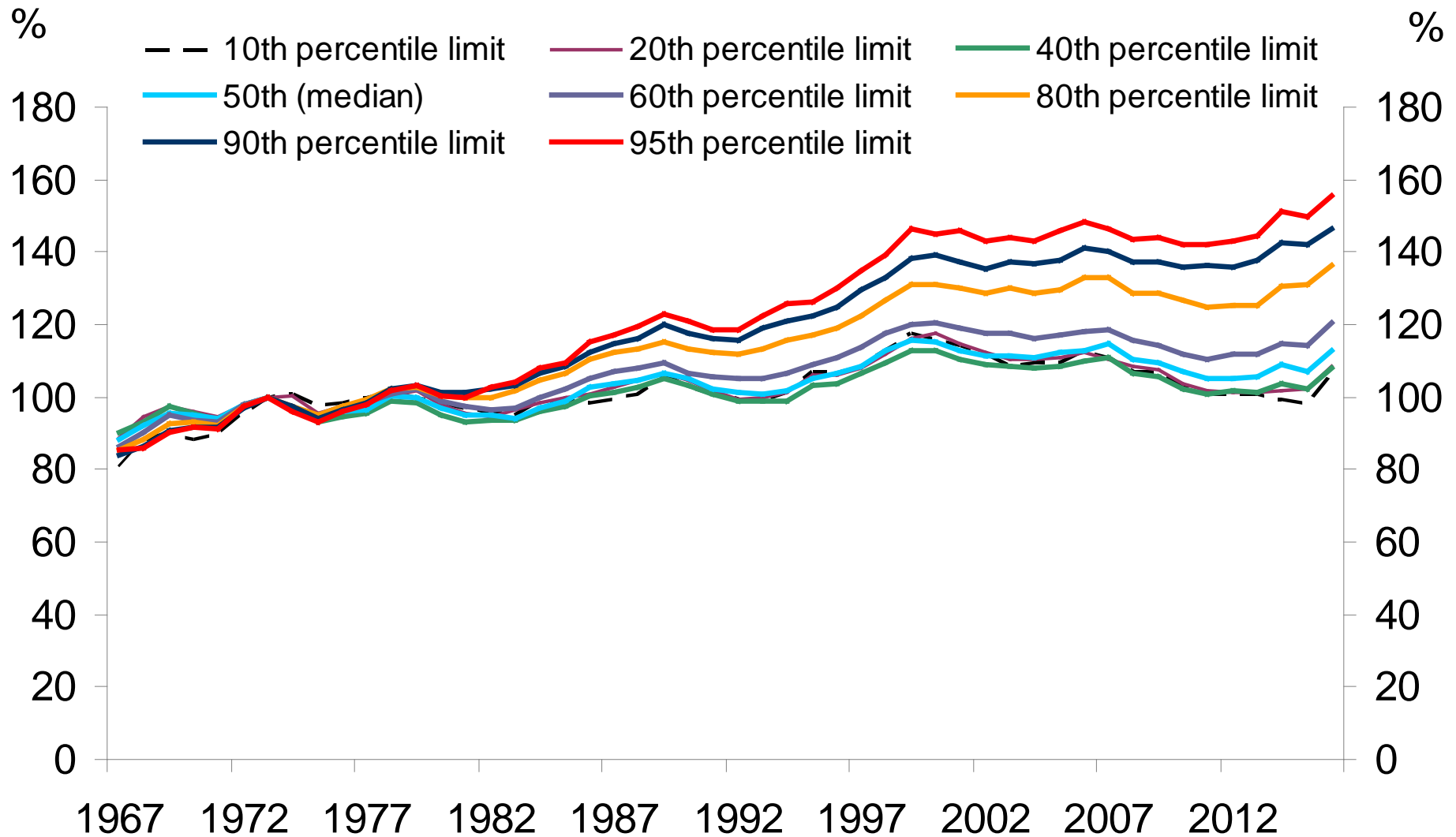
Note: Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Source: Atkinson, Piketty and Saez. (2015)., DB Global Markets Research

Incomes have stagnated for lower income groups, increased for higher income groups

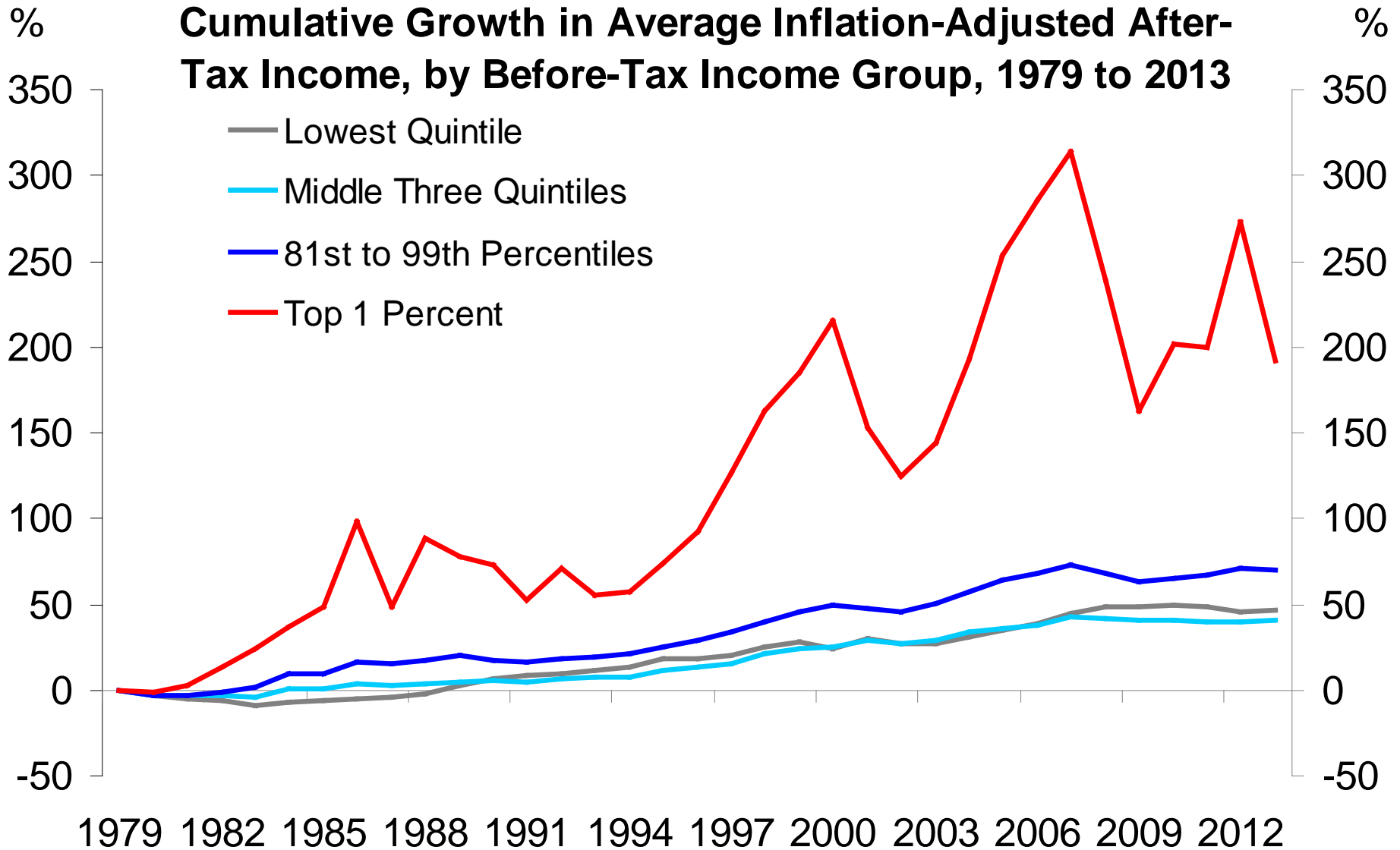


Real family income between 1967 and 2015, as % of 1973 level



Source: US Census, DB Global Markets Research

Higher income growth at the top of the income distribution

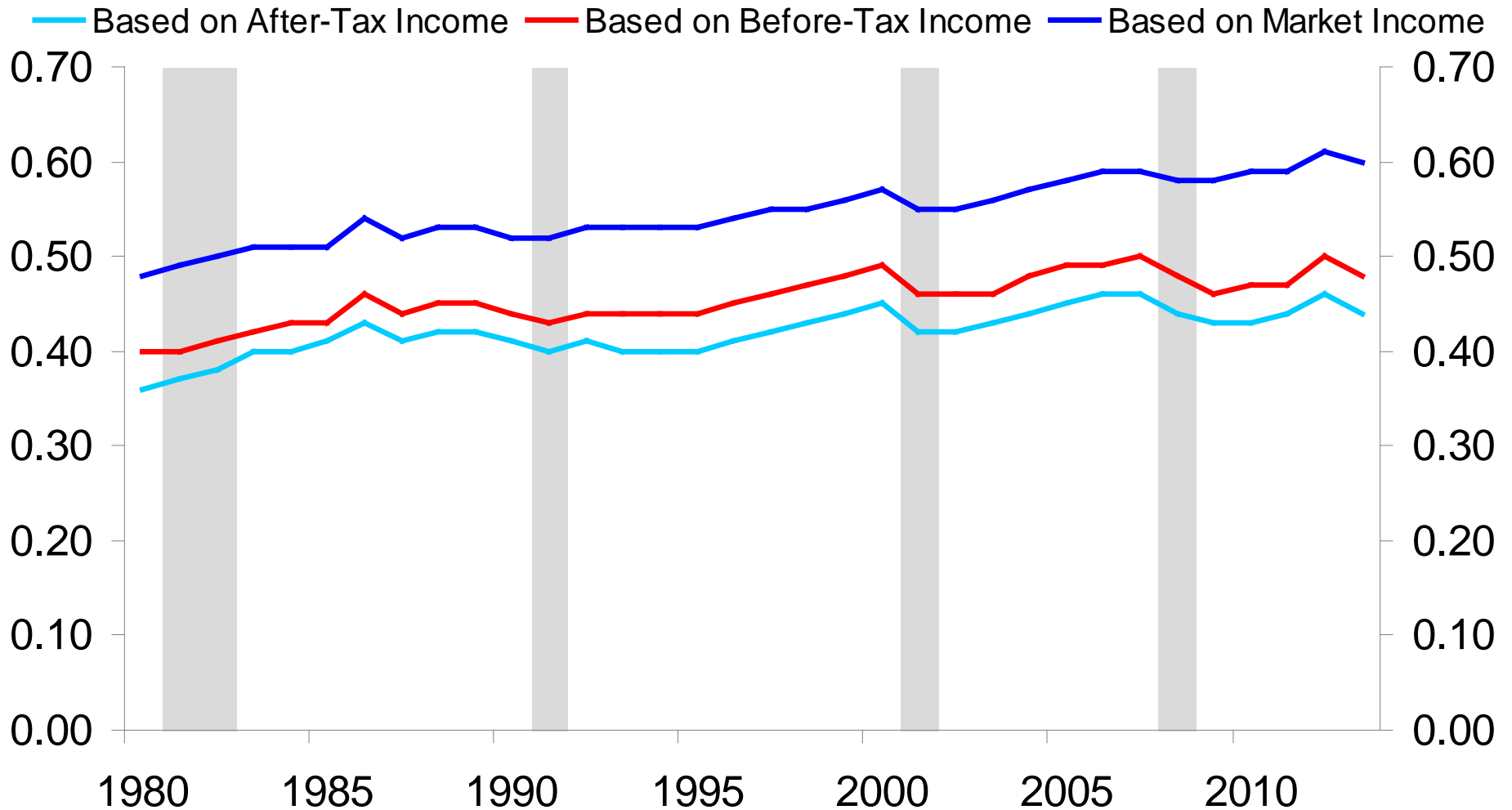


Source: CBO, DB Global Markets Research



Income inequality up no matter how you measure the Gini coefficient

Gini Indexes Based on Market, Before-Tax, and After-Tax Income, 1979 to 2013

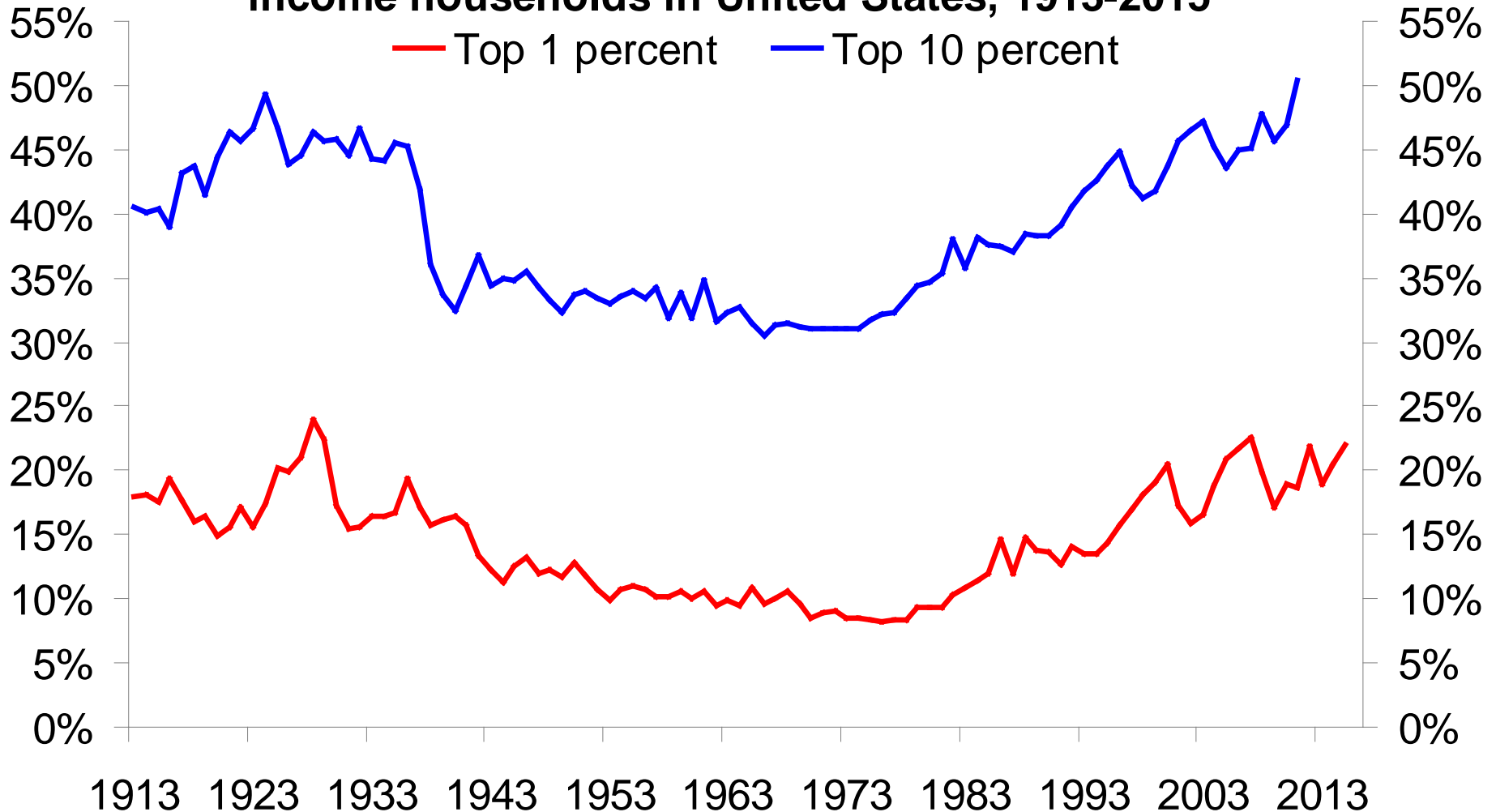


Source: CBO, DB Global Markets Research



Income concentration at the top has increased since the 1970s

Share of total before tax income flowing to the highest income households in United States, 1913-2015

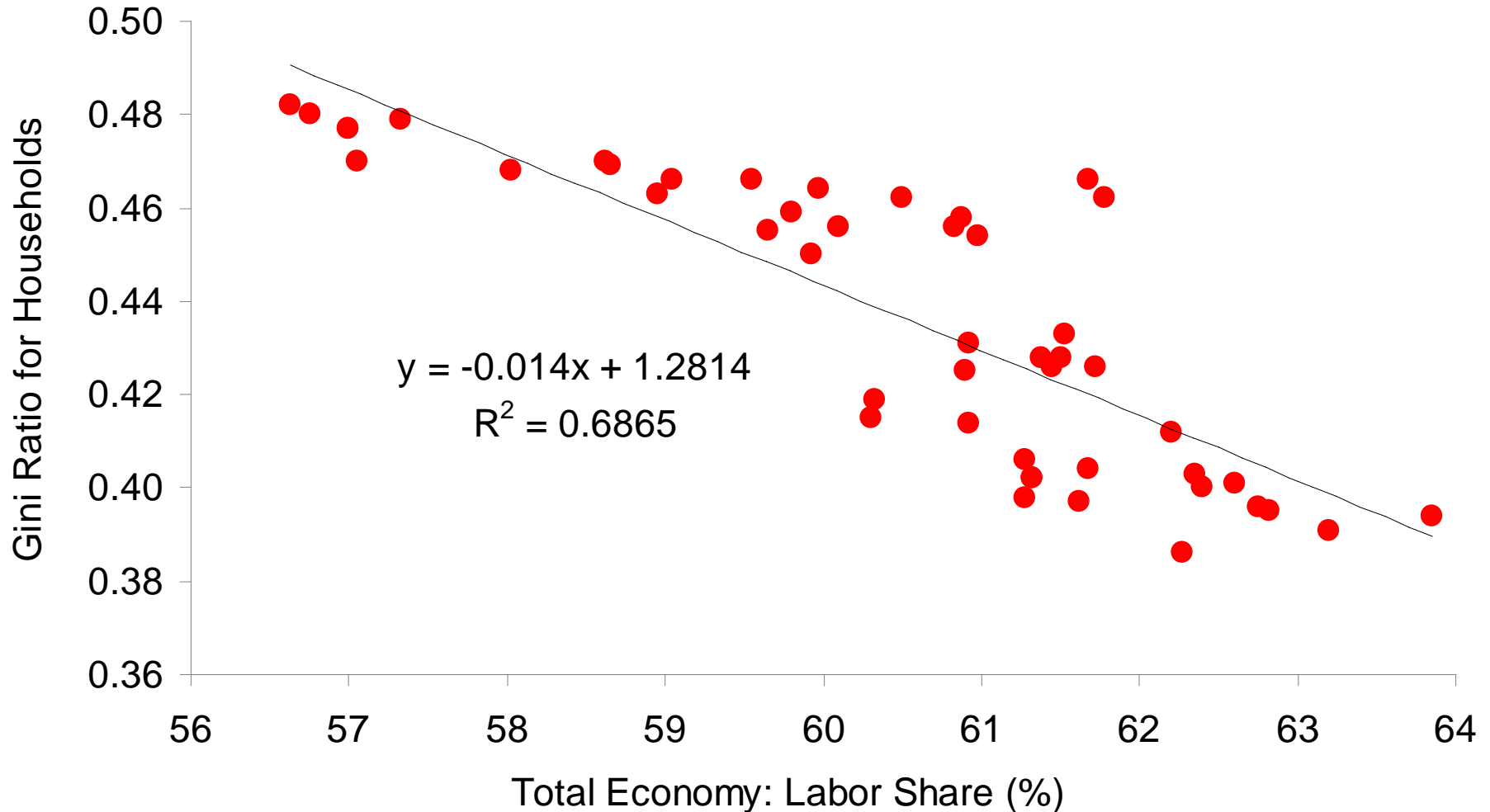


Source: World Wealth and Income database , DB Global Markets Research



Declining labor share is negatively related to higher inequality

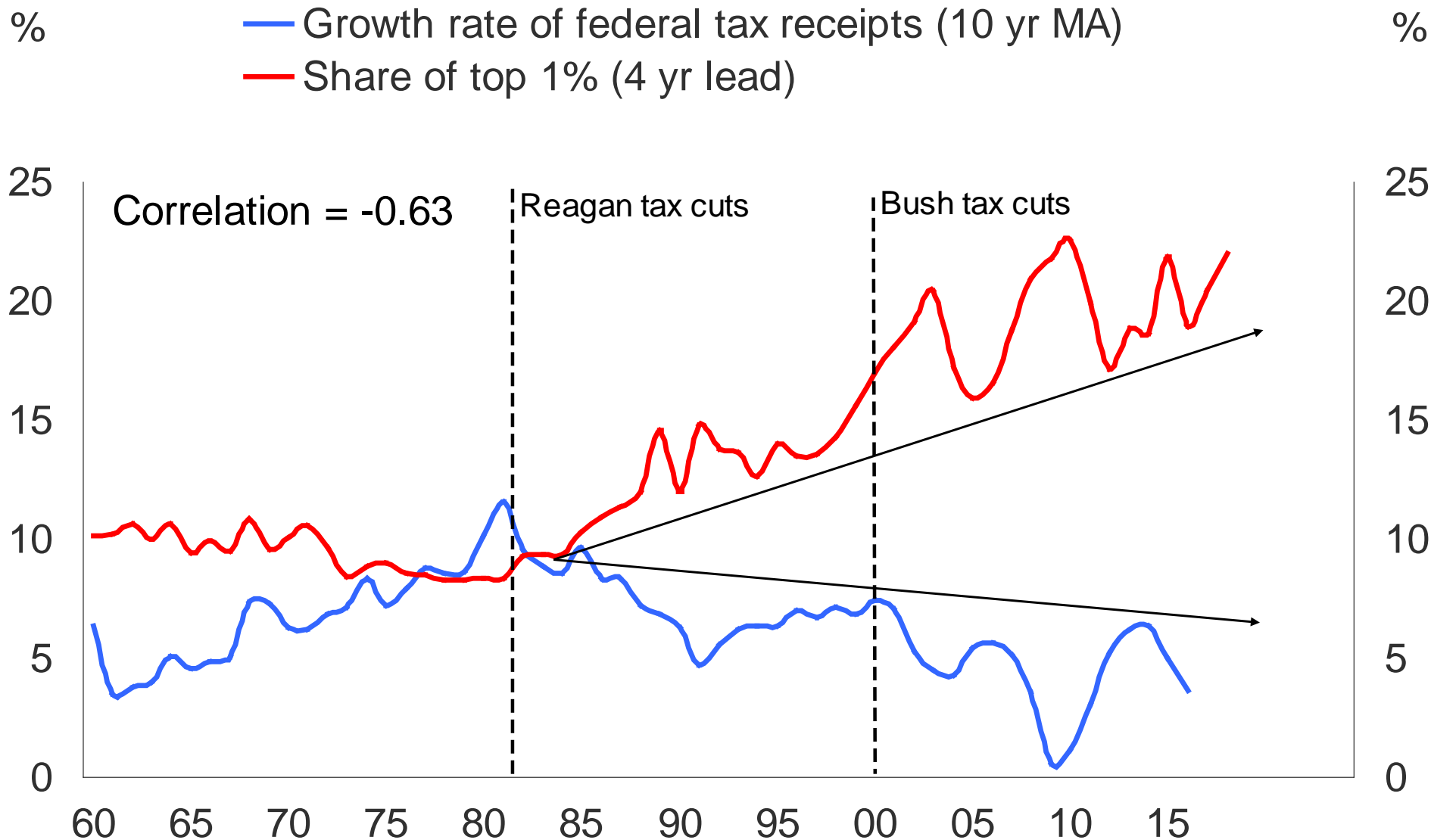
United States : labor share vs Gini ratio 1967-2015



