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

Technological change
- Disproportionately raise demand for capital and skilled labor over low-skilled and unskilled labor by eliminating many jobs through automation or upgrading the skill level required to attain or keep those jobs.

Trade globalization
- Openness raises skill premium, but also increases real wages by lowering import prices. While increased trade lowers income inequality in EMEs by increasing demand and wages for abundant lower-skilled workers.

Financial globalization
- FDI and portfolio flows increase income inequality through concentration of foreign assets and liabilities in relatively higher skill- and technology-intensive sectors, pushing up demand for wages of higher skilled workers.

Labor market institutions
- More flexible labor market institutions can pose challenges for workers, especially those with low skills, and hence play an important explaining role in inequality developments.

Tax policies
- Governments in advanced economies have historically mitigated inequality through public policy—primarily progressive taxes and social transfers such as public retirement benefits.

Education
- Effect of increased educational attainment on income inequality could be either positive or negative depending on the evolution of rates of return to education.

Source: OECD, DB Global Markets Research
Country groups with similar patterns of inequality

**Low inequality in household disposable income**

- Denmark
- Iceland
- Norway
- Sweden
- Switzerland

- Low dispersion in labor income (high employment rate and little wage dispersion). Cash transfers tend to be universal and taxes are not highly progressive.

**Belgium**
- Czech Republic
- Estonia
- Finland
- France
- Italy
- Slovak Republic
- Slovenia

- Average dispersion in labor income (little wage variation but low employment or high part-time rate). Highly concentrated capital and self-employment income. Cash transfers (largely insurance-based) and taxes are not highly progressive.

**Austria**
- Germany
- Greece
- Hungary
- Japan
- Korea
- Luxembourg
- Poland
- Spain

- Individual labor income is concentrated, reflecting above average dispersion in wages and a low employment or high part-time rate. Taxes and transfers are not highly progressive.

**Australia**
- Canada
- Ireland
- Netherlands
- New Zealand
- United Kingdom

- Above average wage dispersion coupled with a high part-time rate. Cash transfers are targeted and taxes are progressive.

**Chile**
- Israel
- Mexico
- Portugal
- Turkey
- United States

- High concentration of labor, capital and self-employment income. The poverty rate is high.

Source: OECD, DB Global Markets Research
Income inequality very high in the United States

Gini coefficient

More equal societies

US: high inequality

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: 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: 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
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

- Bottom 50 percent
- 51st to 90th percentiles
- Top 10 percent

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

- Top 1% (incomes above $443,000 in 2015)
- Top 10-5% (incomes between $124,800 and $180,500)
- Top 5-1% (incomes between $180,500 and $443,000)

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

Salaries  Business Income  Capital Income  Capital Gains

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

Cumulative Growth in Average Inflation-Adjusted After-Tax Income, by Before-Tax Income Group, 1979 to 2013

- Lowest Quintile
- Middle Three Quintiles
- 81st to 99th Percentiles
- Top 1 Percent

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

\[ y = -0.014x + 1.2814 \]
\[ R^2 = 0.6865 \]

Source: Census, BLS, Haver Analytics, DB Global Markets Research
Tax cuts have increased inequality

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

Correlation = -0.63

Growth rate of federal tax receipts (10 yr MA)
Share of top 1% (4 yr lead)

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.
Percentage of population receiving food stamps, 2016

Source: CBPP, DB Global Markets Research
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
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

- Housing
- Equites & fixed income claims
- Business assets
- Pensions

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

Source: Saez and Zucman (2016).

