



## The Pandemic Revolution: Macroeconomics in the Post-Covid World

Secular Stagnation, Liquidity Traps and Policy Options for the Next Decade

SDA Bocconi

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# The Pandemic Revolution

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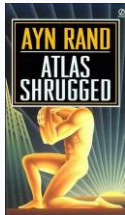

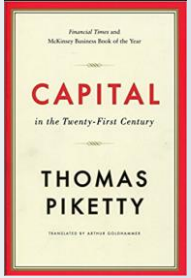

1. The Debt Supercycle: Post War Economics
2. The QE Infinity Trap
3. Secular Stagnation
4. The Rise of Populism
5. Escaping The QE Infinity Trap
6. The New Investment Environment: Increased Market Fragility
7. New Policy Instruments
8. Conclusions: Ulysses, the Sirens and Long-term Incentives

# 1. The Debt Supercycle: Post War Economics

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# The Debt Supercycle: Post War Economics

## A Brief History of Capitalism: From the Pursuit of Happiness to Greed is Good

Economic Theory	<div data-bbox="376 312 488 392"> <b>Adam Smith</b>  </div> <div data-bbox="533 312 846 544"> <b>John M. Keynes</b>  <i>"Capitalism is the astounding belief that the most wickedest of men will do the most wickedest of things for the greatest good of everyone."</i> </div> <div data-bbox="869 312 1160 576"> <b>Milton Friedman</b>  <i>"A society that puts equality before freedom will get neither. A society that puts freedom before equality will get a high degree of both."</i> </div> <div data-bbox="1193 312 1877 647"> <p>----- Globalization -----&gt;</p> <p><b>Central Banks Masters of the Universe</b></p> <div data-bbox="1216 451 1507 647"> <b>Alan Greenspan</b>  <i>(Jackson Hole, 2005)</i>  <i>"History has not dealt kindly with the aftermath of protracted periods of low risk premiums."</i> </div> <div data-bbox="1574 451 1865 536"> <b>Yellen / Draghi / Kuroda / Carney</b> </div> </div> <div data-bbox="1899 312 2089 584"> <b>Future of Capitalism</b>    </div>
Policy Expressions & Events	<div data-bbox="342 675 521 831"> <ul style="list-style-type: none"> <li>- Industrial Revolution</li> <li>- Great Depression</li> <li>- World War 2</li> </ul> </div> <div data-bbox="544 675 824 799"> <ul style="list-style-type: none"> <li>- Bretton Woods</li> <li>- Mixed economies / Managed capitalism,</li> <li>- Stagflation</li> </ul> </div> <div data-bbox="353 850 633 970">  </div> <div data-bbox="712 794 880 1018">  </div> <div data-bbox="880 675 1160 890"> <ul style="list-style-type: none"> <li>- Bretton Woods Breaks Down (Nixon Shock)</li> <li>- Freddie / Fannie;</li> <li>- Laissez-faire revival – Ronald Reagan's "trickle down"</li> </ul> </div> <div data-bbox="913 898 1126 1018">  </div> <div data-bbox="1182 675 1373 831"> <ul style="list-style-type: none"> <li>- WTO founding</li> <li>- Introduction of the Euro</li> <li>- Greenspan put (moral hazard)</li> </ul> </div> <div data-bbox="1193 882 1373 938"> <p>WORLD TRADE ORGANIZATION</p> </div> <div data-bbox="1395 675 1641 735"> <ul style="list-style-type: none"> <li>- Financial Crisis</li> <li>- Saved by QE</li> </ul> </div> <div data-bbox="1395 746 1507 850">  </div> <div data-bbox="1384 866 1485 954">  </div> <div data-bbox="1597 746 1854 882">  </div> <div data-bbox="1608 906 1843 1002"> <ul style="list-style-type: none"> <li>- QE Debasement</li> <li>- Market Bubbles</li> <li>- Inequality stress</li> </ul> </div> <div data-bbox="1888 675 2089 959"> <ul style="list-style-type: none"> <li>- Universal Basic Income</li> <li>- Bail-inable debt</li> <li>- "QE for the people"</li> <li>- Protectionism</li> <li>- Debt cancellation</li> </ul> </div>
Reflection in Society	<div data-bbox="342 1050 712 1358"> <b>Thomas Jefferson</b>  <i>(U.S. Constitution, 1776)</i>  <i>"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."</i> </div> <div data-bbox="712 1050 1283 1182"> <b>Ayn Rand</b> <i>(Atlas Shrugged, 1957)</i>  <i>"I refuse to apologize for my ability – I refuse to apologize for my success – I refuse to apologize for my money. If this is evil, make the most of it."</i> </div> <div data-bbox="723 1209 857 1422">  </div> <div data-bbox="869 1233 1193 1406"> <b>C.S. Carroll</b>  <i>(Alice in Wonderland, 1865)</i>  <i>"'tis love, 'tis love that makes the world go round."</i> </div> <div data-bbox="1305 1042 1429 1257">  </div> <div data-bbox="1216 1265 1485 1406"> <b>Gordon Gekko</b>  <i>(Wall Street, 1987)</i>  <i>"Greed, for the lack of a better word, is good."</i> </div> <div data-bbox="1485 1153 1641 1361">  </div> <div data-bbox="1664 1074 1854 1353">  </div> <div data-bbox="1899 1050 2045 1137"> <ul style="list-style-type: none"> <li>- Bitcoin / Cryptos /</li> <li>- E-money</li> </ul> </div> <div data-bbox="1888 1217 2089 1409">  </div>