Source: Census, BLS, Haver Analytics, DB Global Markets Research



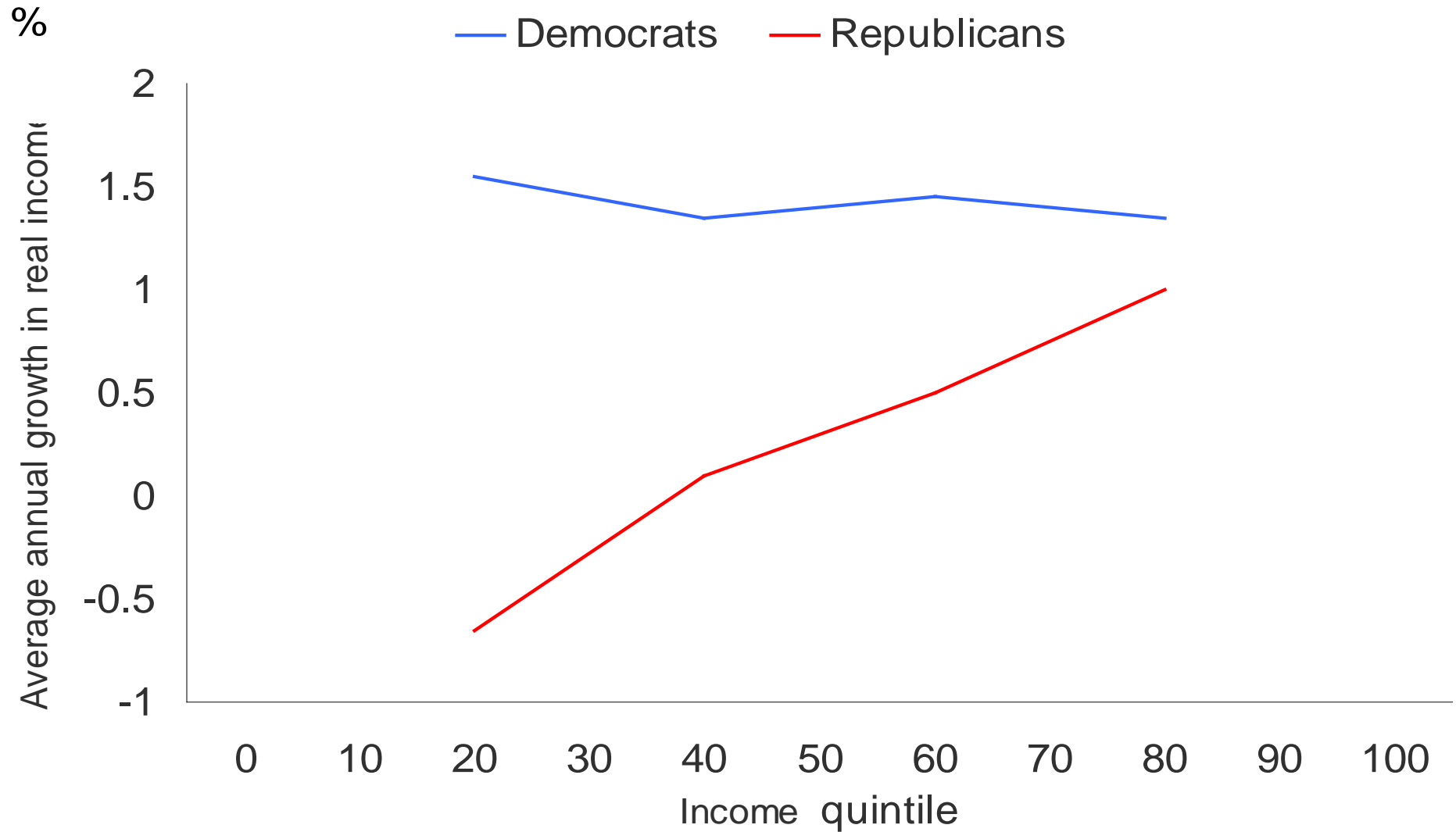
Tax cuts have increased inequality



Source: BLS, FRED, Piketty 2014 database, DB Global Markets Research



Different income growth under different political parties

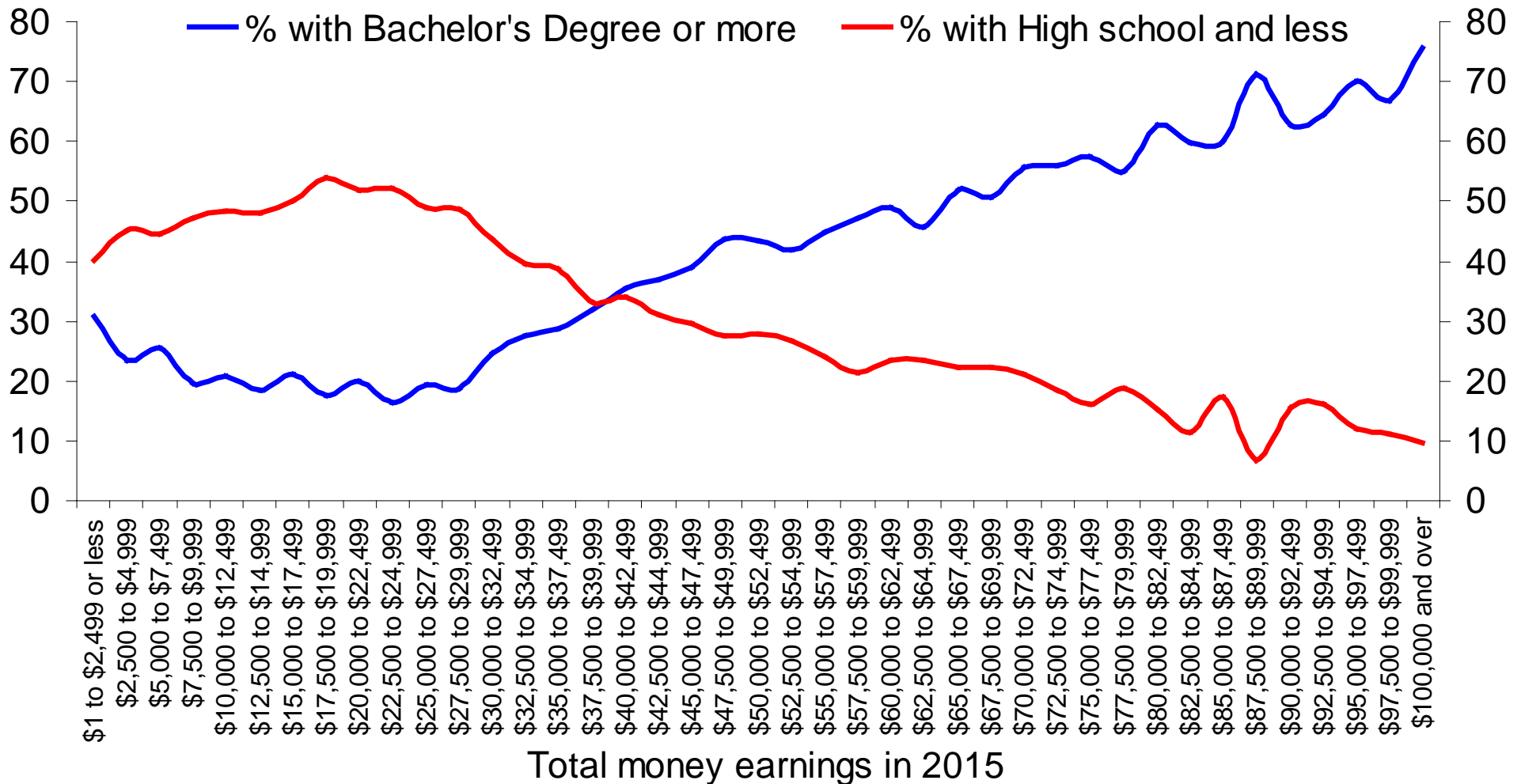


Source: *Unequal democracy* by Larry Bartels, DB Global Markets Research

The more education you have the higher are your earnings

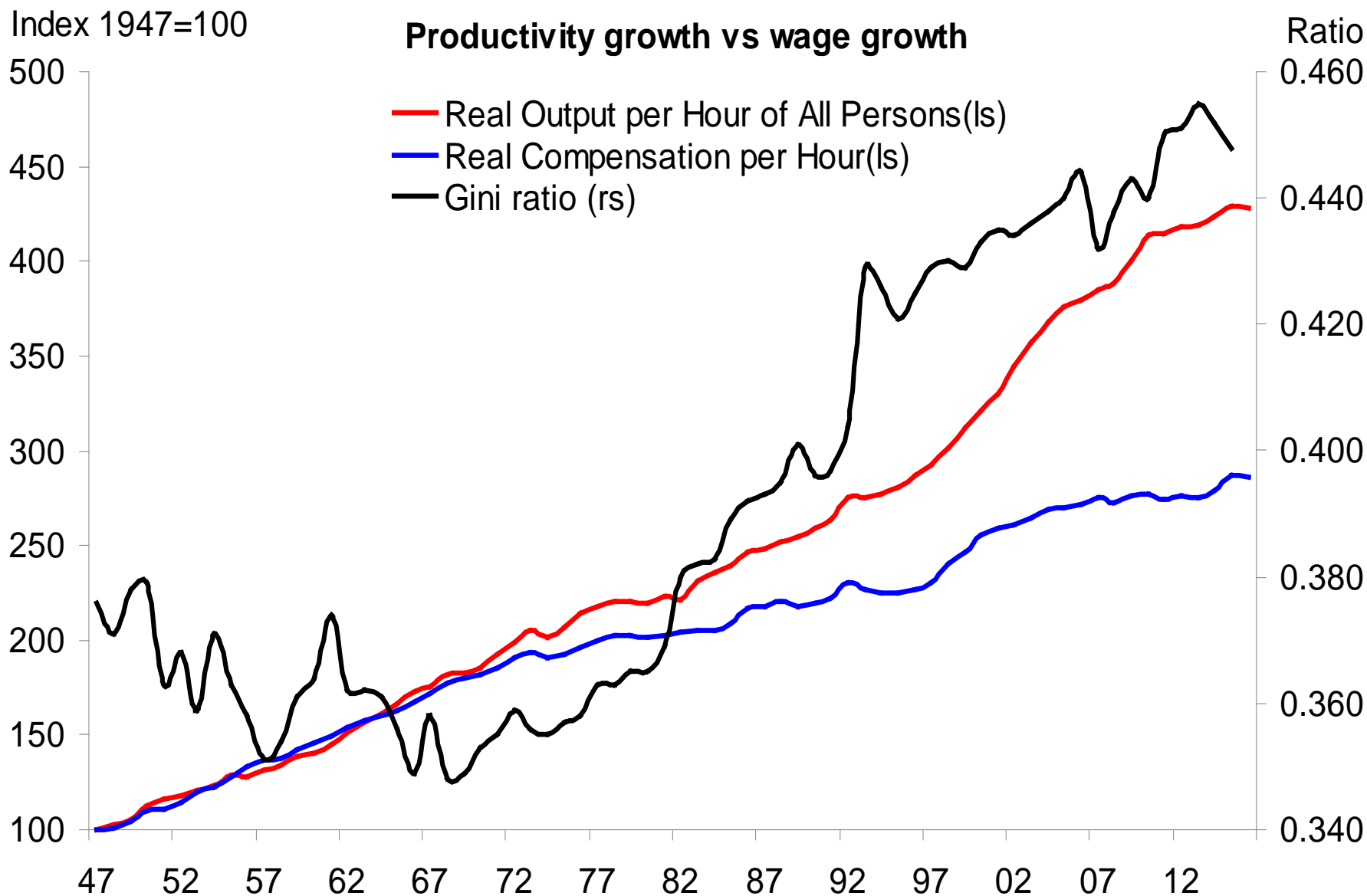


Total money earnings of US population in 2015 by educational attainment



Source: Census, DB Global Markets Research

Disconnect between productivity and wage growth since 1970s contributed to higher inequality in the U.S



Source: BLS, Census, Haver Analytics, DB Global Markets Research

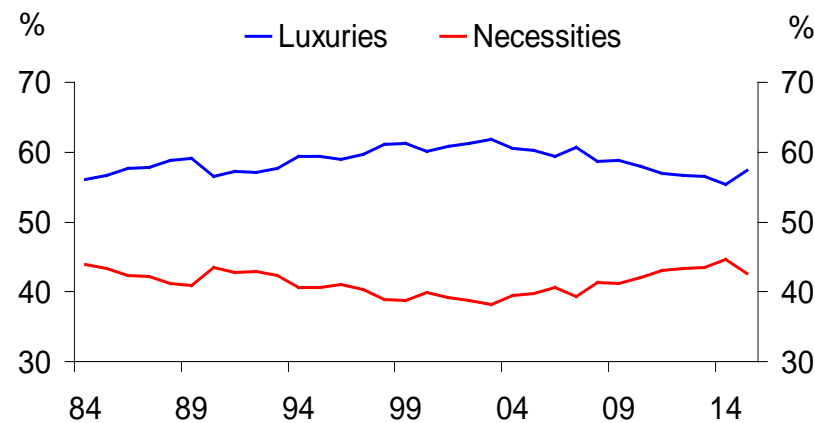
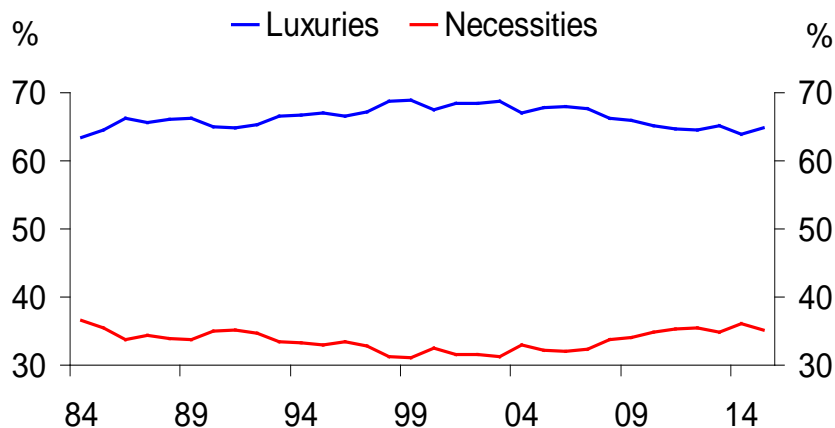


Spending on luxuries and necessities by income

Nominal consumption shares in total expenditure by income quintile

Highest

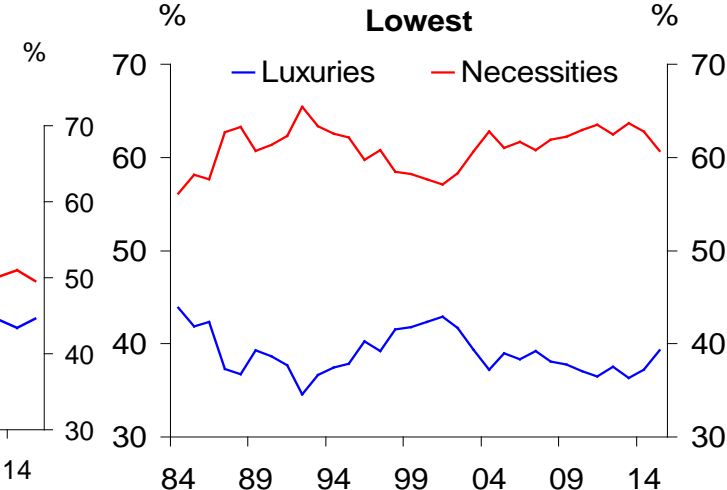
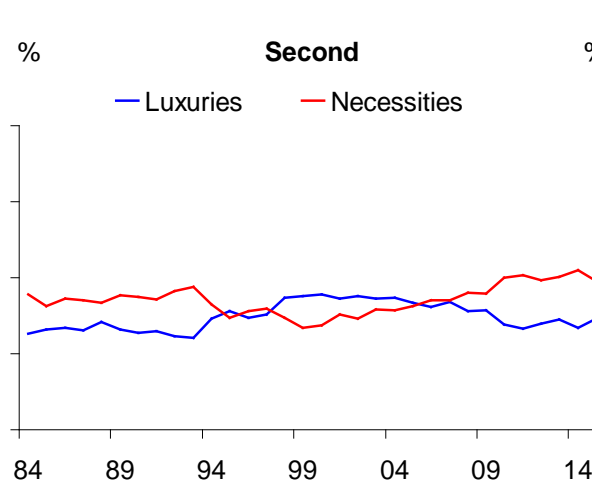
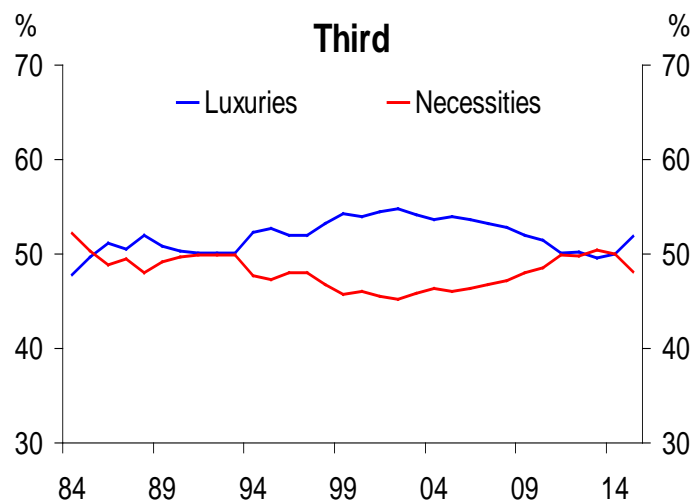
Fourth



Third

Second

Lowest



Luxuries are defined as goods or services consumed in greater proportions as a person's income increases. Specifically luxuries are: Food away from home, Owned dwellings, Household furnishings, equipment, Vehicles, Cash contributions, Entertainment, Personal insurance, pensions, Other vehicle expenses, Public transportation, and Other lodging.

Necessities are defined as goods or services whose consumption is proportionately less as a person's income increases. Specifically, necessities are: Food at home, Rented dwellings, Utilities, fuels, public services, Healthcare, Education, Personal care, Tobacco, smoking products, Gas and motor oil, Housekeeping supplies, Alcoholic beverages, Reading, and Apparel and services.

Source: Consumer Expenditure Survey BLS, Haver Analytics, DB Global Markets Research

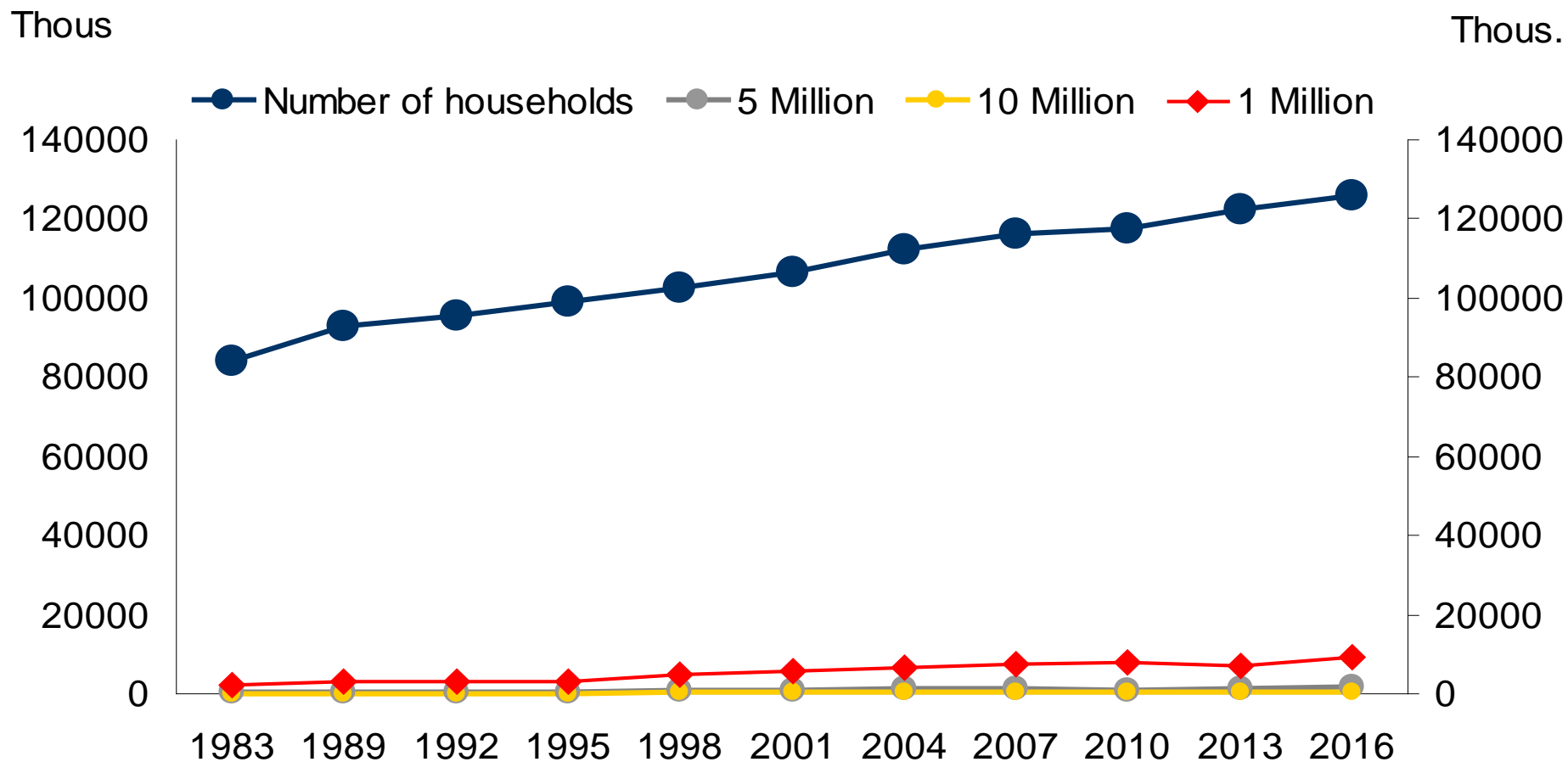


US wealth inequality today and over time



600,000 households have net worth of more than \$10mn

The Number of Households (in 1,000s) with Net Worth Equal to or Exceeding (in 1995\$):