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

Wealth composition for middle income America

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


Source: Deutsche Bank
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

% 1980 Change in 1980-90 Change in 1990-00 Change in 2000-Latest

US
UK
Germany
France
Sweden
Japan
India
Indonesia
South Africa
China

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

Change in income share, 1990-2009

- Middle 20%
  - Advanced Economies: -1%
  - Emerging Economies: 0%
- Top 20%
  - Advanced Economies: -2%
  - Emerging Economies: 3%

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
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.
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

Trends in real household income by income group, mid-1980s to late 2000s, average annual change in percent

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

Hours worked declined more among lower-wage workers

Source: OECD, DB Global Markets Research

Note: Paid workers of working age.
Capital income bigger part of total income in advanced economies than in the past

The capital share in rich countries, 1975-2010

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

Net household wealth, Bottom quintile
2010 or latest available year, values in 2005 USD

Source: OECD Wealth Distribution Database, DB Global Markets Research
Net household wealth at top of wealth distribution

Net household wealth, Top quintile
2010 or latest available year, values in 2005 USD

Source: OECD Wealth Distribution Database., DB Global Markets Research
Housing is an important part of wealth

Median net wealth and change in house prices
2010 or latest available year, values in 2005 USD

Note: The median net wealth is expressed in 2005 USD; changes in house prices are measured by the annual growth rate of house prices over the period 1970-2013 for most countries (refer to Table 6.2 for corresponding periods).

Source: OECD, DB Global Markets Research
Peter Hooper

- **Managing Director, Chief Economist**
- **Deutsche Bank Securities, Inc.**
- **+1 (212) 250-7352**
- **peter.hooper@db.com**

- **Peter Hooper** is currently Managing Director and Chief Economist for Deutsche Bank Securities. He joined Deutsche Bank Securities in the fall of 1999, first as Chief International Economist and shortly thereafter as Chief US Economist. He became Chief Economist and co-head of global economics in 2006. Prior to joining Deutsche Bank, Hooper enjoyed a distinguished 26-year career at the Federal Reserve Board in Washington, D.C. While rising to senior levels of the Fed staff, he held numerous positions, including as an economist on the FOMC and as Deputy Director of the Division of International Finance.

- Hooper produces weekly and quarterly publications for Deutsche Bank with a focus on US and global economic developments and Fed policy; he also comments on US and global economic and financial developments in the news media. His US Economics team has been ranked No. 1 in fixed income research by Institutional Investor in 2010 and 2011. Hooper currently serves as a member of the Economic Advisory Panel of the Federal Reserve Bank of New York, a member and former chairman of the Economic Advisory Committee of the American Bankers Association, a founding member of the US Monetary Policy Forum, a member of the Economic Leadership Council for the University of Michigan, and a member of the Forecasters’ Club of New York.

- 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.
Torsten Slok, Ph.D.

- Chief International Economist, Managing Director
- Deutsche Bank Securities, Inc.

- Torsten Slok joined Deutsche Bank Securities in the fall of 2005.
- Mr. Slok’s Economics team has been top-ranked by Institutional Investor for the past four years. Slok currently serves as a member of the Economic Club of New York.
- Prior to joining the firm, Mr. Slok worked at the OECD in Paris in the Money and Finance Division and the Structural Policy Analysis Division. Before joining the OECD he worked for four years at the IMF in the Division responsible for writing the World Economic Outlook and the Division responsible for China, Hong Kong, and Mongolia.
- 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
• Deutsche Bank Securities, Inc.

- Brett Ryan joined Deutsche Bank's US Economics Research team in May 2010. Prior to joining the team, Brett spent five years at Deutsche Bank in the institutional equity research sales group. Brett has a Bachelor of Arts degree from the University of Pennsylvania; majoring in politics, philosophy and economics.
Matthew Luzzetti joined Deutsche Bank in September 2012 and is currently a senior economist in DB’s top Institutional Investor-ranked economics team in New York. He previously held a position in DB’s Office of the Chief Economist in London. Matthew’s research focuses primarily on the US economy and Fed policy, where he regularly contributes to DB’s Global Economics publications, including Global Economic Perspectives and The House View.

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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**Equity Rating Dispersion and Banking Relationships**

![Bar chart showing equity rating dispersion and banking relationships. The chart indicates the percentage of companies covered and those with banking relationships across the 'Buy', 'Hold', and 'Sell' categories. The percentages are 44% for 'Buy', 53% for 'Hold', and 2% for 'Sell'.]
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