# The Debt Supercycle: Post War Economics

A Story of Dreams, Greed, Fear and Hope

1950-1970	Rise of post-war debt-based democracies
1970-2008	Leverage, de-regulation, globalisation
2008-2017	Global QE to the rescue
2017-now	Financial fragility, populism, liquidity traps

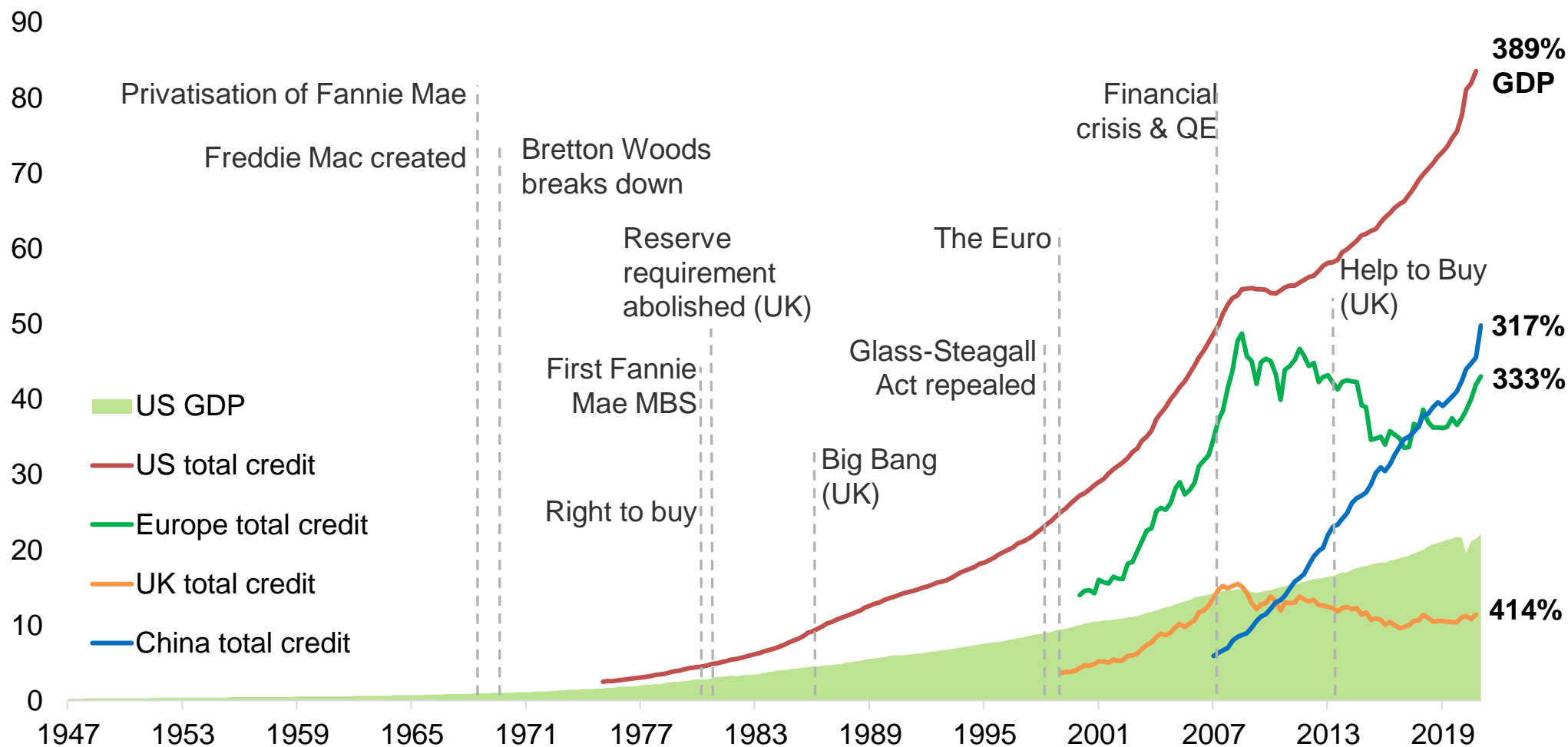


Source: Algebris Investments

# The Debt Supercycle: Post War Economics

## From Fiat Money to Fiat Credit

Total Private Credit in US\$ Trillion (lhs)