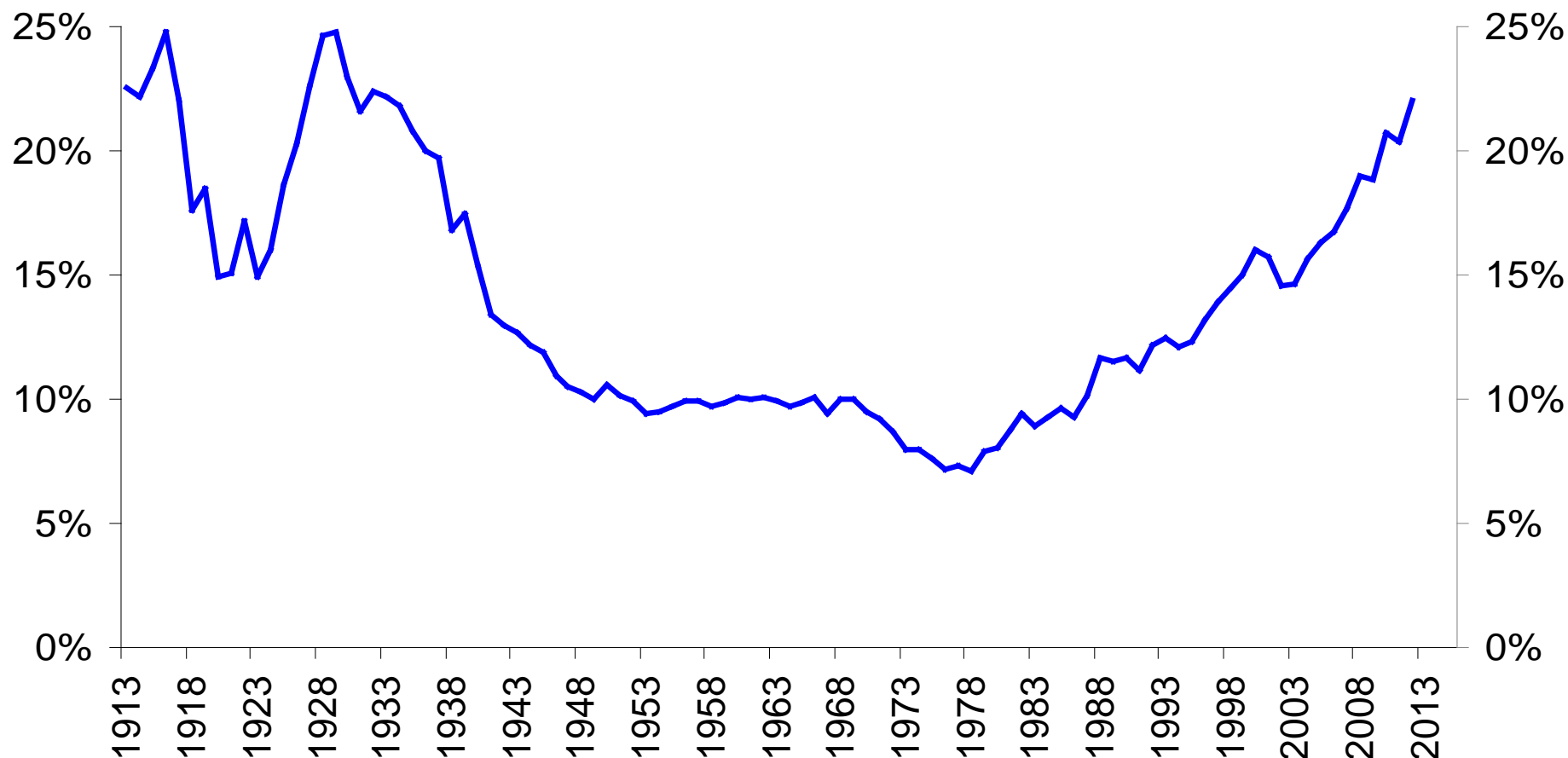


Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



Wealth inequality has also increased

Top 0.1% (above \$20 million) Wealth Share in the United States, 1913–2012



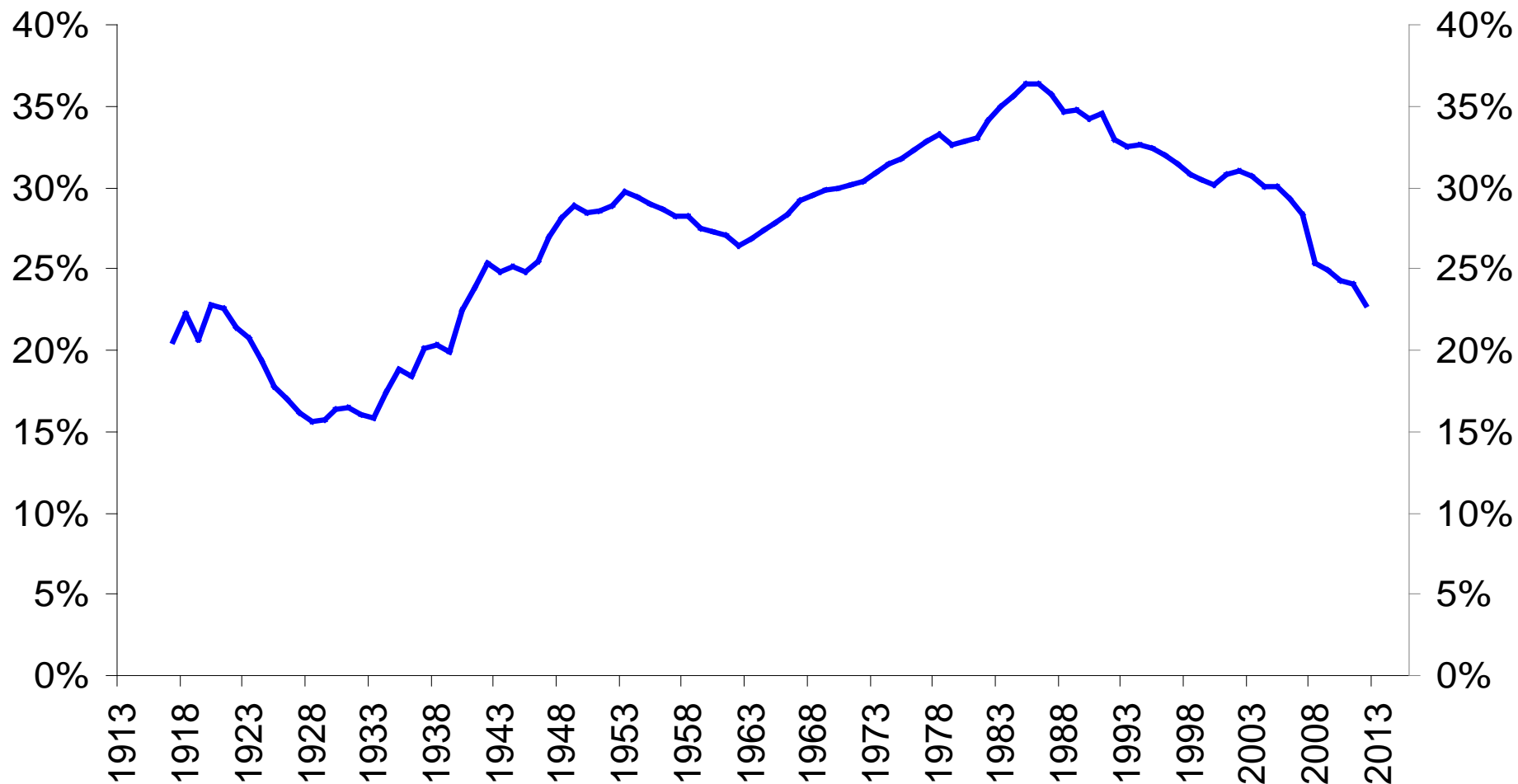
Note: Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Source: Atkinson, Piketty and Saez. (2015)., DB Global Markets Research

Share of wealth owned by the bottom 90% has gone down



Bottom 90% Wealth Share in the United States, 1917–2012



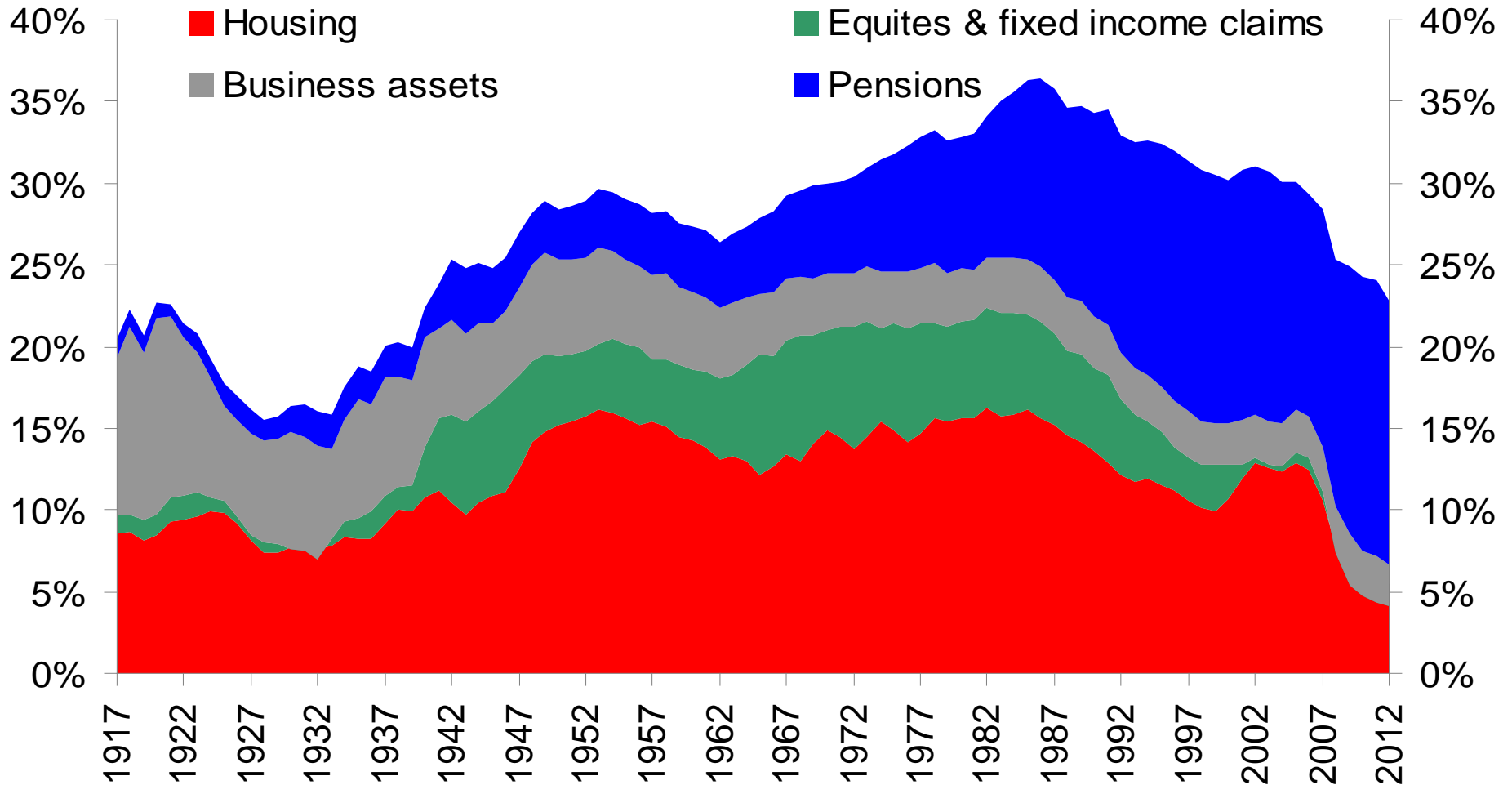
Note: Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Source: Atkinson, Piketty and Saez. (2015)., DB Global Markets Research

Composition of wealth for the bottom 90%



Composition of the Bottom 90% U.S. Wealth Share



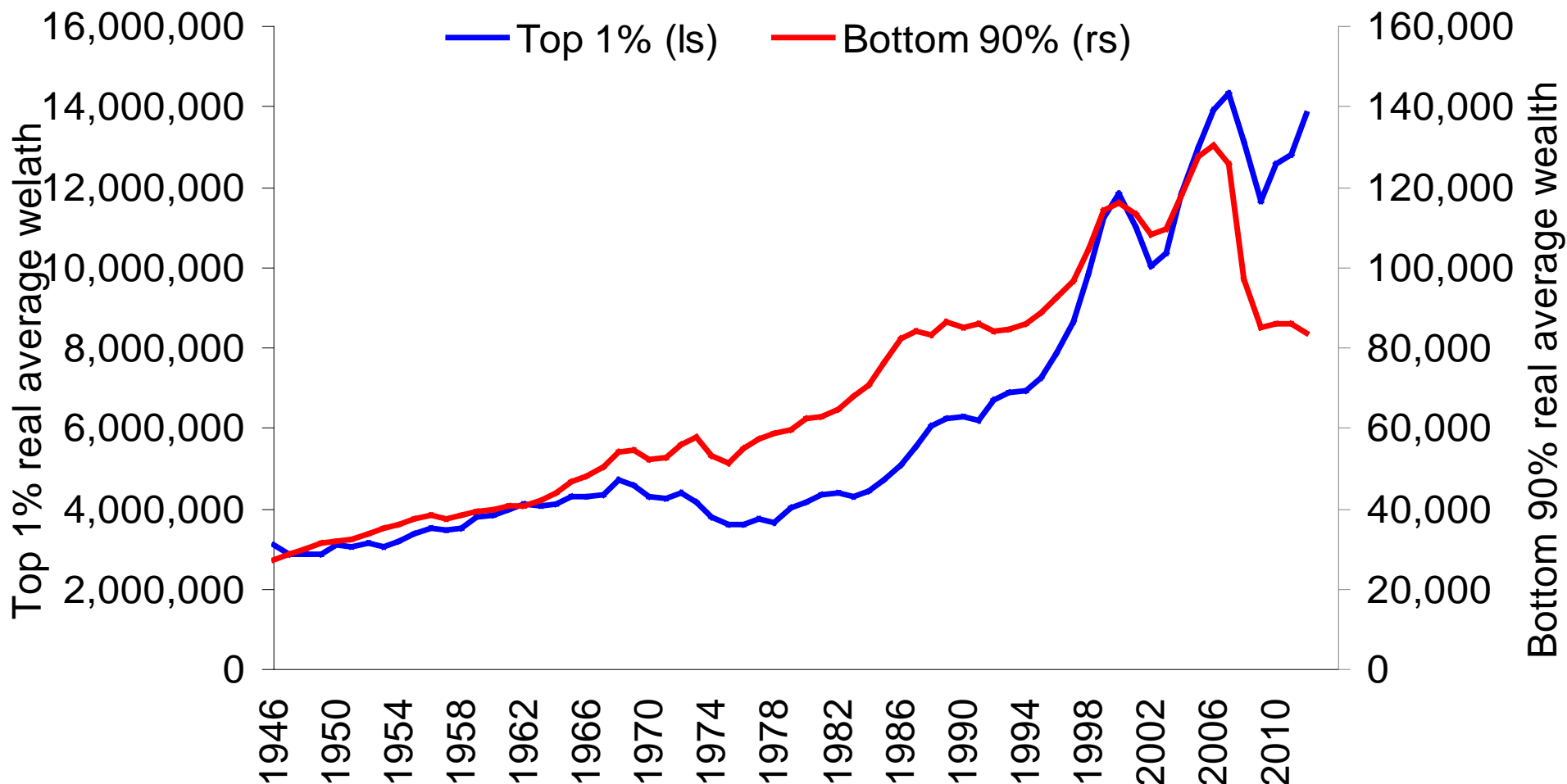
Note: Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Source: Atkinson, Piketty and Saez. (2015)., DB Global Markets Research

Average wealth for the Top 1% and the Bottom 90%



Real average wealth of bottom 90% and top 1% families

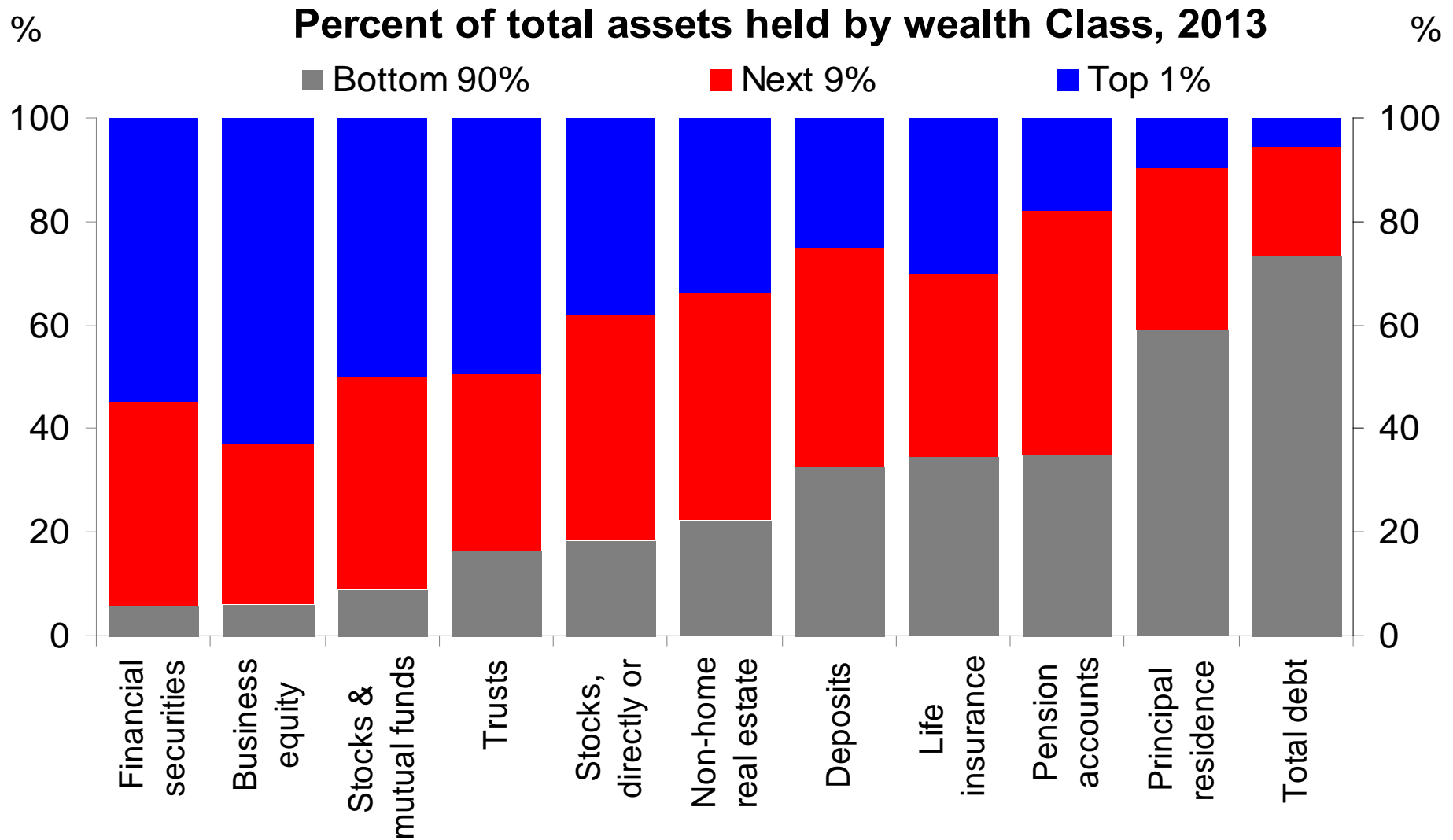


Real values are obtained by using the GDP deflator, 2010 dollars.

Source: Saez and Zucman (2016)., DB Global Markets Research



Types of assets held across wealth distribution



Households are classified into wealth class according to their net worth. Brackets for 2013 are:
 Top one percent: Net worth of \$7,766,500 or more.
 Next 9 percent: Net worth between \$980,900 and \$7,766,500.
 Bottom 90 Percent: Net worth less than \$908,900.

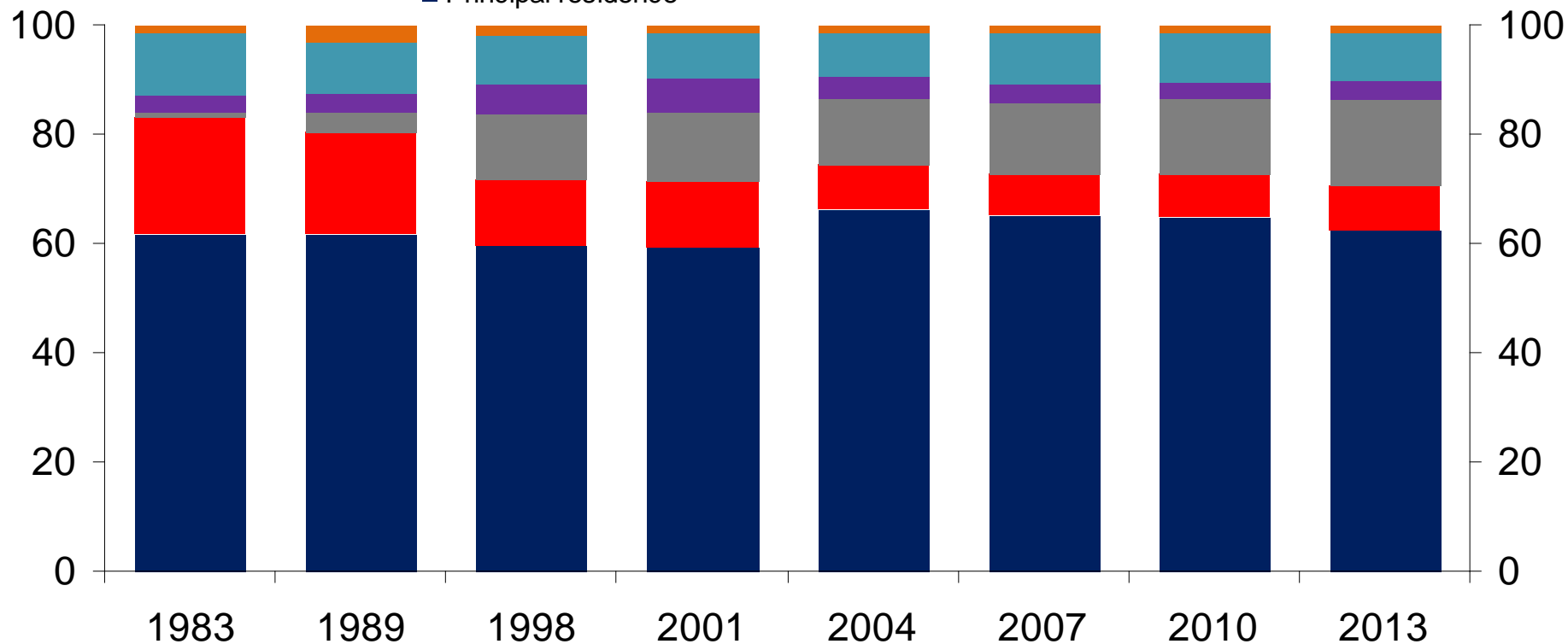
Source: Edward N. Wolff, (2014), Survey of Consumer Finances, DB Global Markets Research



Wealth composition for middle income America

Composition of household wealth of the middle three wealth quintiles, 1983-2013

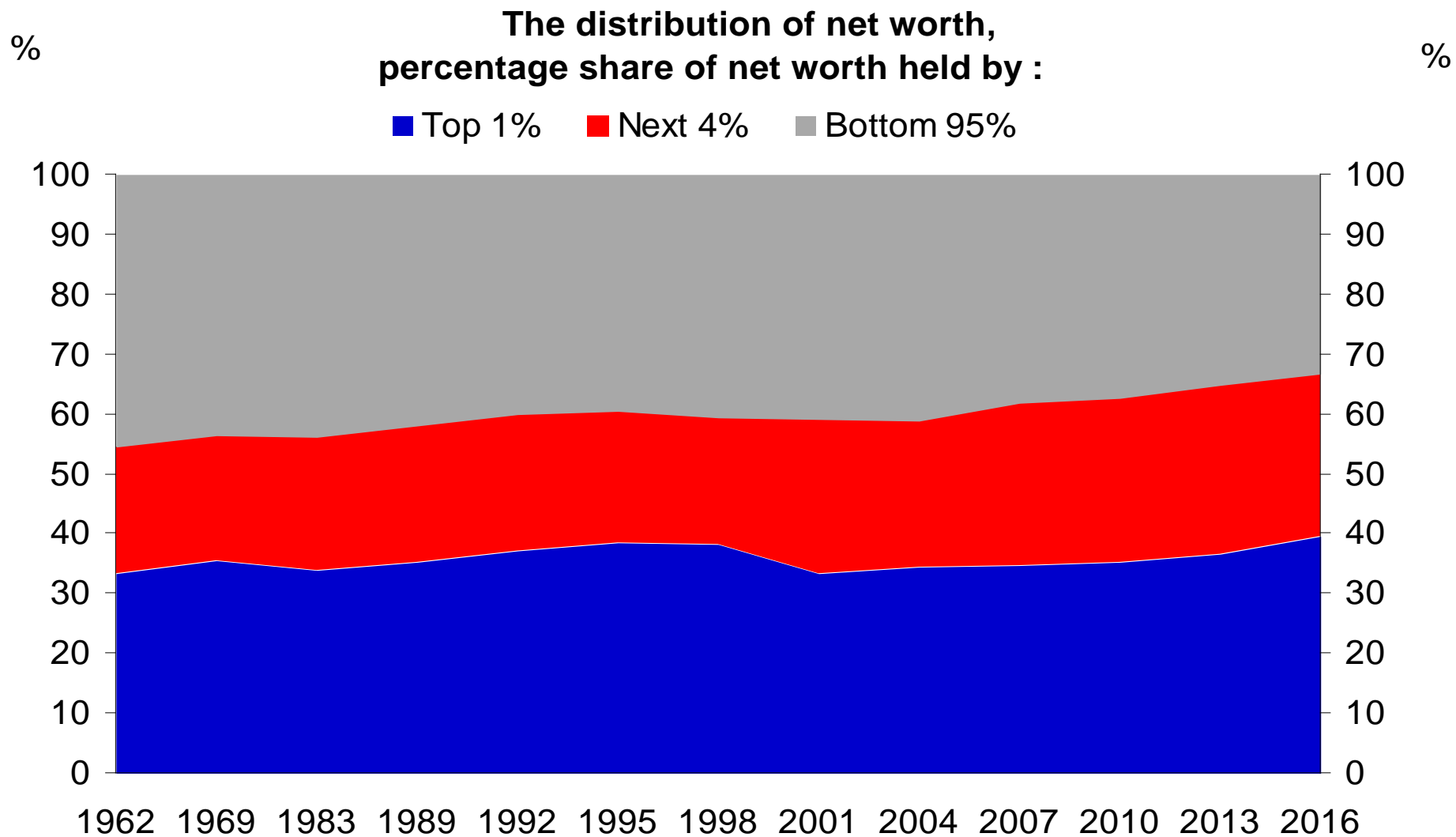
- Miscellaneous assets
- Unincorporated business equity
- Corporate stock, financial securities, mutual funds, and personal trusts
- Pension accounts
- Liquid assets
- Principal residence



Source: Edward N. Wolff, (2014), Survey of Consumer Finances, DB Global Markets Research