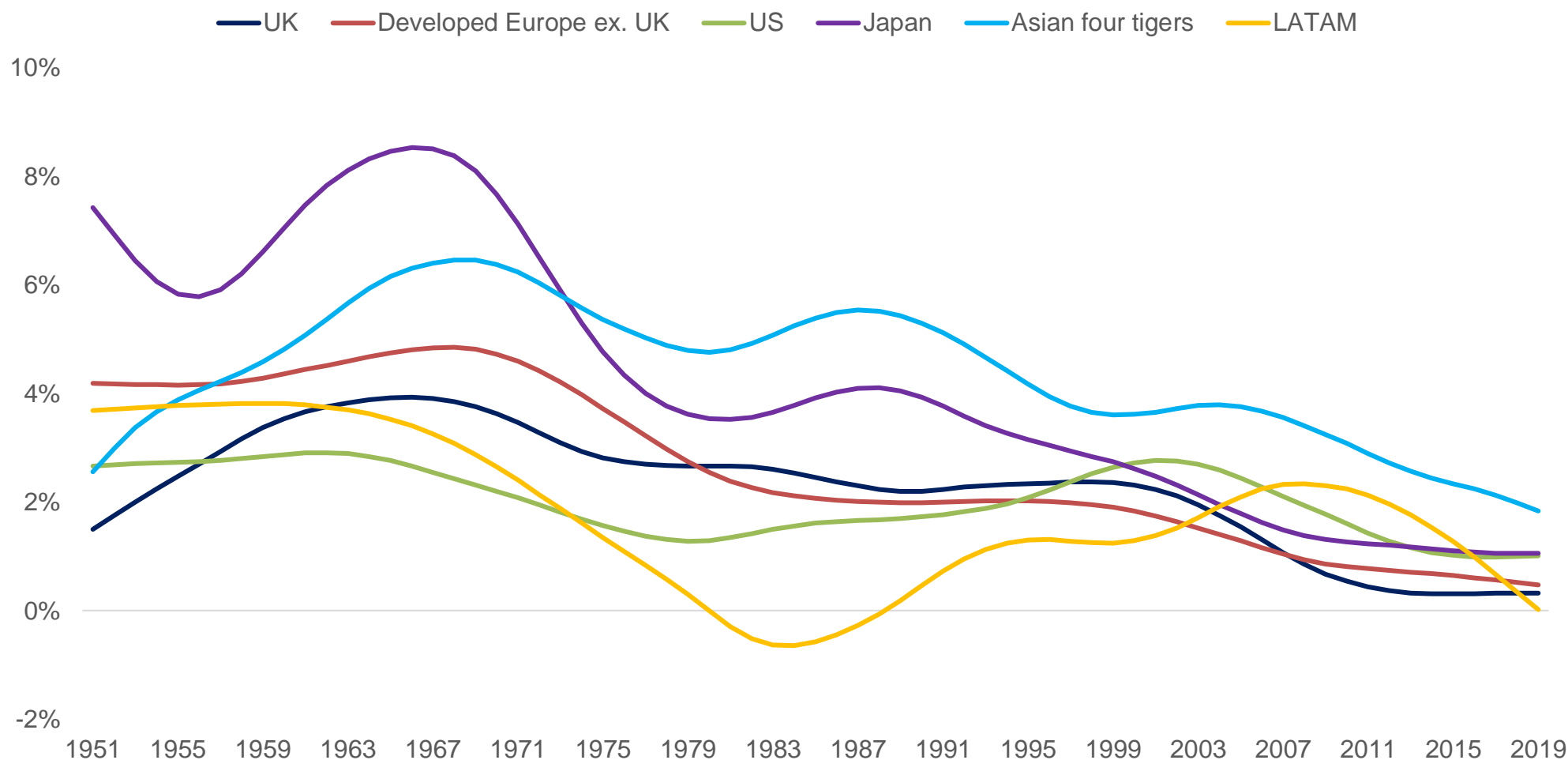


Source: Algebris Investments, Federal Reserve, European Central Bank, Bloomberg, FRED, PBoC. Private credit calculated as the sum of household loans, corporate loans and bonds and bank debt. Data as of Q1'21

# The Debt Supercycle: Post War Economics

## Productivity Growth Has Hit a Wall

Trend growth of labour productivity (output per hour) using HP filter, 1951 - 2019



Source: Algebris Investments, The Conference Board Total Economy Database. \*Trend growth rates are obtained using HP filter, assuming a lambda of 100.