Top 5% of population hold 65% of net worth

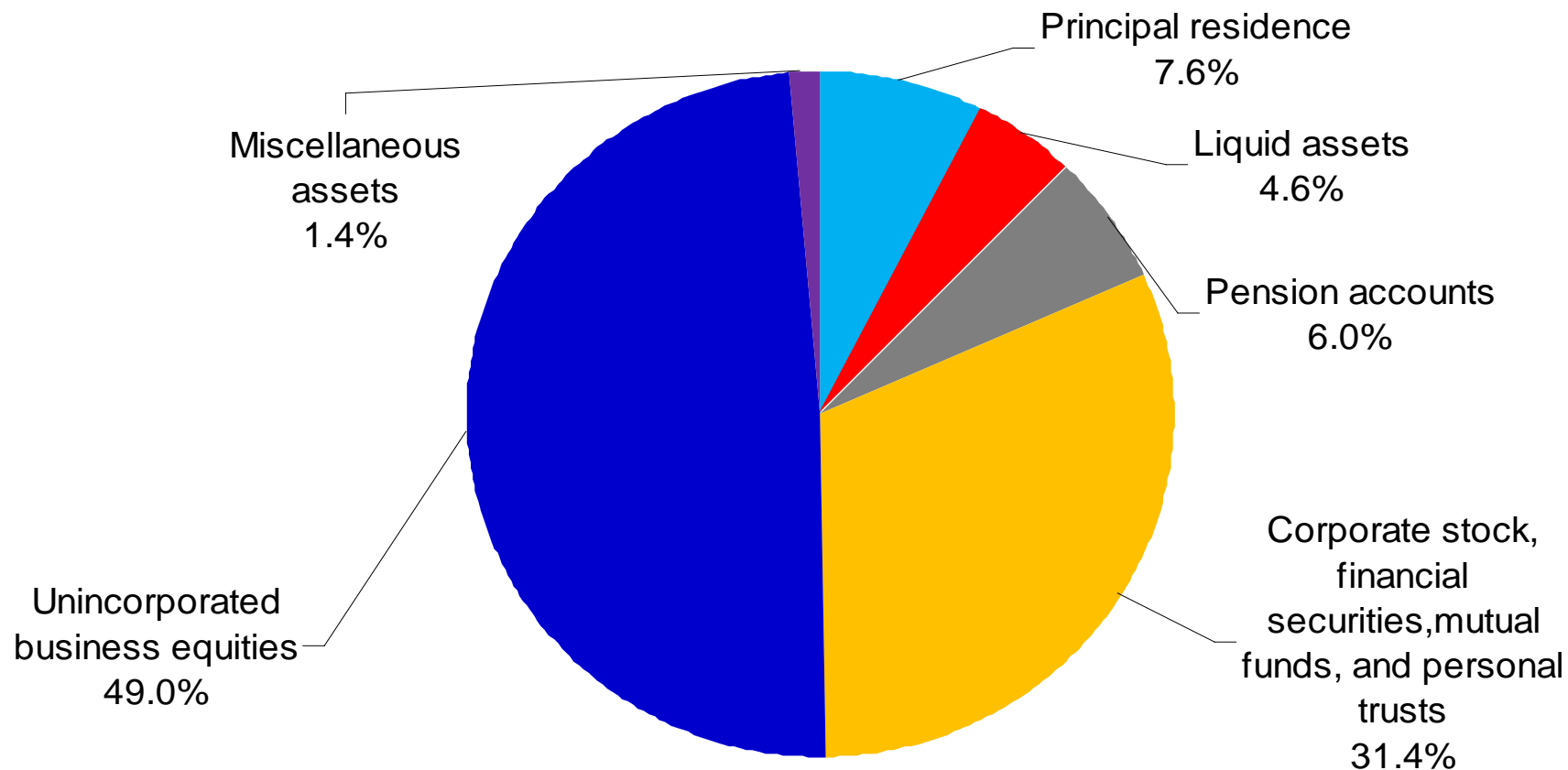


Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



Top 1%: Composition of gross assets

Composition of household wealth by wealth class, 2016: Top one percent (percent of gross assets)

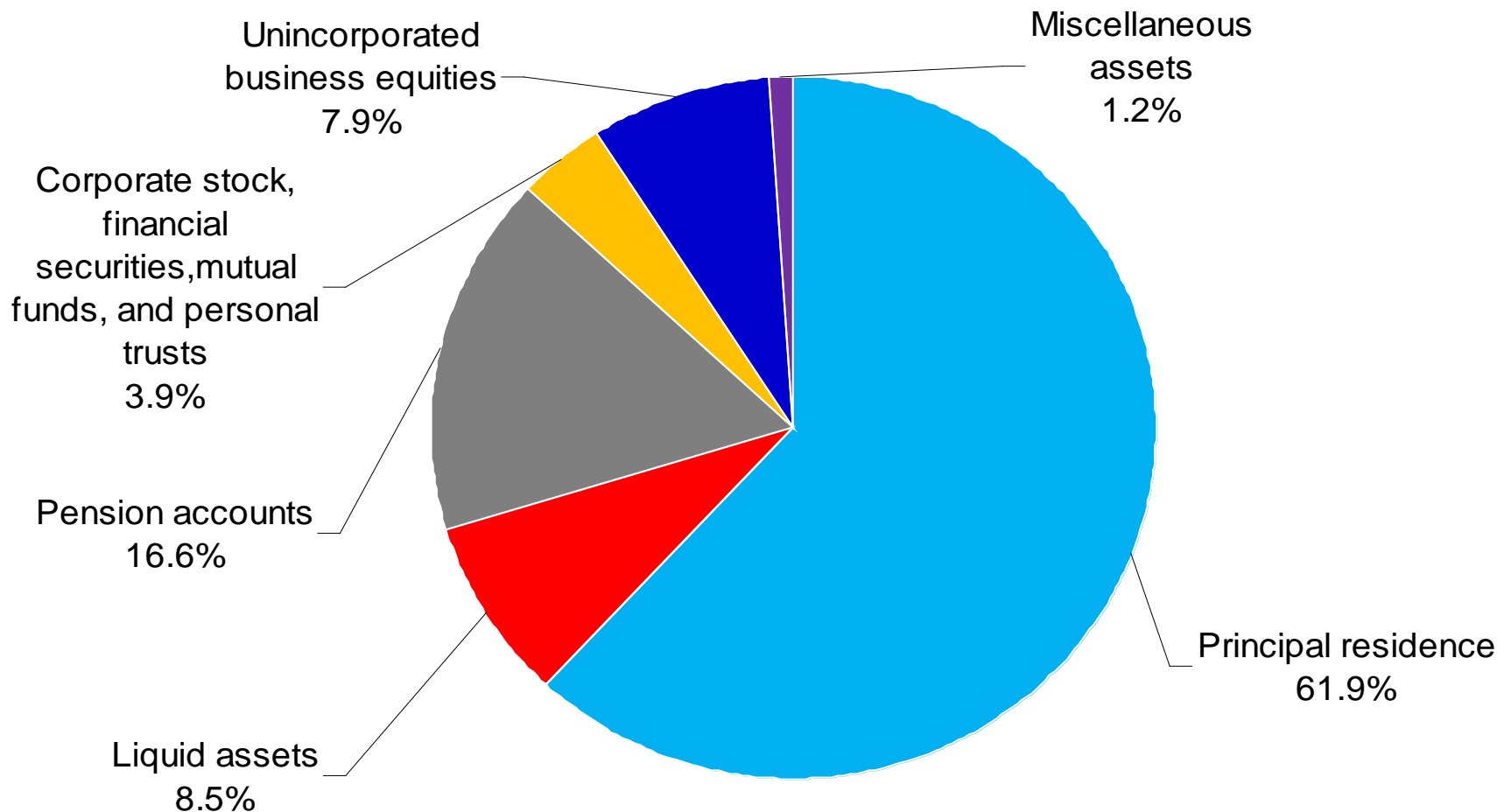


Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



Middle 3 quintiles: Composition of gross assets

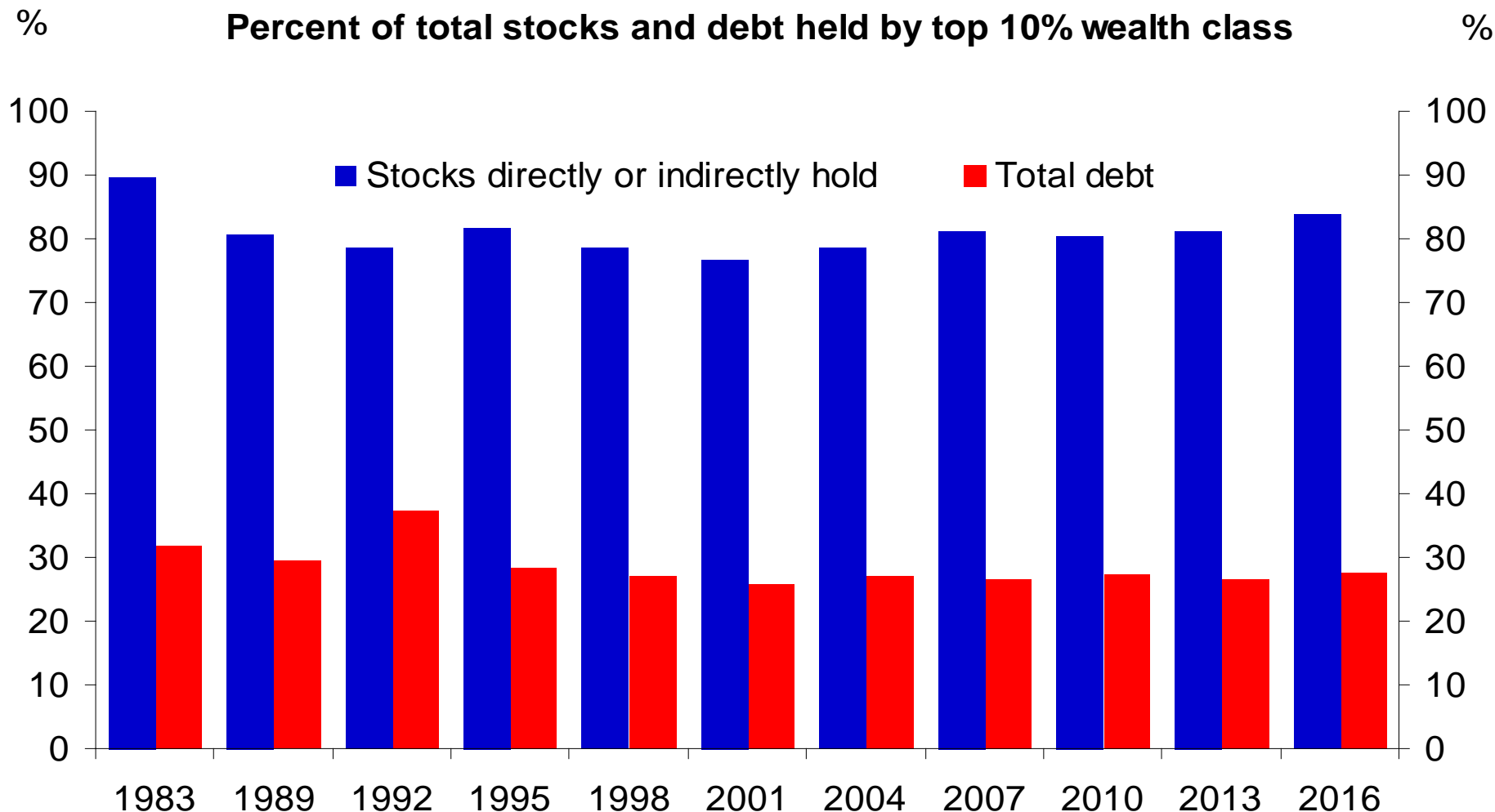
Composition of household wealth by wealth class, 2016: middle 3 quintiles (percent of gross assets)



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



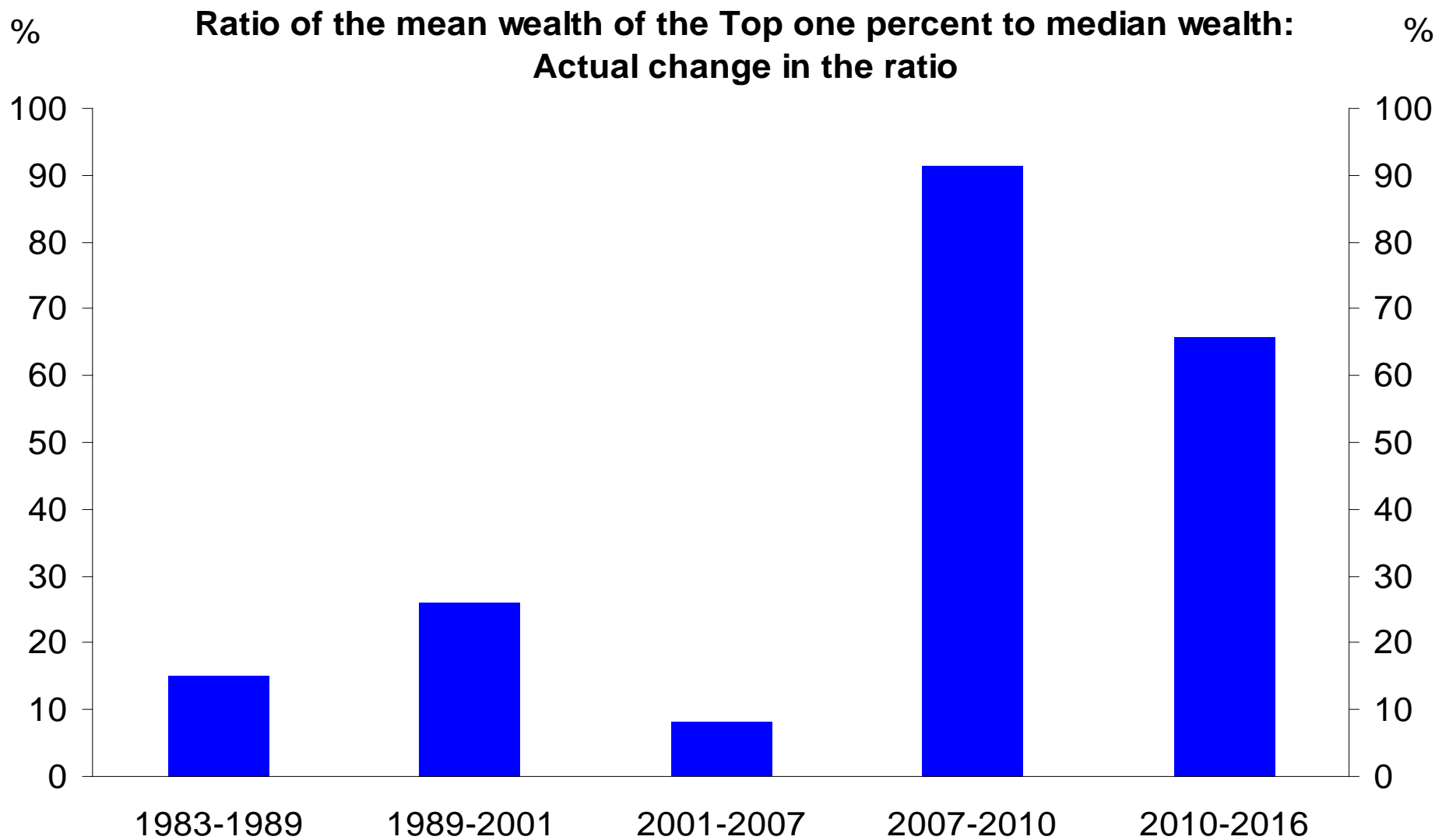
The Top 10% own more stocks



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



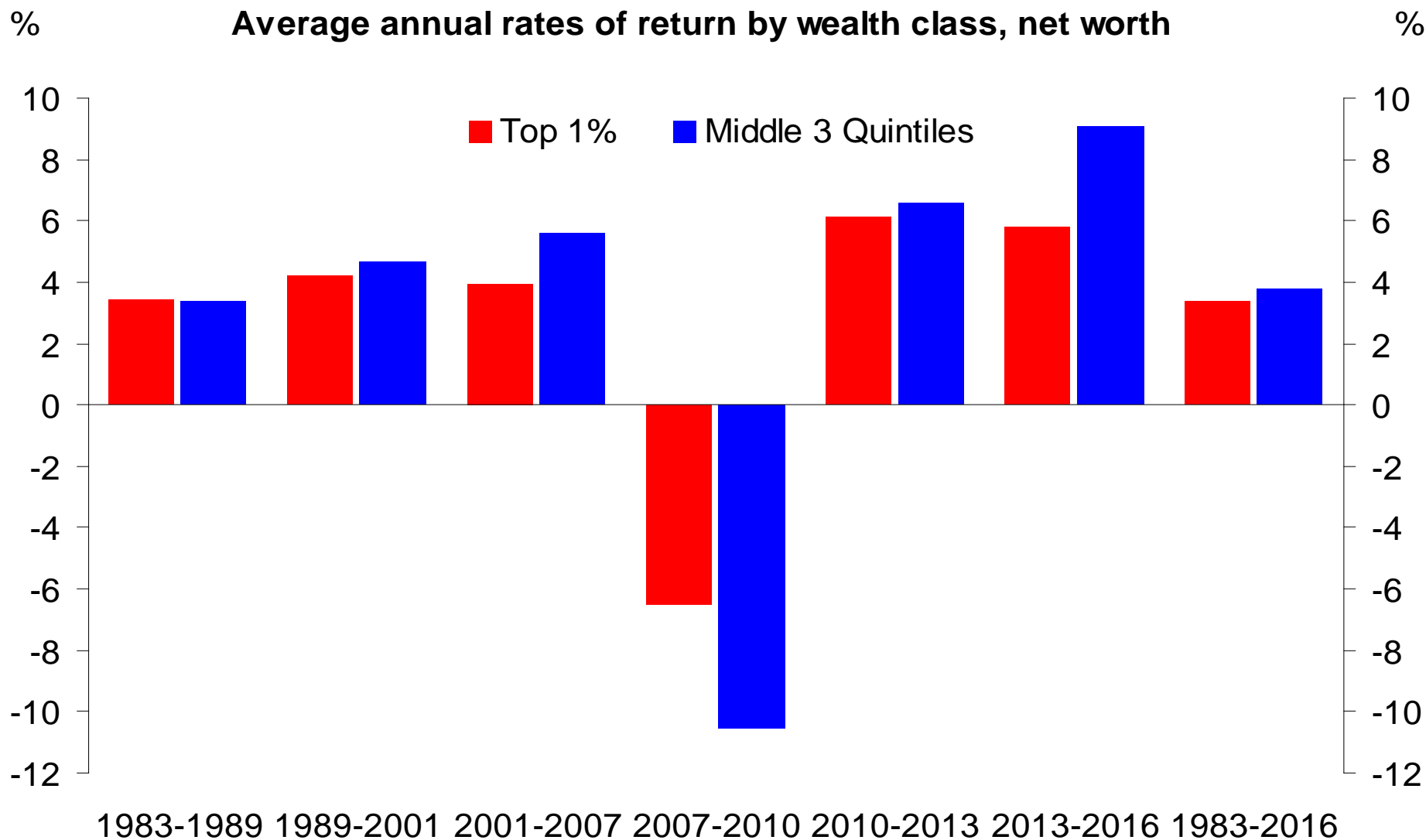
Mean wealth of the Top 1% divided by median wealth