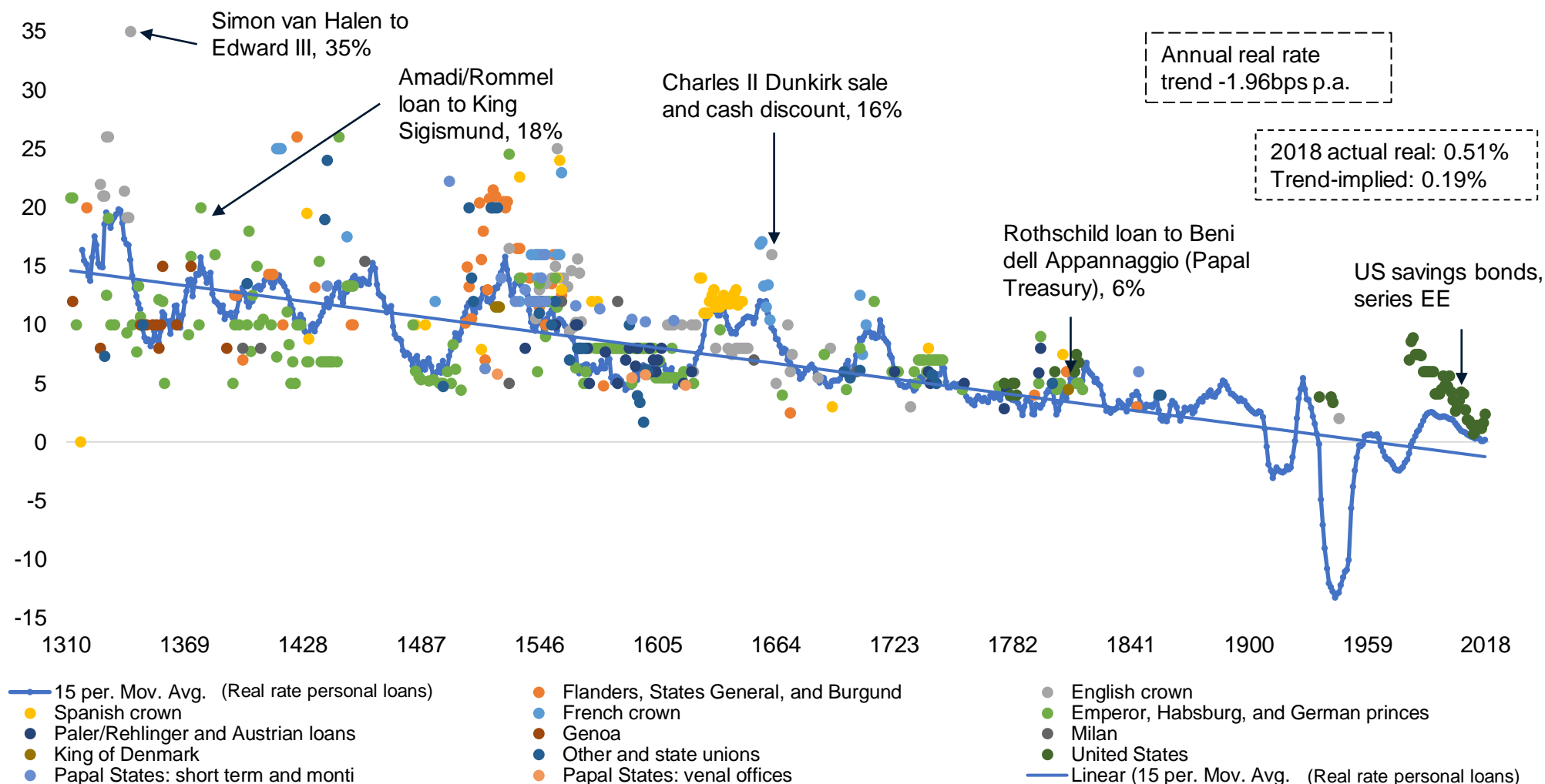
## 2. The QE Infinity Trap

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# The QE Infinity Trap

## Low Interest Rates Are Not a