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



Middle 3 quintiles have had higher returns than the Top1% since the crisis

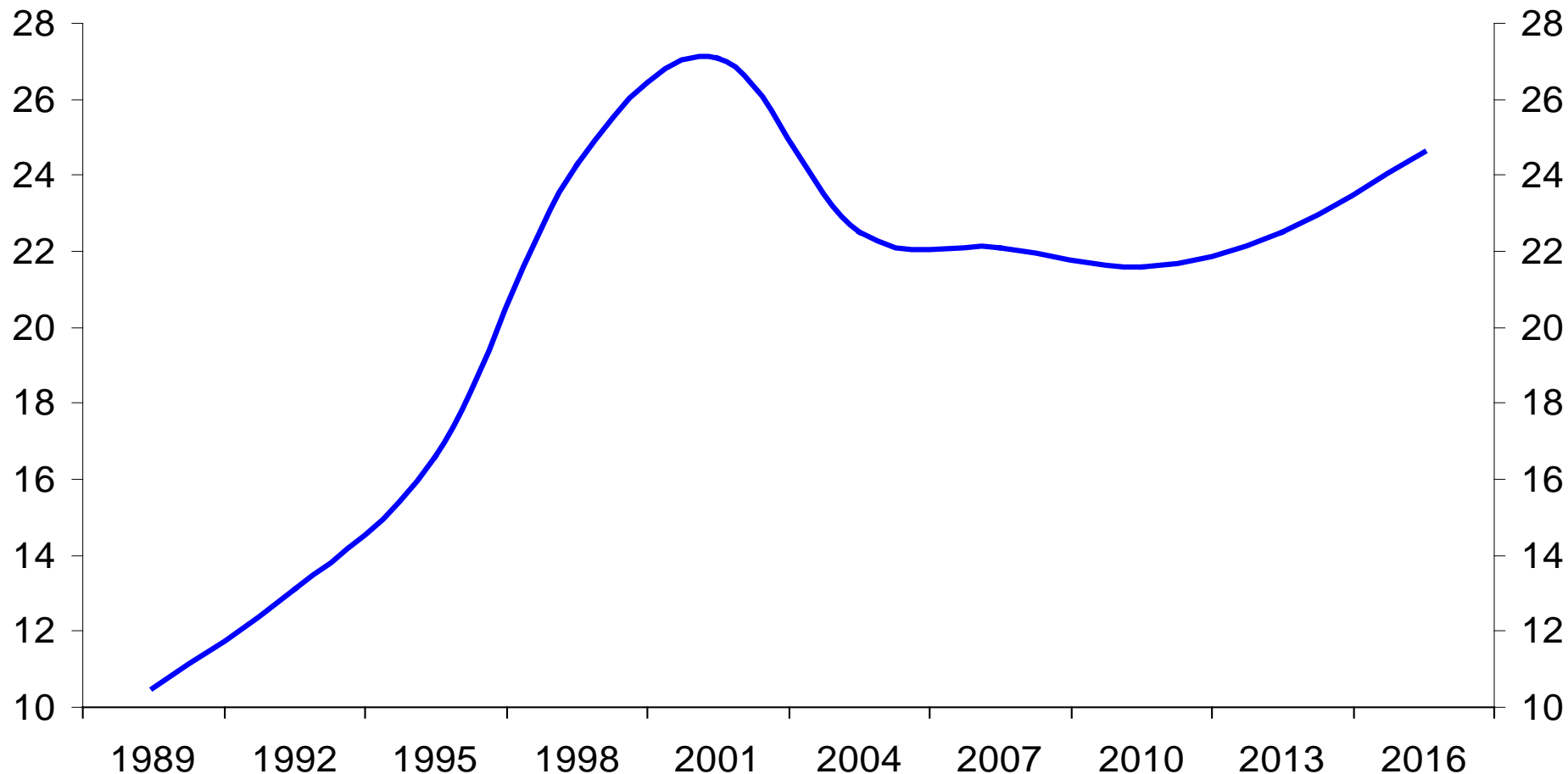


Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research



25% of households hold more than \$25K in stocks

Percent of households holding stocks: Stock of \$25,000 or more

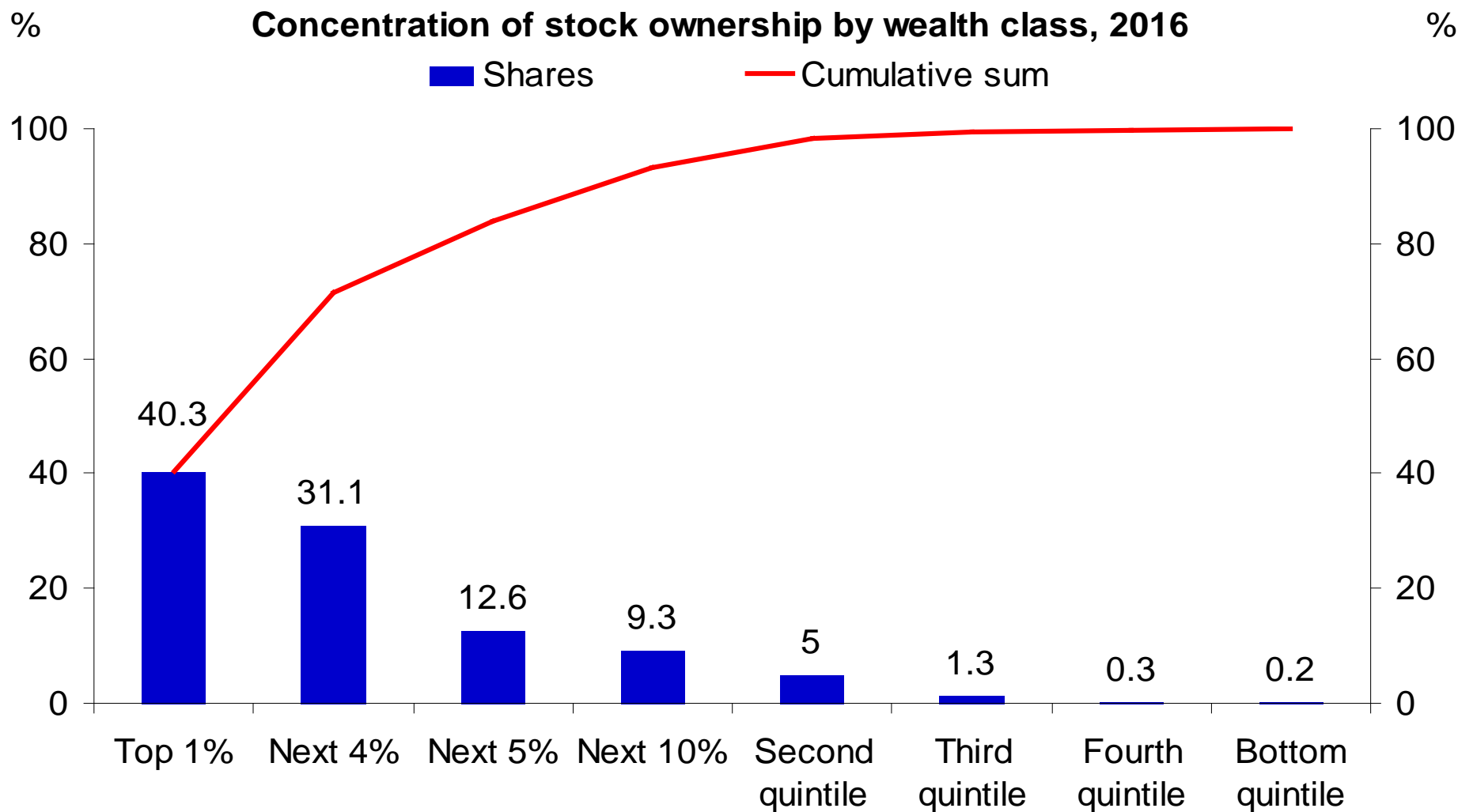


*1995 dollars

Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research

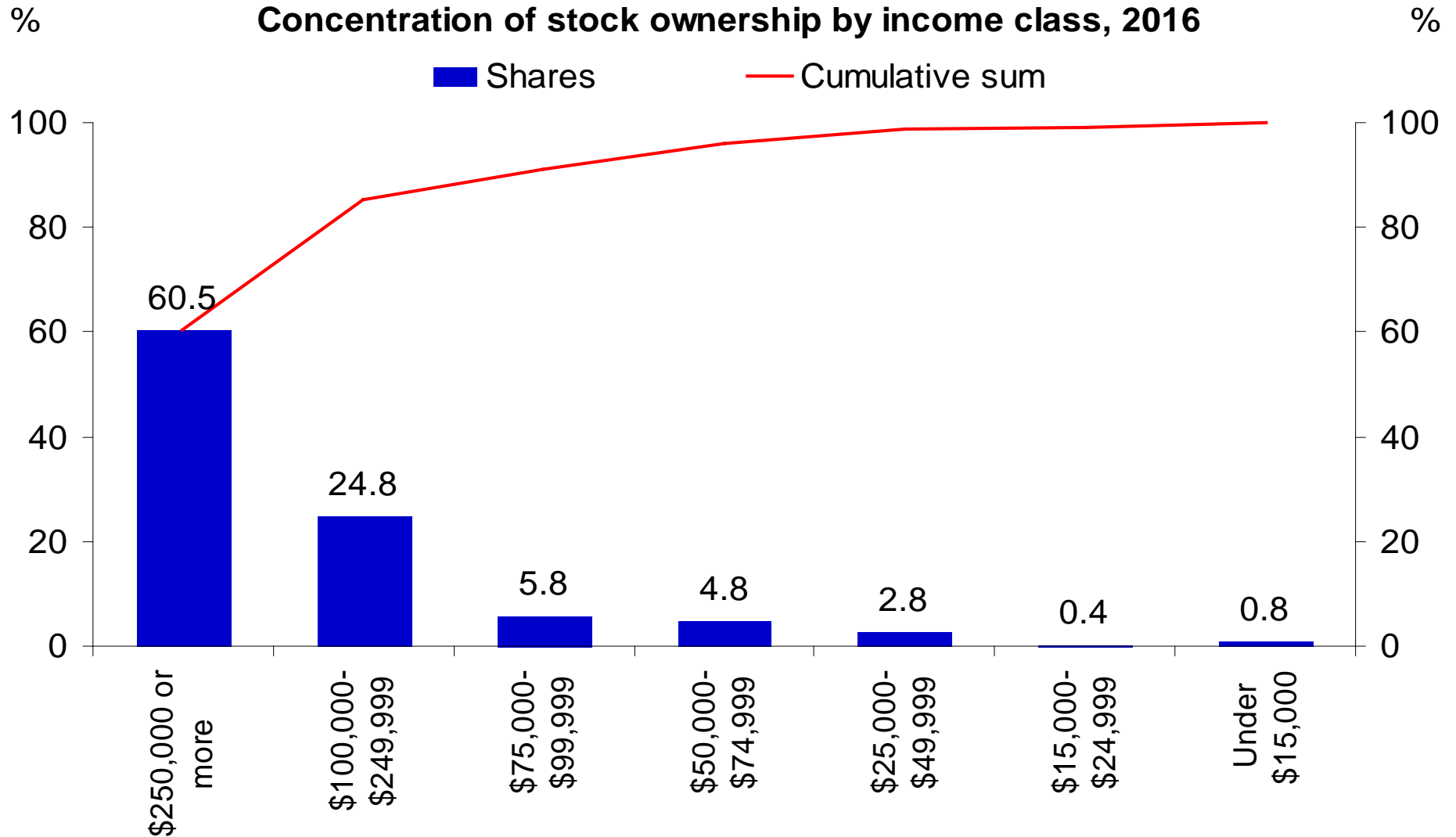


Top 1% own 40% of stocks held by households



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research

Households making more than \$250K own 60% of stocks held by households



Source: Edward N. Wolff (2017). Survey of Consumer Finances, DB Global Markets Research

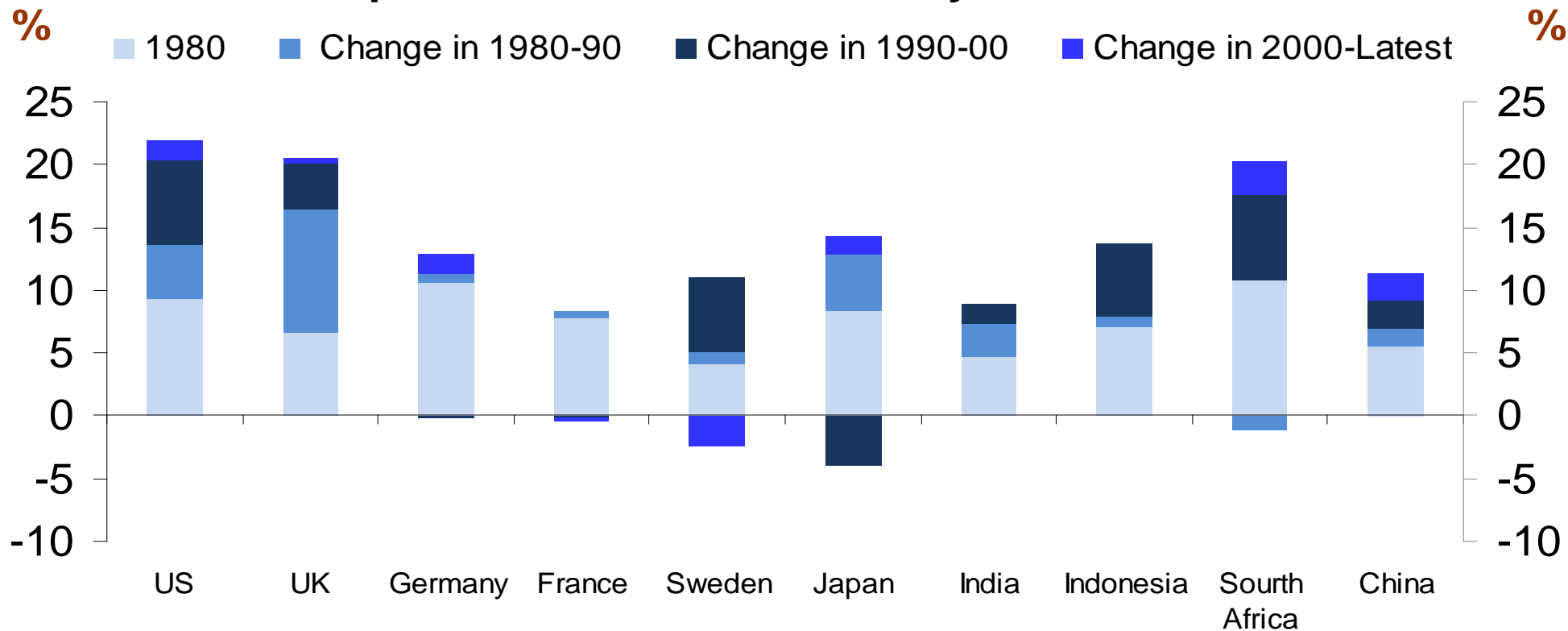


Comparing US inequality with inequality in other countries

The rich has gotten richer over time in most countries



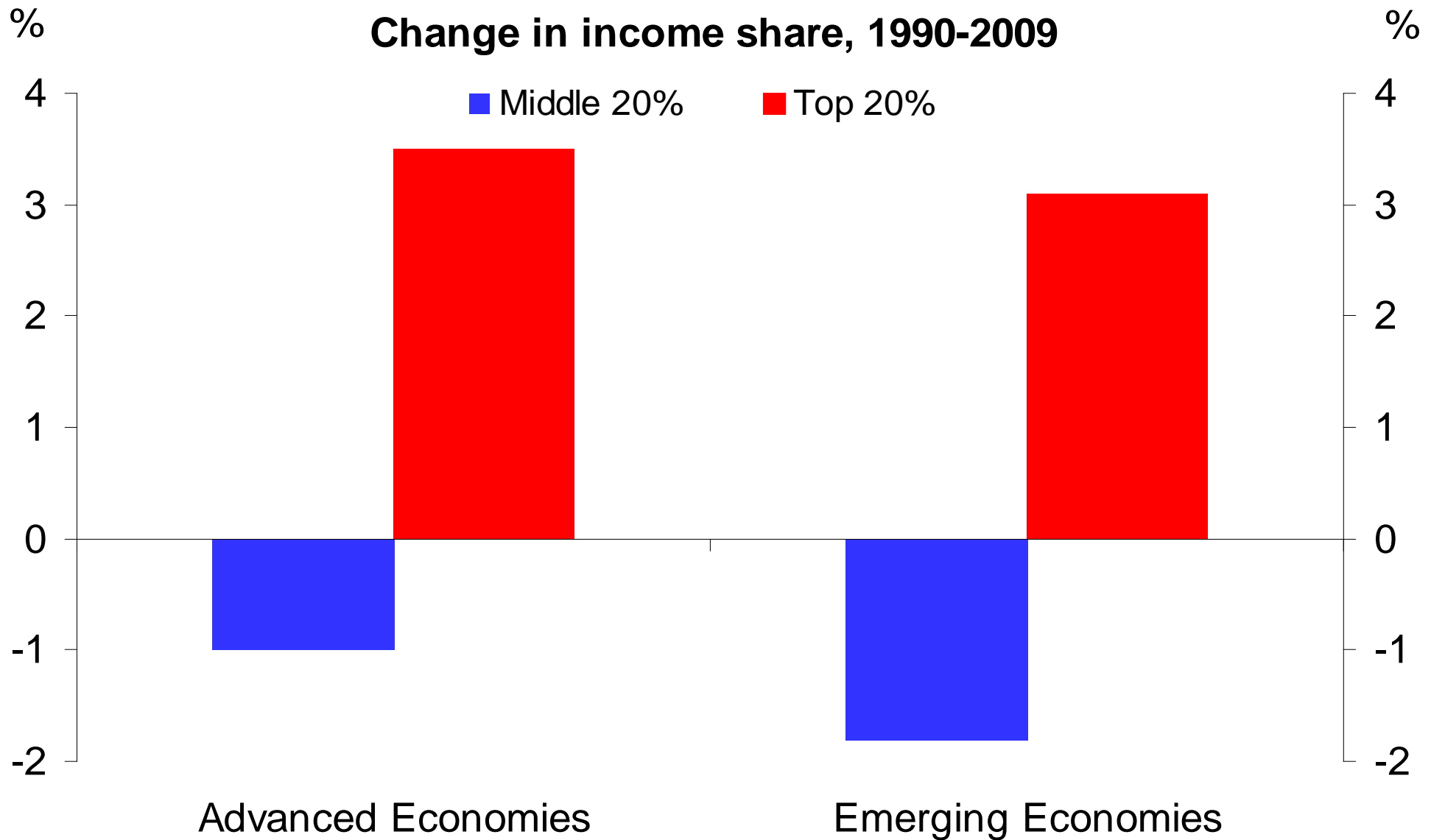
Top 1% share of total economy-wide income



Note: Total income is defined as the sum of all income items reported on income tax returns, before any deduction.

Source: WID database, DB Global Markets Research

Incomes of the top 20% increased while incomes of middle 20% decreased

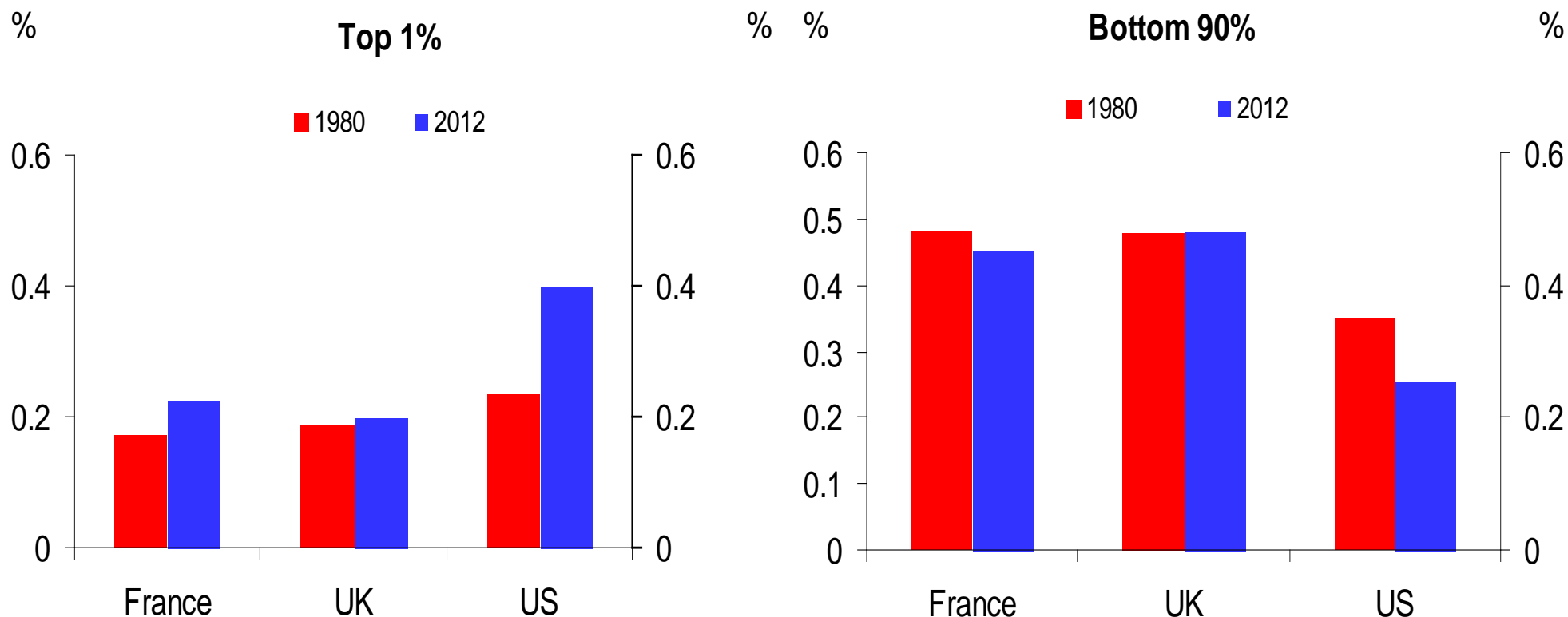


Source: WID database, DB Global Markets Research



Comparing inequality in US with France and UK

The top 1% and bottom 90% wealth distribution

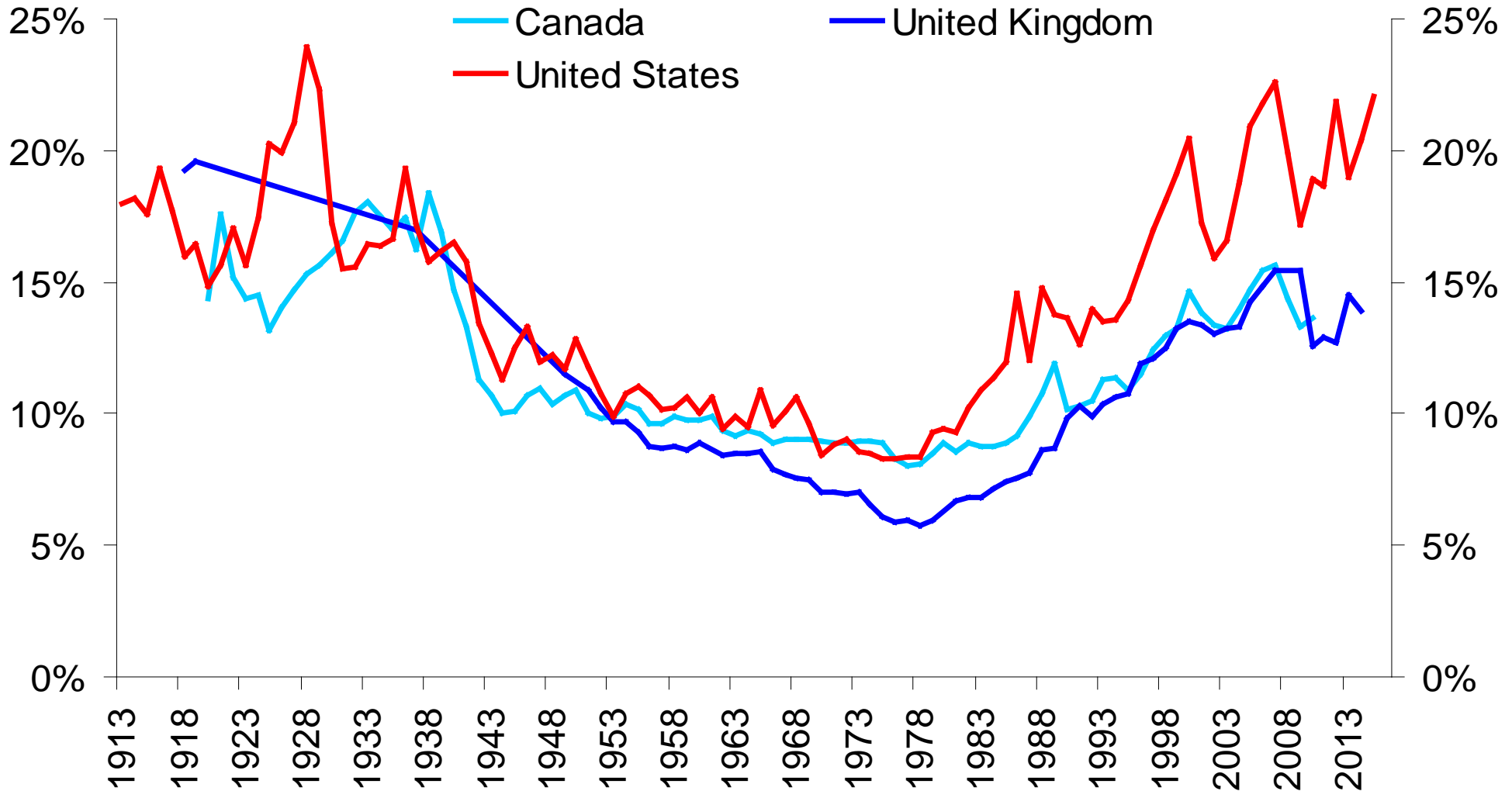


Source: WID database, DB Global Markets Research

U-shaped development in income inequality in English speaking countries



Top 1% Income Share: English Speaking Countries (U-shaped)

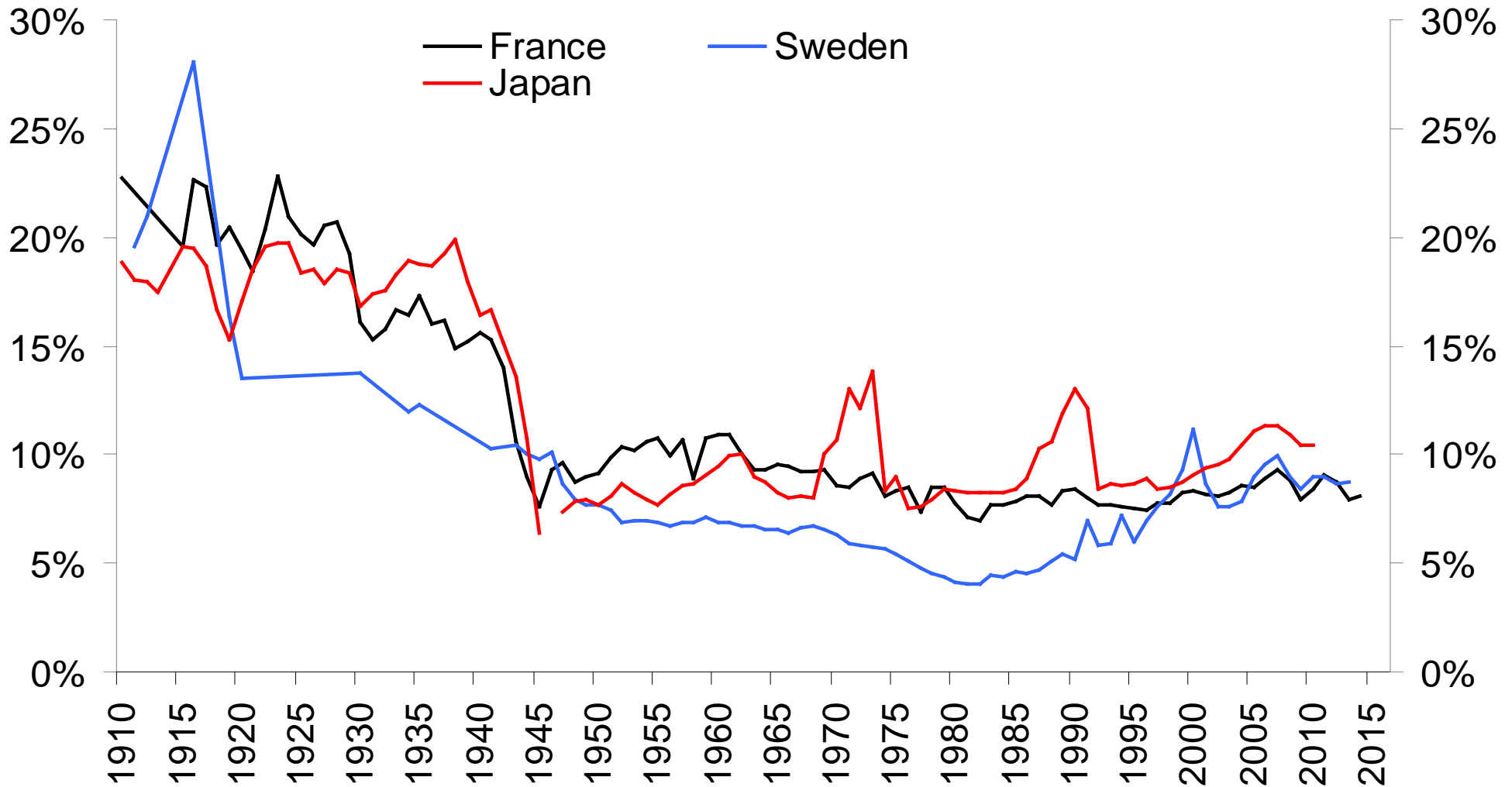


Source: WID database, DB Global Markets Research

L-shaped development in income inequality in Europe and Japan



Top 1% Income Share: Continental Europe and Japan (L-shaped)

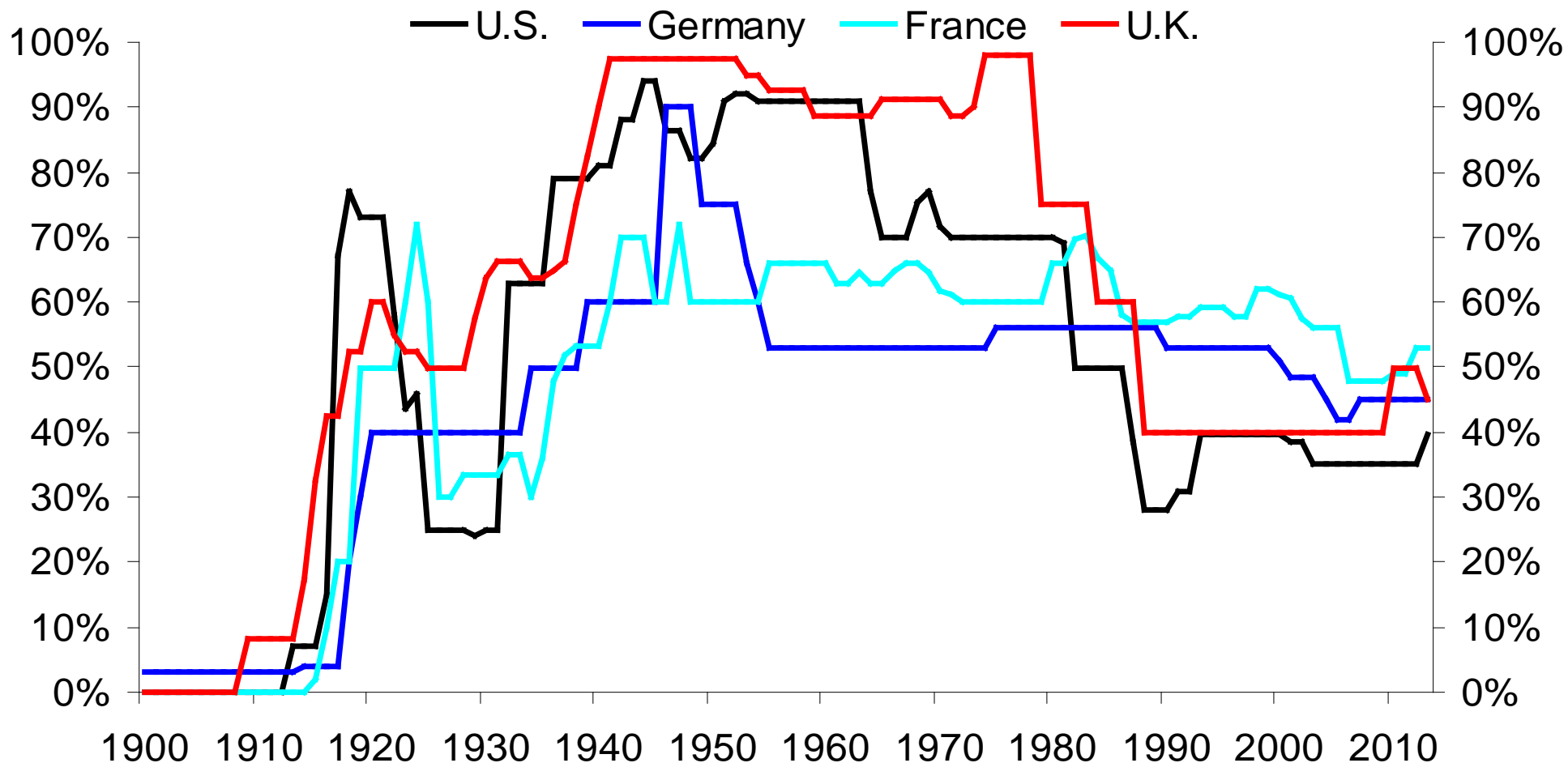


Source: WID database, DB Global Markets Research



Marginal tax rates down in recent decades

Top income tax rates, 1900-2013 Marginal tax rate applying to the highest incomes

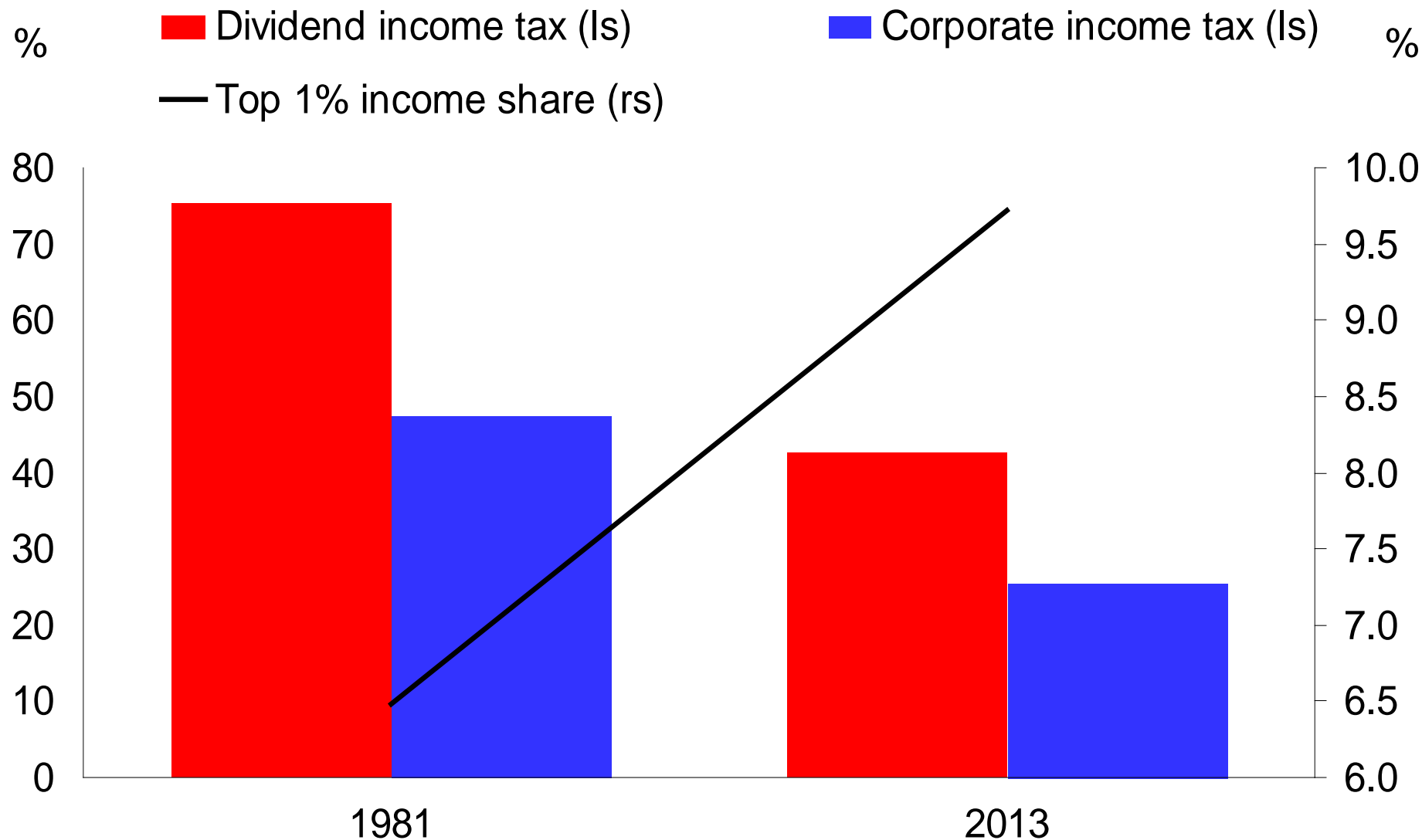


The top marginal tax rate of the income tax (applying to the highest incomes) in the U.S. dropped from 70% in 1980 to 28% in 1988.

Source: Piketty (2014). Figure also appears in Piketty and Saez (2014)., DB Global Markets Research

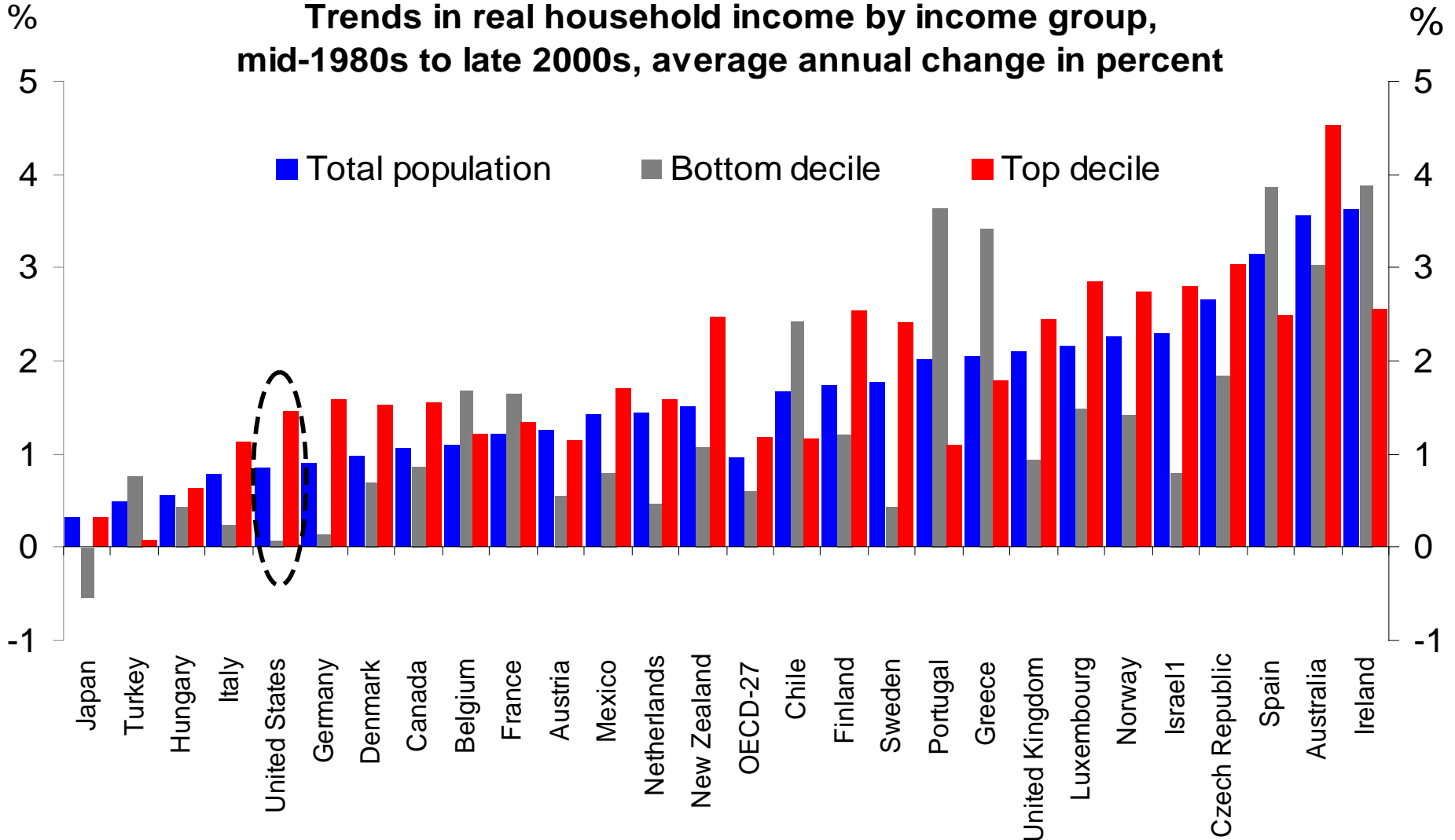


Other taxes affecting the top 1% have also fallen



Source: OECD Tax Database, OECD Income Database, DB Global Markets Research

Big differences in income growth across the income distribution



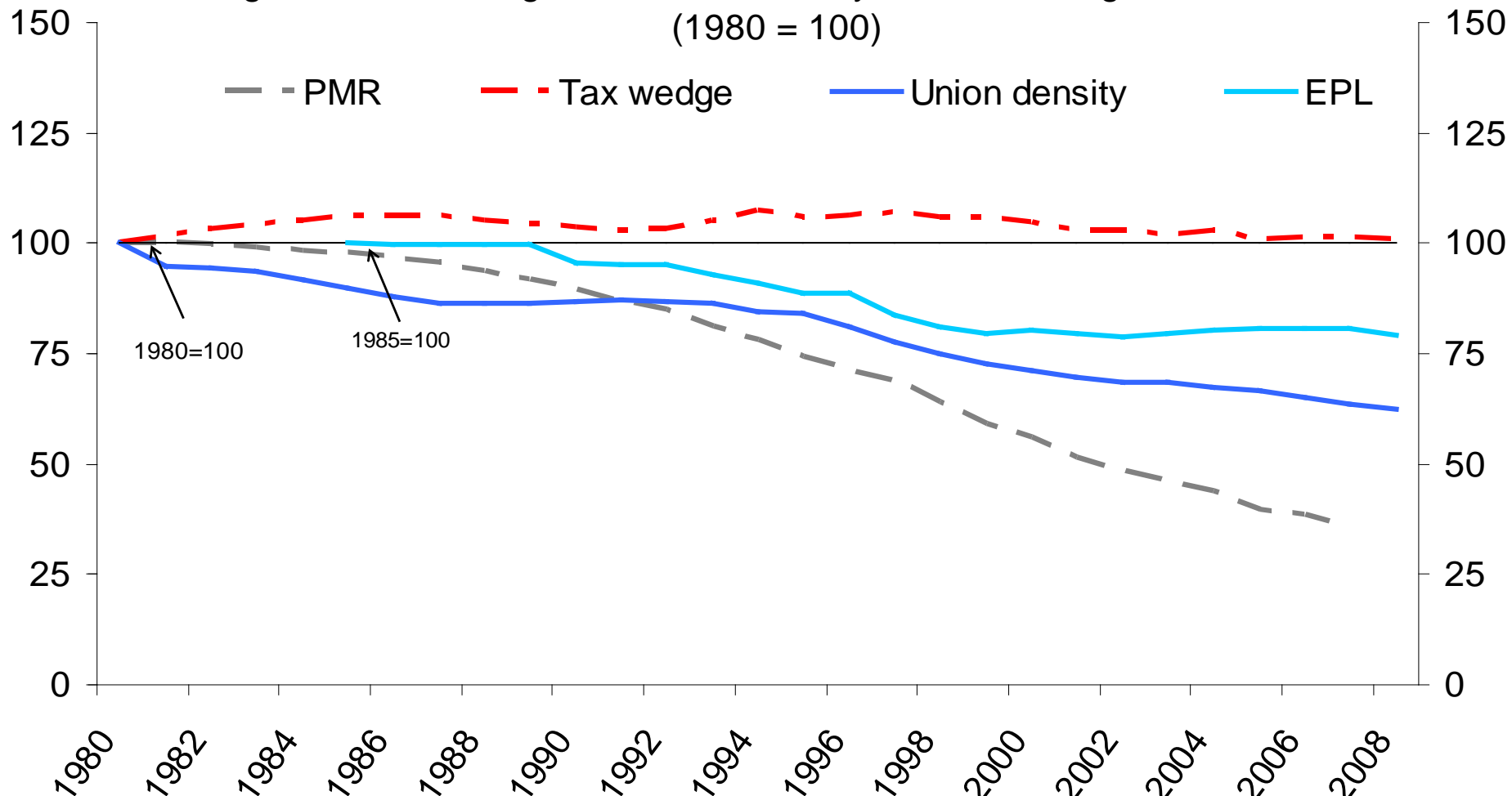
Note: Income refers to disposable household income, corrected for household size and deflated by the consumer price index (CPI). Average annual changes are calculated over the period from 1985 to 2008, with a number of exceptions: 1983 was the earliest year for Austria, Belgium, and Sweden; 1984 for France, Italy, Mexico, Turkey and the United States; 1986 for Finland, Luxembourg, and Norway; 1987 for Ireland; 1988 for Greece; 1991 for Hungary; 1992 for the Czech Republic; 1995 for Australia and Portugal and 1996 for Chile. The latest year for Chile was 2009; for Denmark, Hungary, and Turkey it was 2007; and for Japan 2006. Changes exclude the years 2000 to 2004 for Austria, Belgium, Ireland, Portugal and Spain for which surveys were not comparable.

Source: OECD, DB Global Markets Research

Product and labour market regulations and institutions became weaker



Developments in product market regulation, employment protection legislation, tax wedges and union density, OECD average, 1980-2008
(1980 = 100)



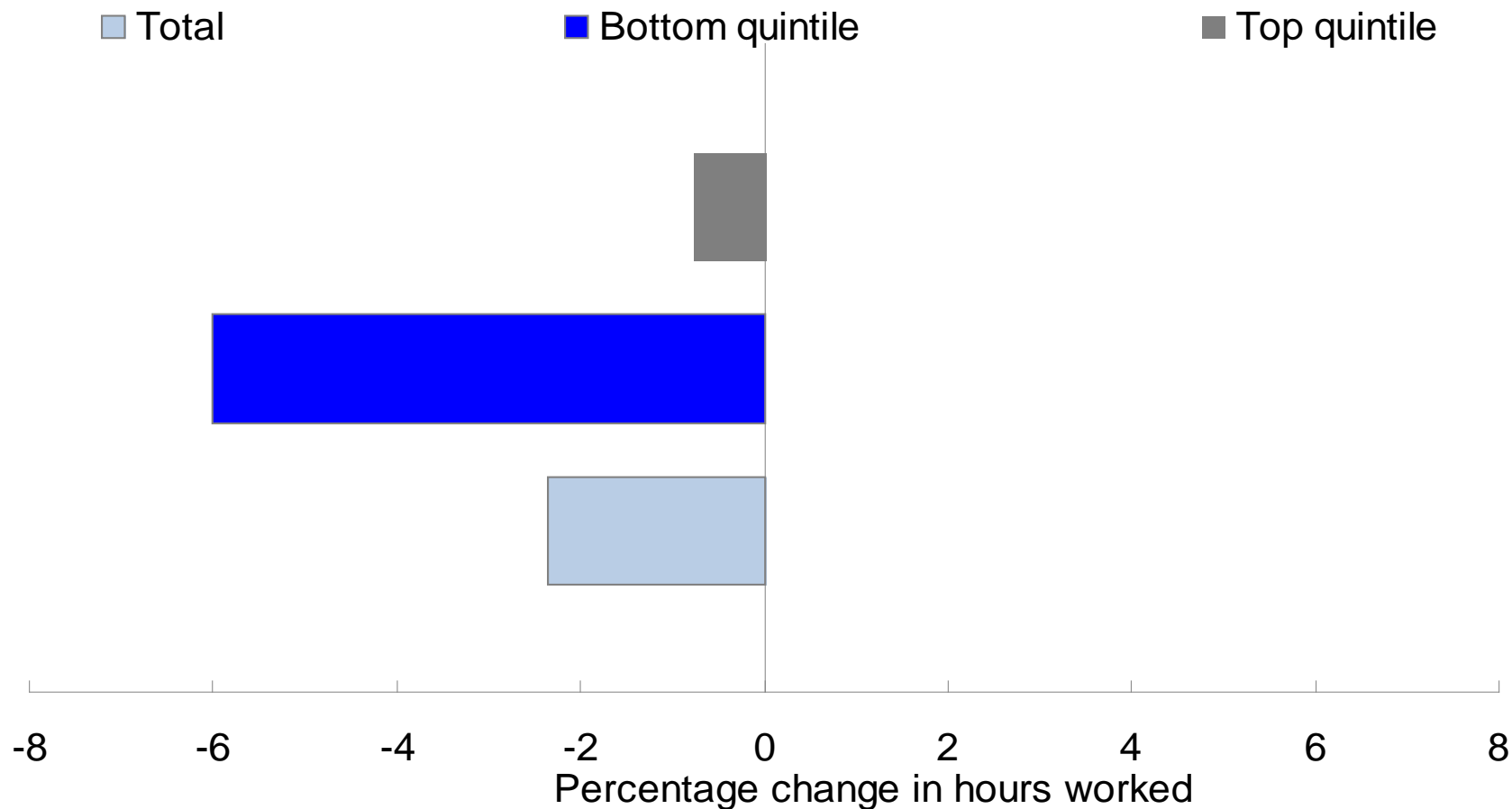
Note: "PMR" is a summary indicator for product market regulation. "EPL" is a summary indicator of the strictness of overall employment protection legislation (only available from 1985 onwards). "Tax wedge" refers to an average worker and is the sum of income tax and employees and employers payroll taxes as a percentage of labour costs. "Union density" is the number of union members as a proportion of all employees eligible to be members.

Source: OECD, DB Global Markets Research



Hours worked declined more among lower-wage workers

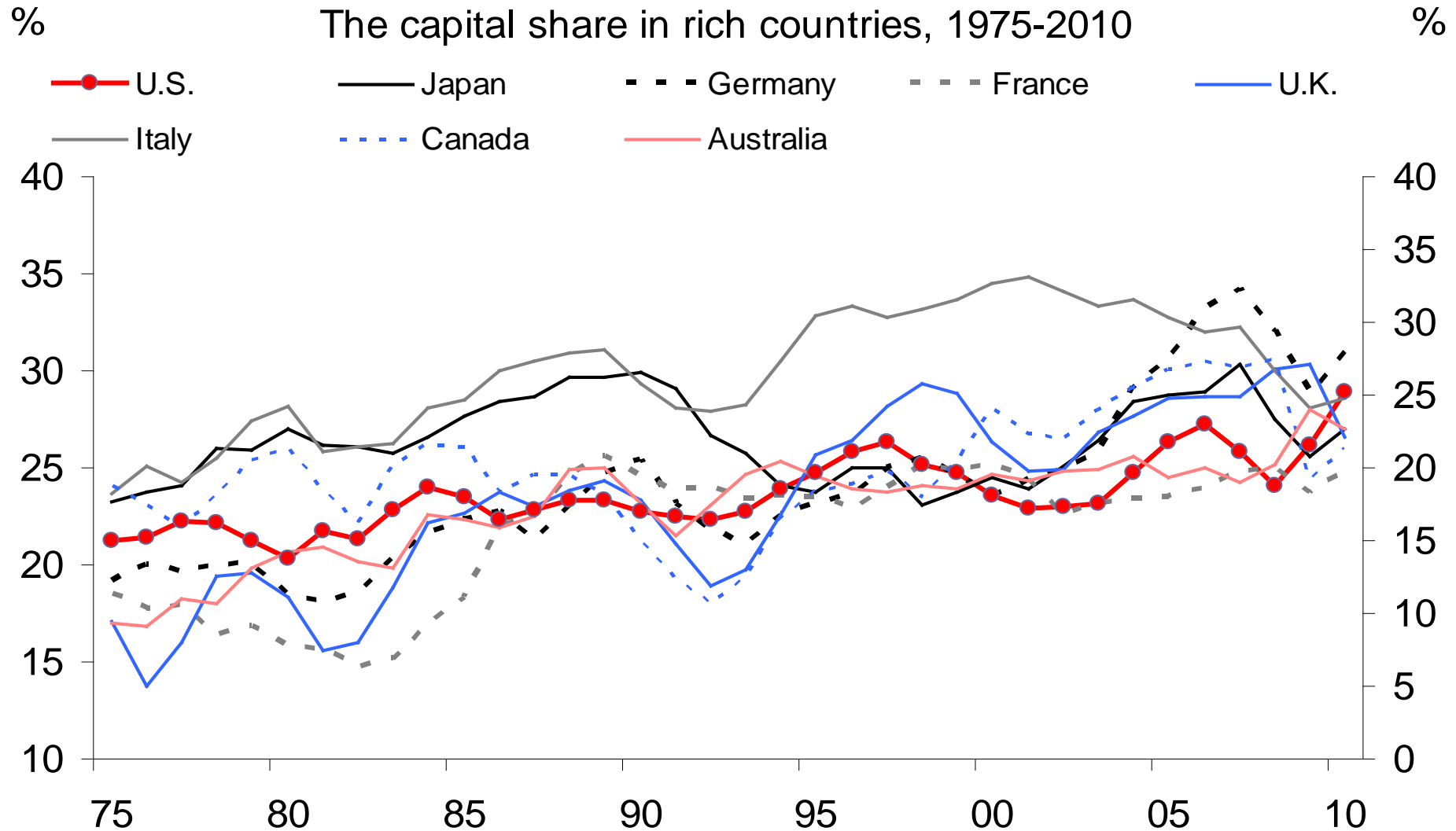
Trends in annual hours worked by the bottom and top 20% of earners, OECD average, mid-1980s to mid-2000s



Note: Paid workers of working age.