New Phenomenon

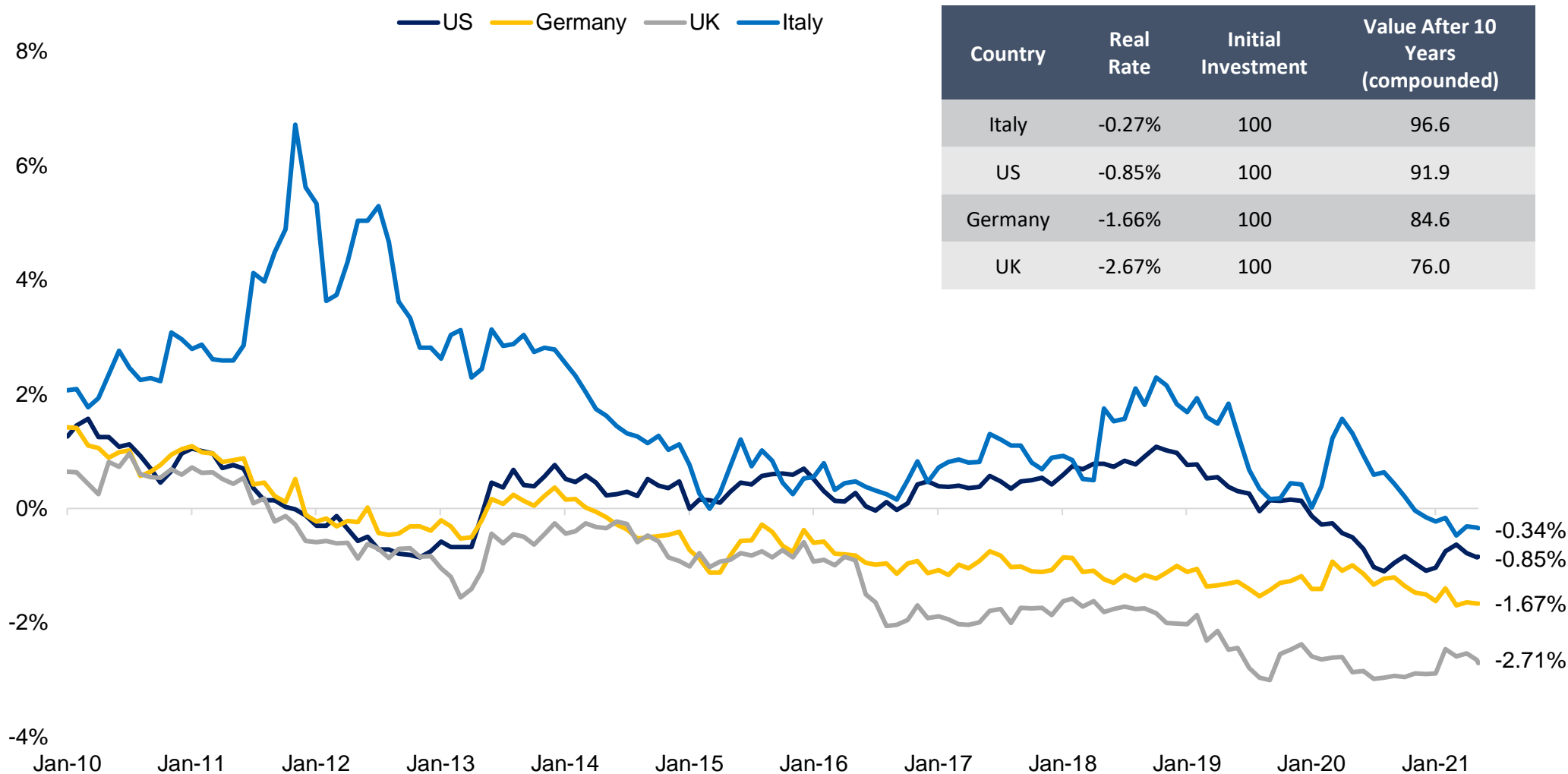
454 personal/non-marketable loans to sovereigns, 1310-1946, and U.S. savings bonds – plus resulting real rate trend.



Source: Algebris Investments, Bank of England Staff Working Paper No. 845 "Eight centuries of global real interest rates, R-G, and the 'suprasecular' decline, 1311–2018"

# The QE Infinity Trap

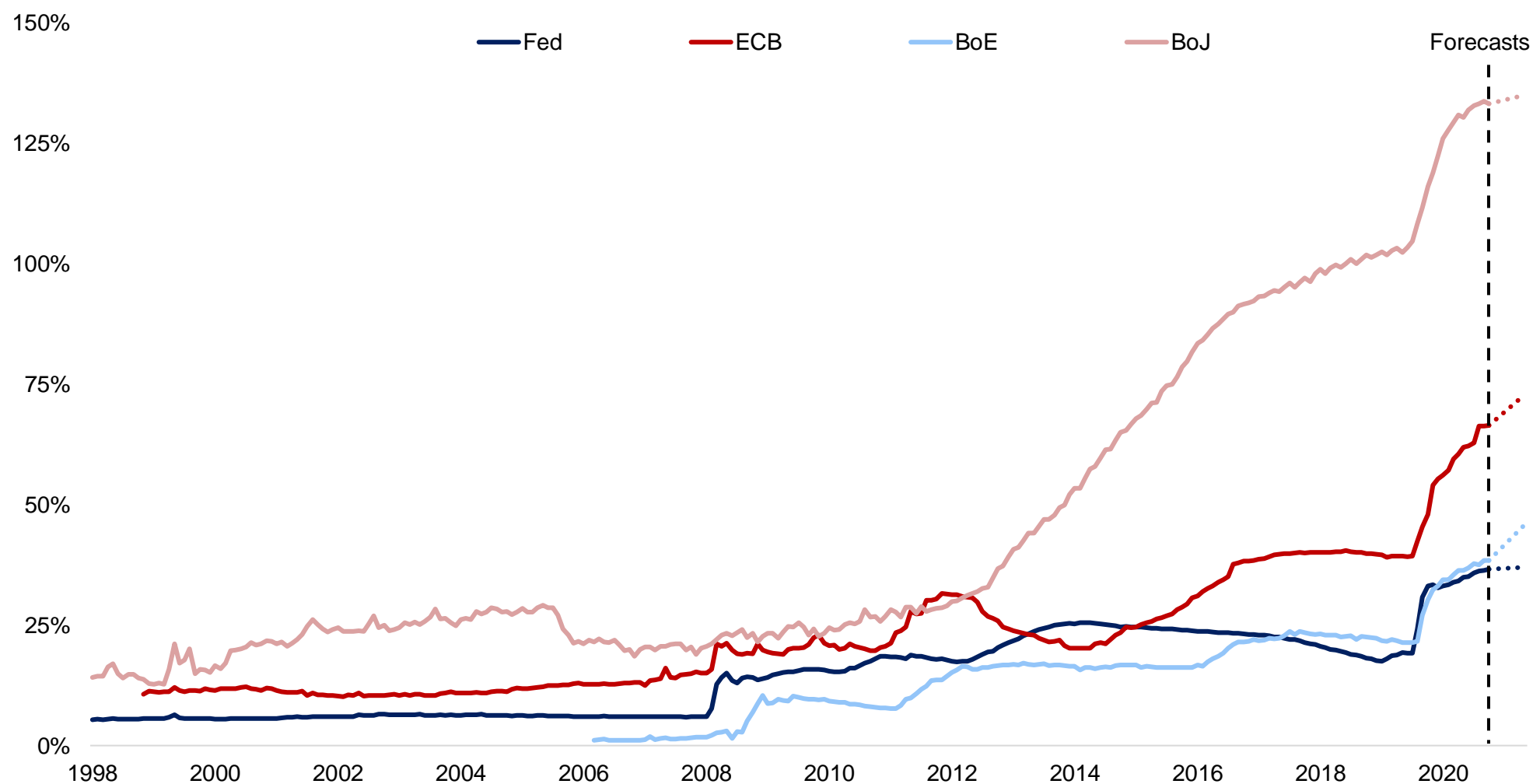