Source: OECD, DB Global Markets Research

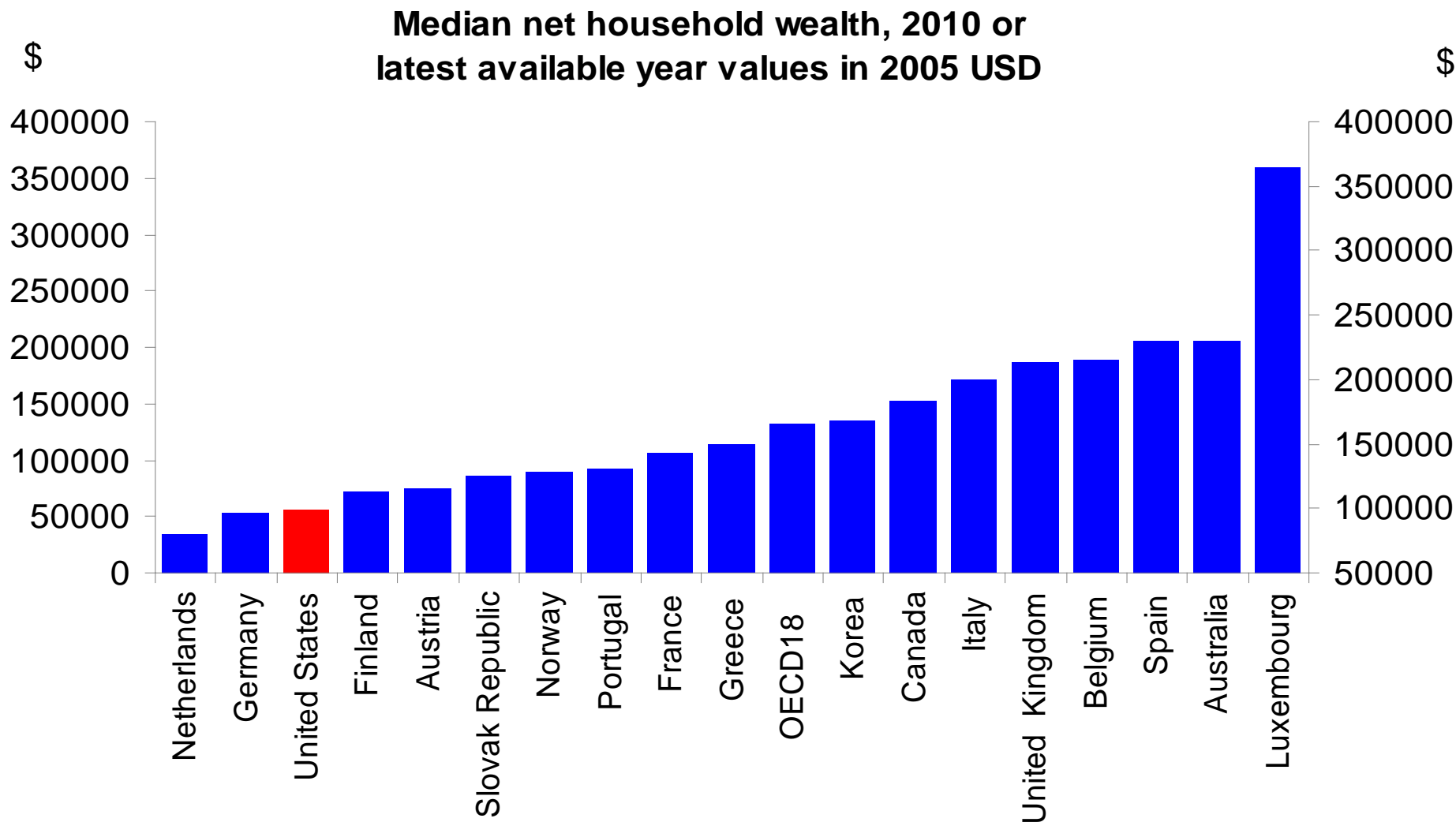
Capital income bigger part of total income in advanced economies than in the past



Source: Piketty (2014), DB Global Markets Research



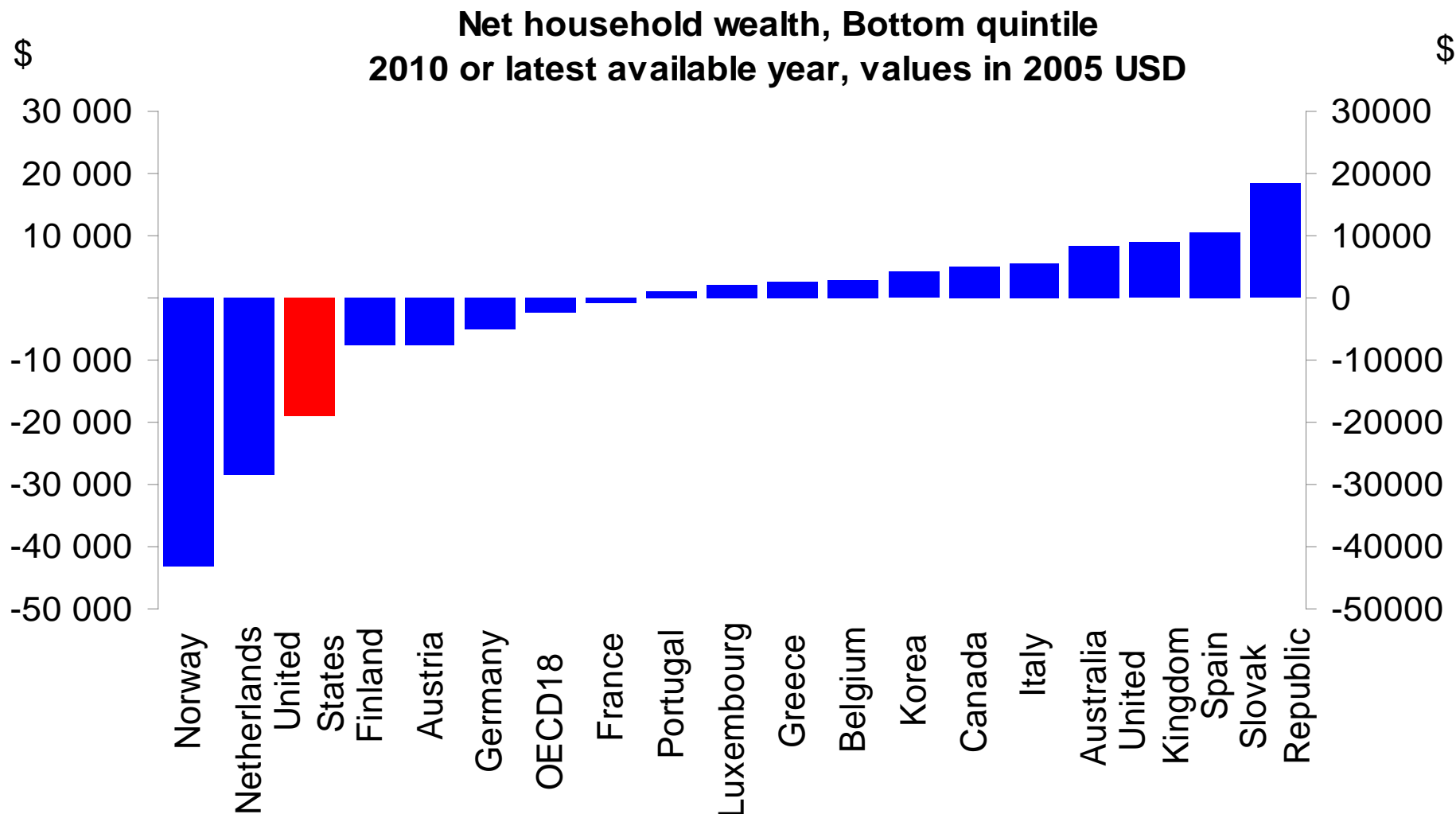
Median net household wealth low in the US



Source: OECD Wealth Distribution Database., DB Global Markets Research



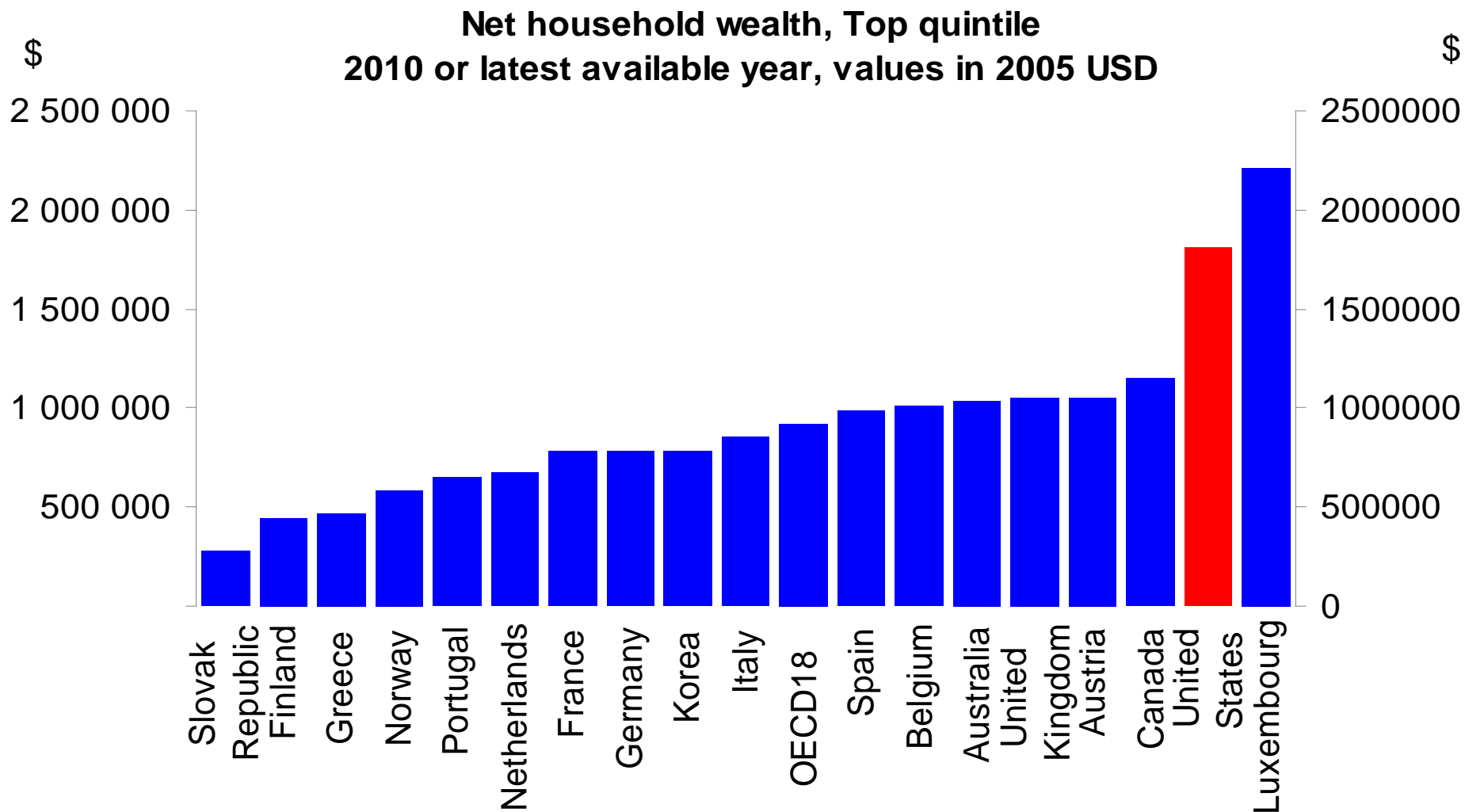
Net household wealth at bottom of wealth distribution



Source: OECD Wealth Distribution Database., DB Global Markets Research



Net household wealth at top of wealth distribution

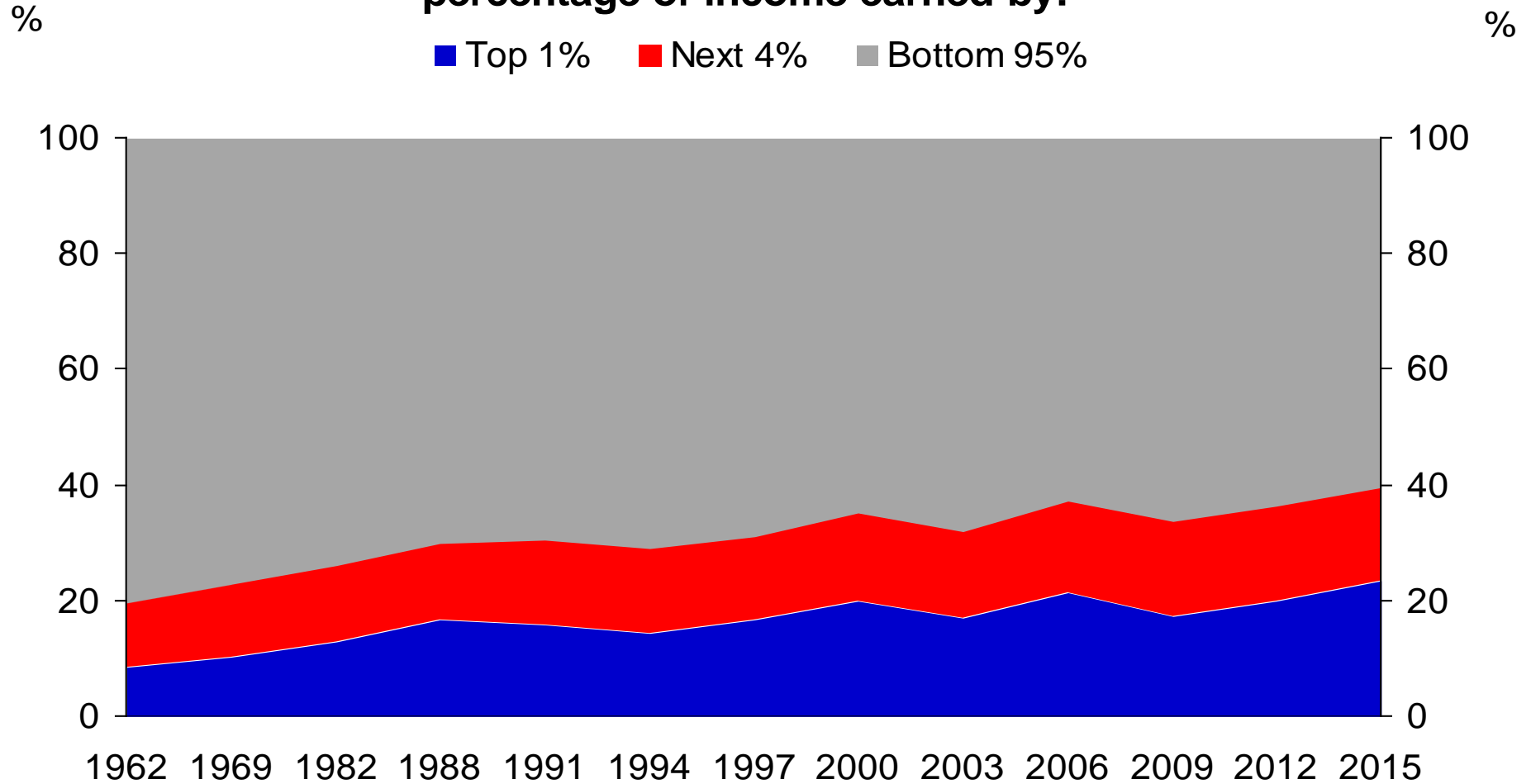


Source: OECD Wealth Distribution Database., DB Global Markets Research



Top 5% earn 40% of income

**The distribution of income,
percentage of income earned by:**



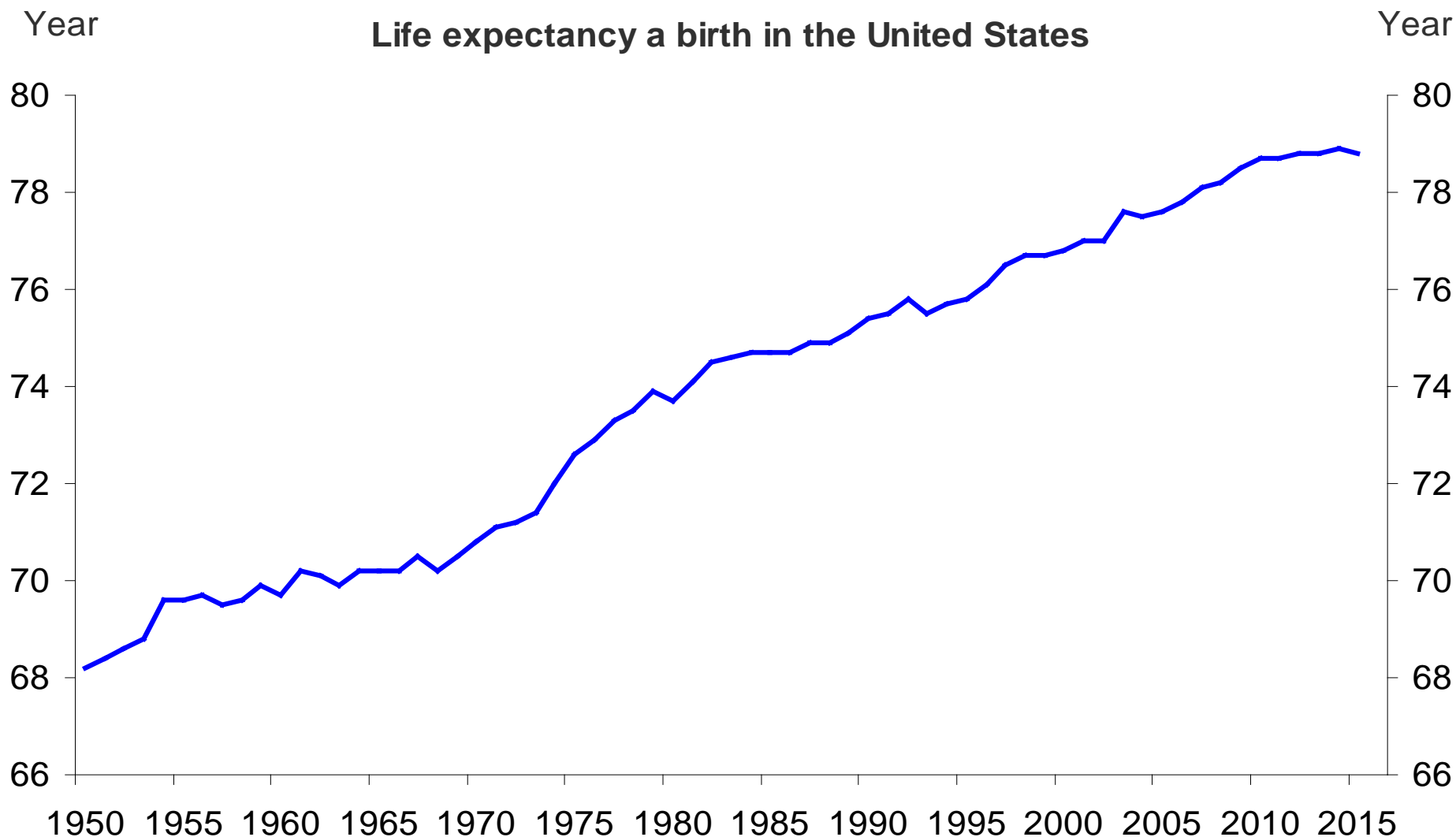
Source: Edward N. Wolff (2017) . Survey of Consumer Finances, DB Global Markets Research



The opioid crisis and labor supply



Life expectancy at birth falling recently



Source: CDC , DB Global Markets Research

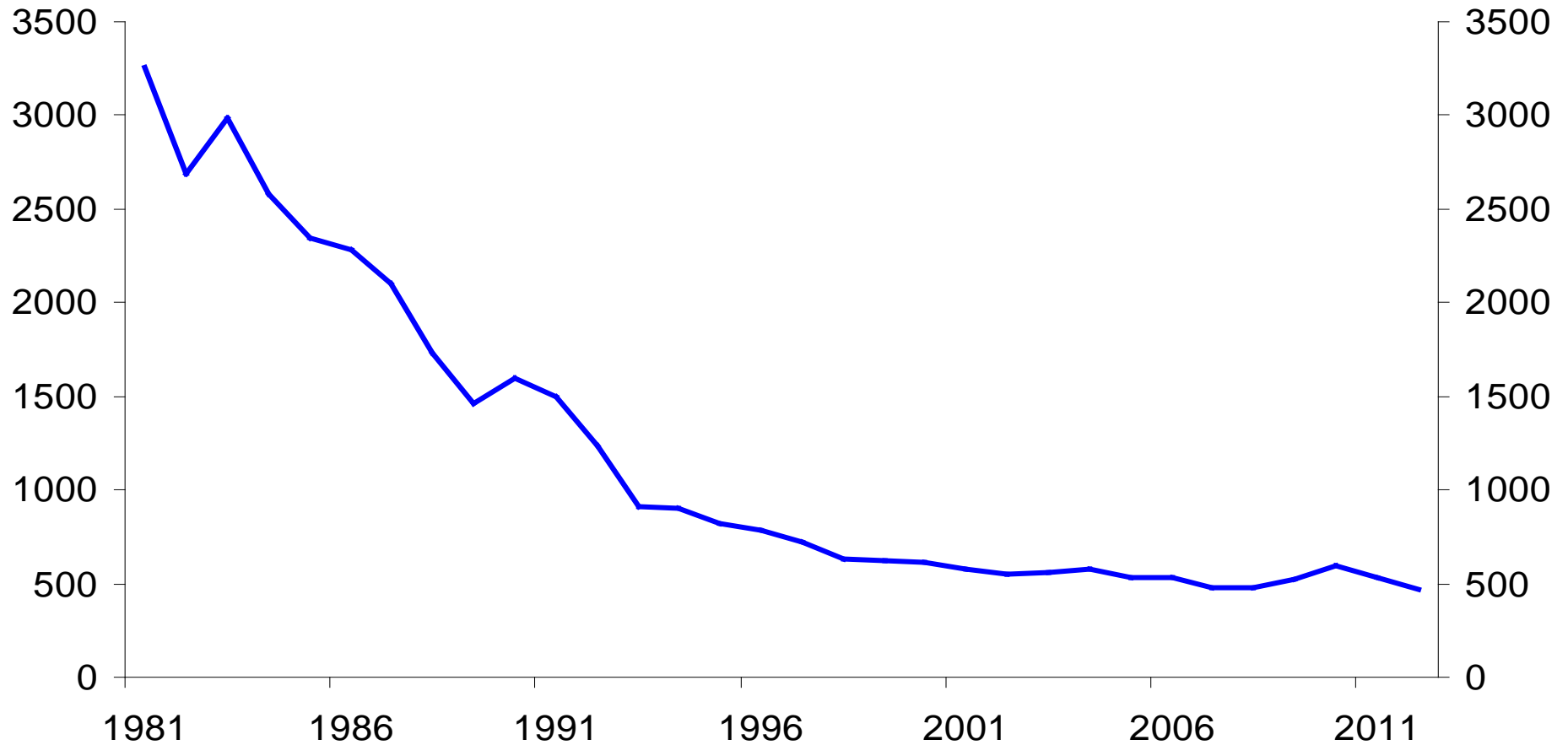


Price of heroin has fallen a lot

Price per pure gram (2012 dollars)

Price of heroin in United States, 1981-2012

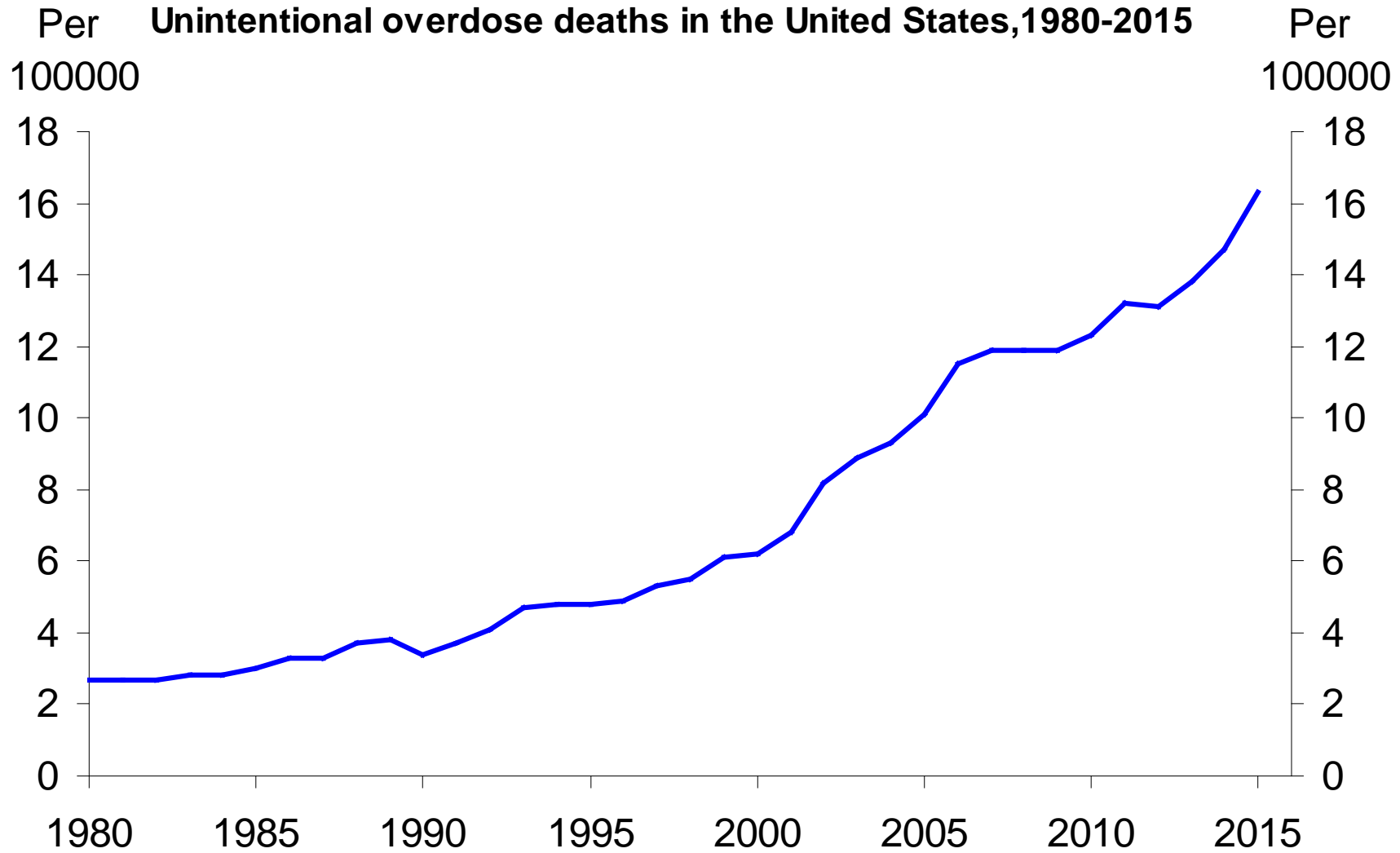
Price per pure gram (2012 dollars)



Source: https://obamawhitehouse.archives.gov/sites/default/files/ondcp/policy-and-research/2016_ndcs_data_supplement_20170110.pdf, DB Global Markets Research



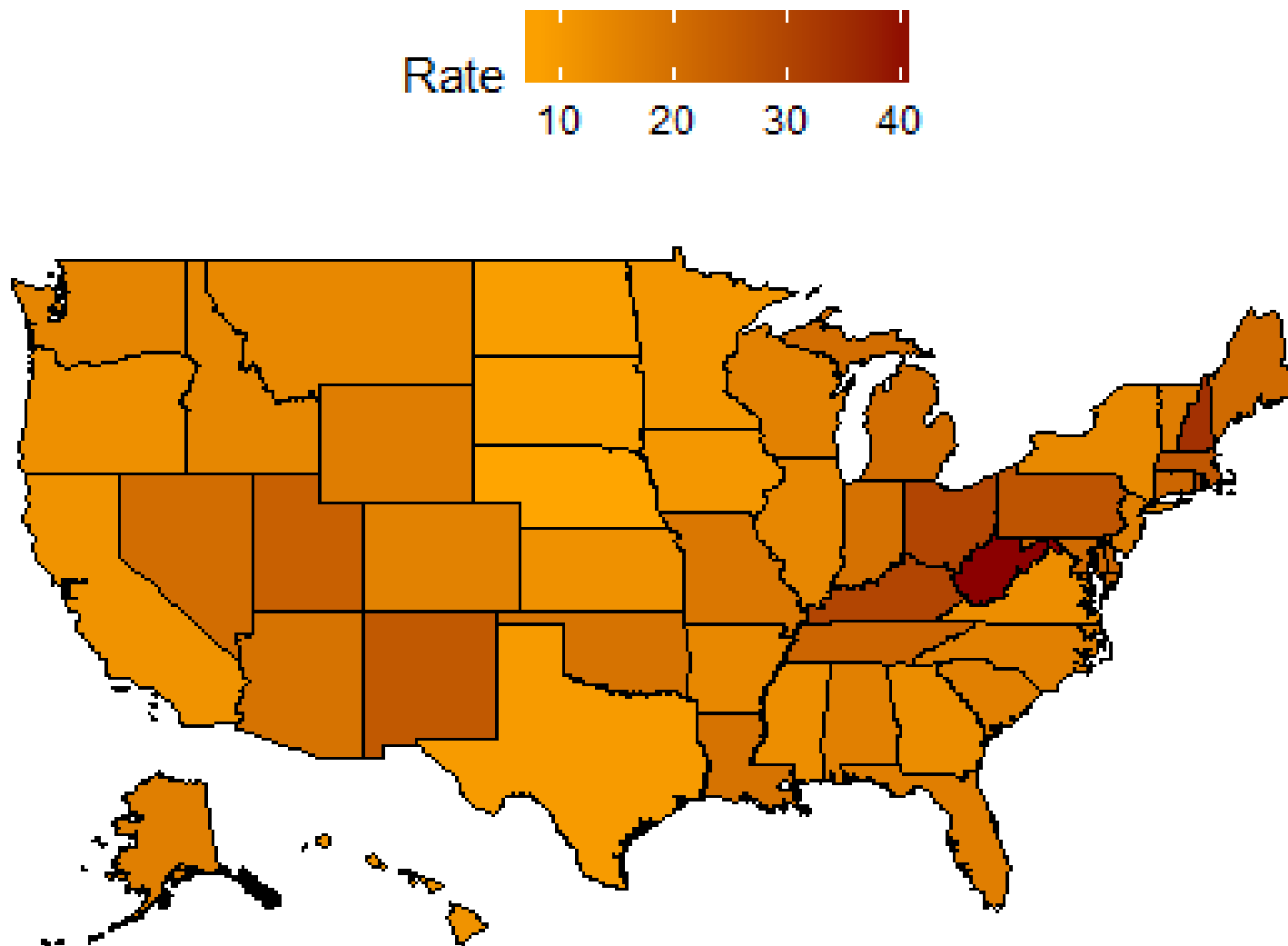
More people die of an opioid overdose



Source: cdc.gov/nchs/data, DB Global Markets Research



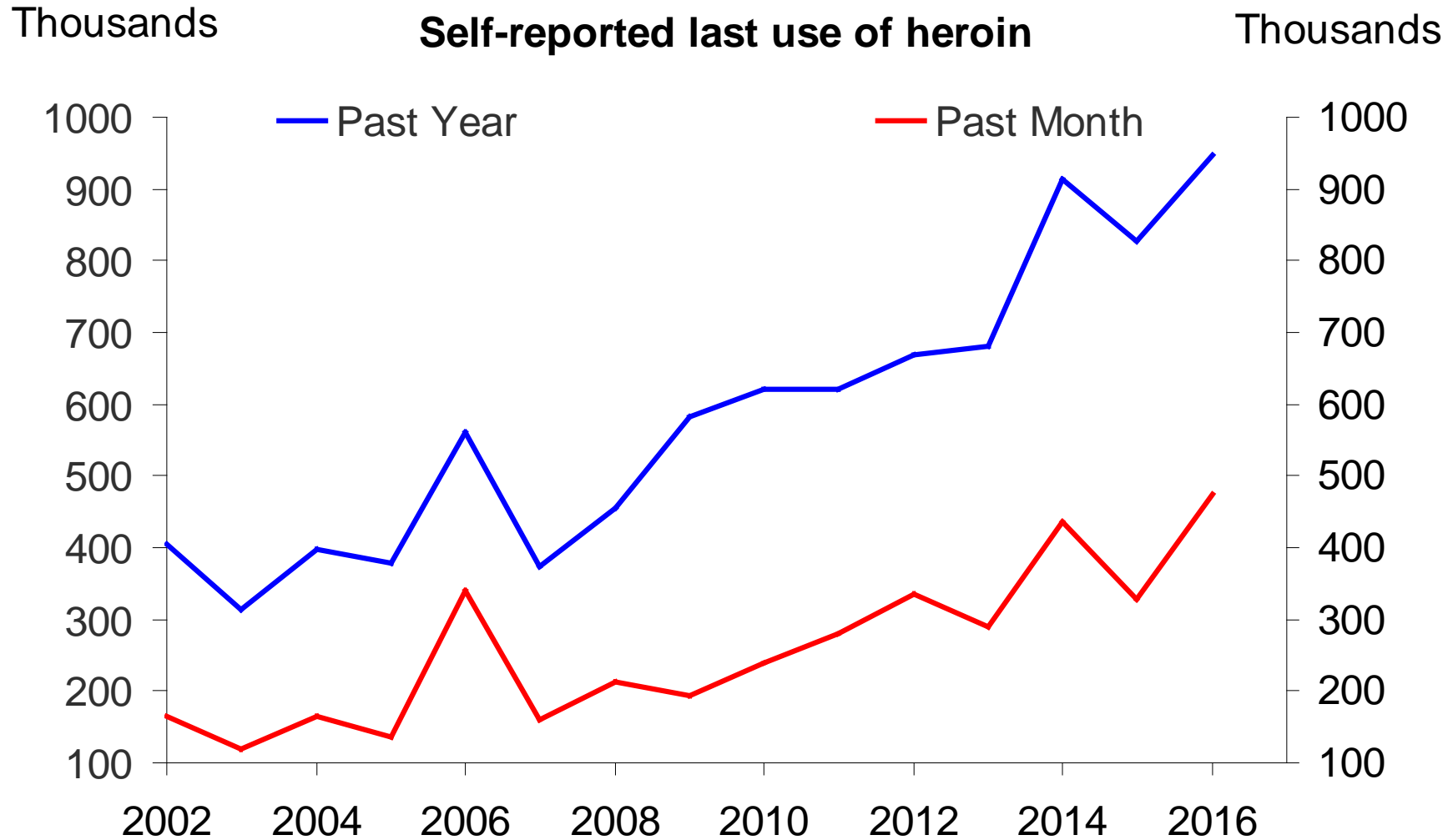
Death by drug overdoses in 2015



Source: <https://www.cdc.gov/drugoverdose/data/statedeaths.html>, DB Global Markets Research



More people use heroin

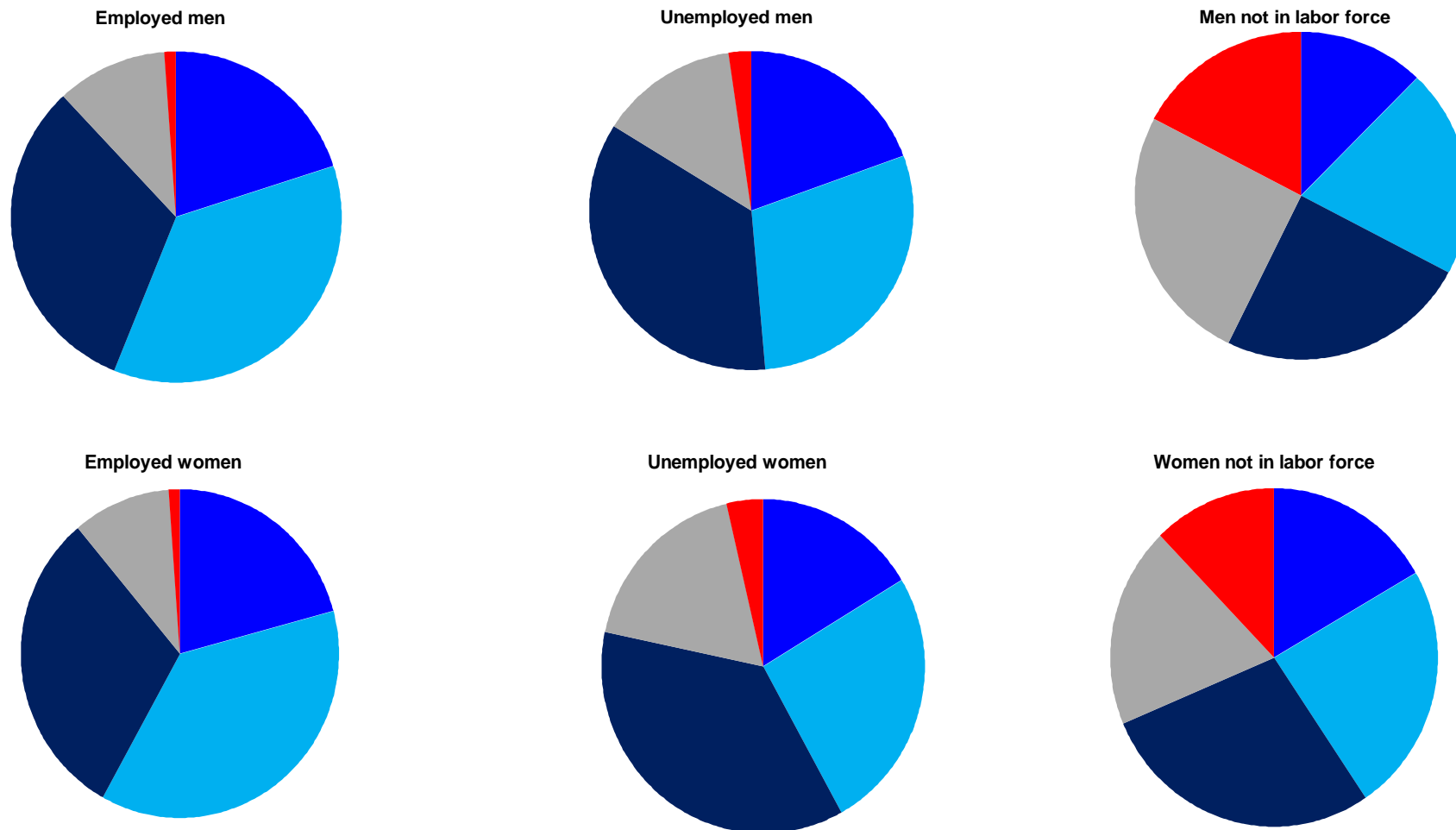


Source: samhsa.gov/study-dataset/national-survey-drug-use-and-health-2002-15 & 2013, DB Global Markets Research



Self-reported health status for workers age 25-54 by labor force status

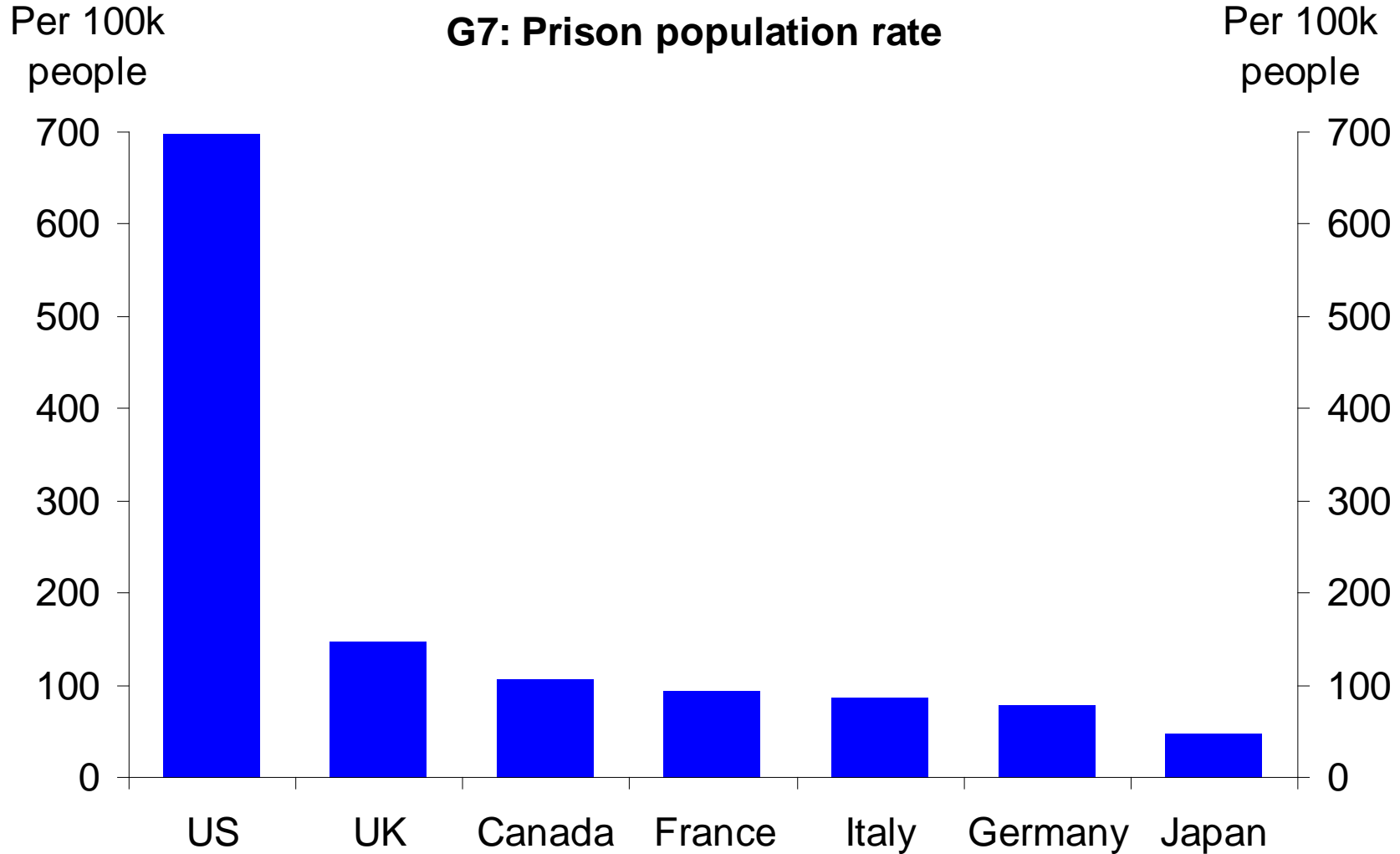
Excellent Very good Good Fair Poor



Source: https://www.brookings.edu/wp-content/uploads/2017/09/1_krueger.pdf, (Table 4), BLS (American Time Use Survey), DB Global Markets Research



Many more people in prison in the United States



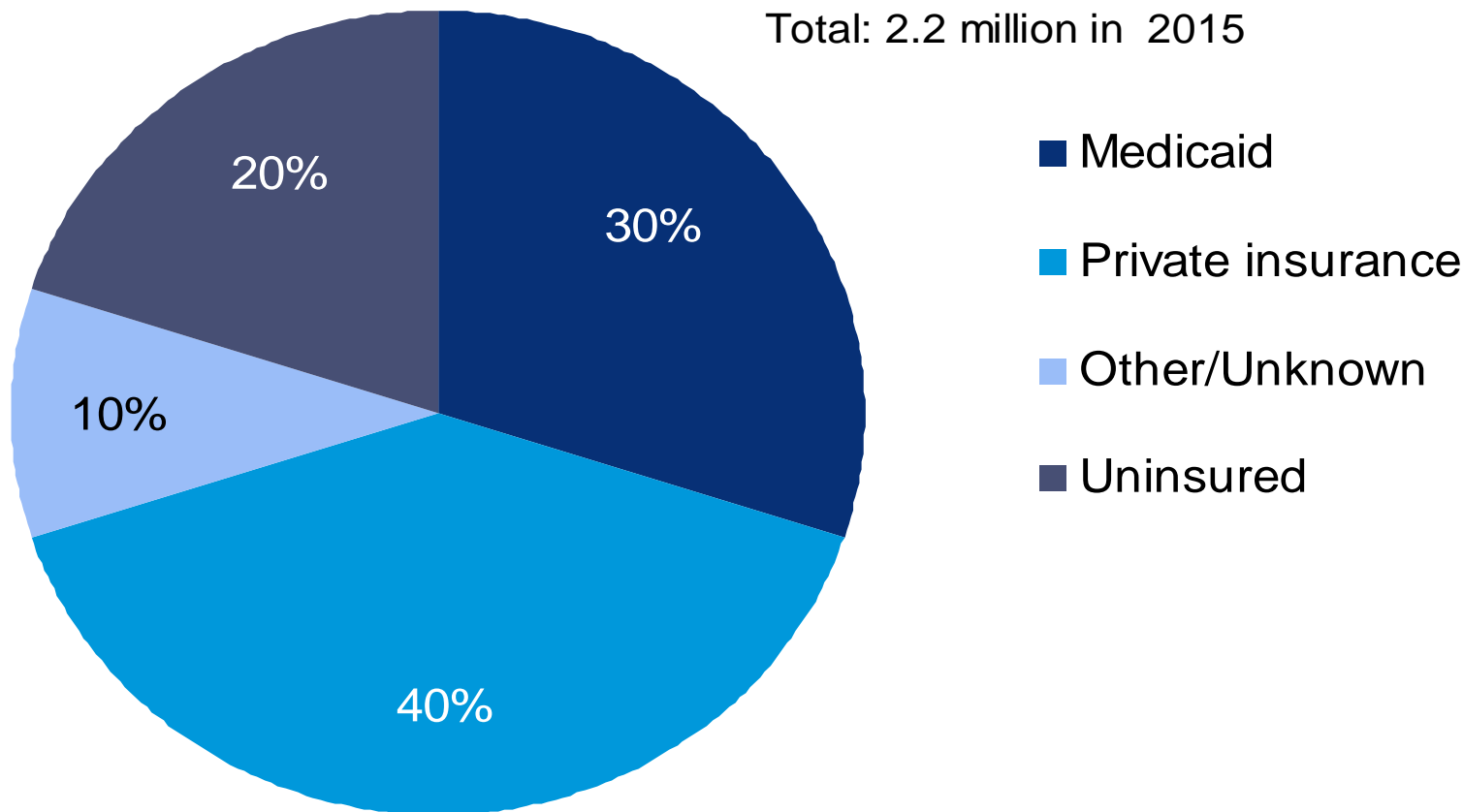
Source: http://prisonstudies.org/sites/default/files/resources/downloads/world_prison_population_list_11th_edition_0.pdf, DB Global Markets Research



Medicaid covers 30% of the 2.2mn adults with opioid addiction

Medicaid covers 3 in 10 nonelderly adults with opioid addiction

Total: 2.2 million in 2015



Source: <https://www.kff.org/infographic/medicaids-role-in-addressing-opioid-epidemic/>, DB Global Markets Research



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 - Hooper earned a BA in Economics (cum laude) from Princeton University and an MA and Ph.D. in Economics from University of Michigan. He has published numerous books, journal articles, and reviews on economics and policy analysis.



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- Mr. Slok studied at University of Copenhagen and Princeton University. He has published numerous journal articles and reviews on economics and policy analysis, including in Journal of International Economics, Journal of International Money and Finance, and The Econometric Journal.



Brett Ryan

- Director
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Matthew holds a Ph.D. in Economics from the University of California, Los Angeles. While at UCLA, Matthew worked at the U.S. Department of the Treasury in the Office of Financial Research. Prior to graduate school, he worked as a research analyst in the macroeconomics department at the Federal Reserve Bank of Philadelphia.



Appendix 1

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