## 10 Year Real Rates Across Countries



Source: Algebris Investments, Bloomberg. Data as of 03.06.2021

# The QE Infinity Trap

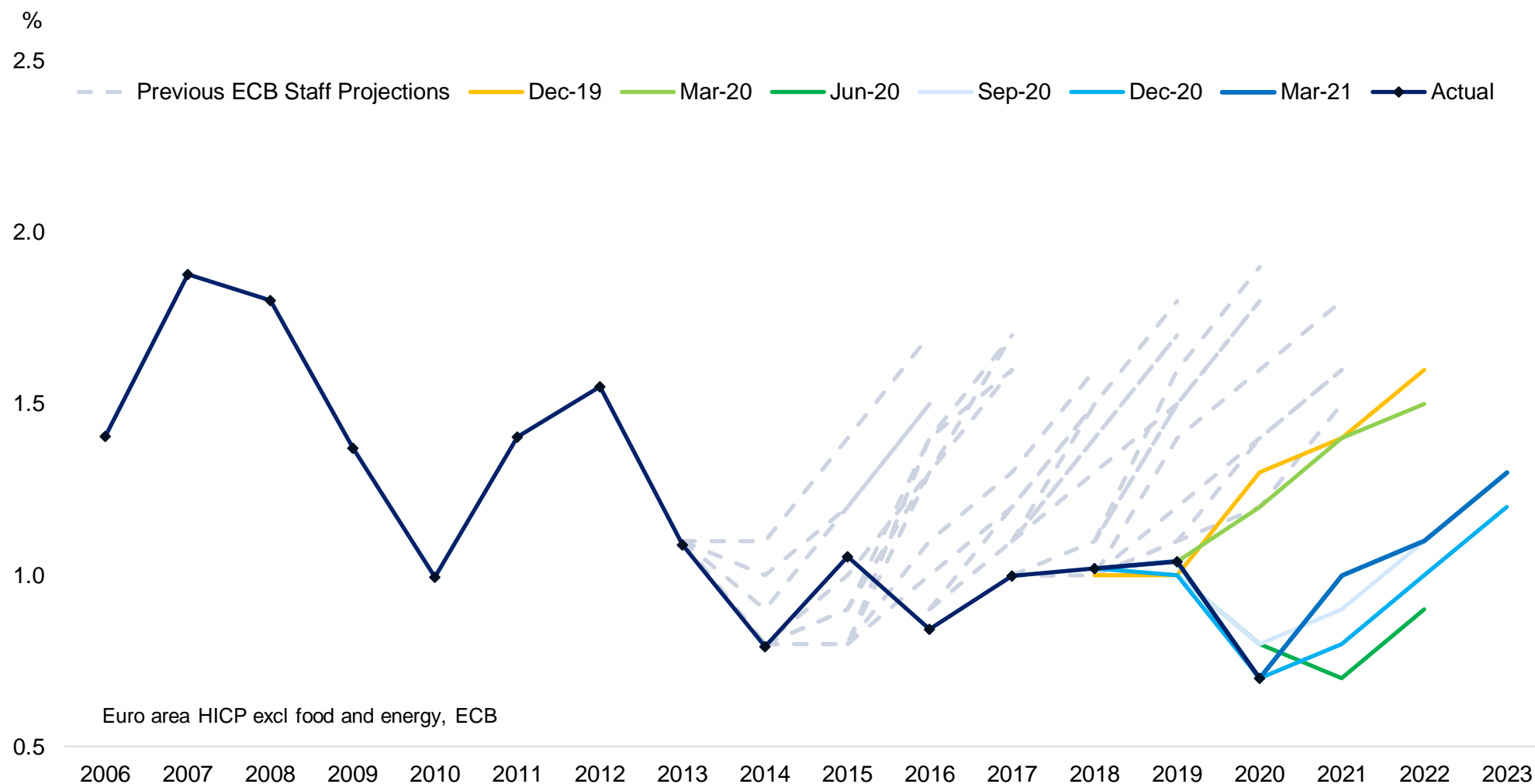
## Central Bank Balance Sheets, % GDP



Source: Algebris Investments, Bloomberg, BofAML Research. Data as of 31.05.2021

# The QE Infinity Trap

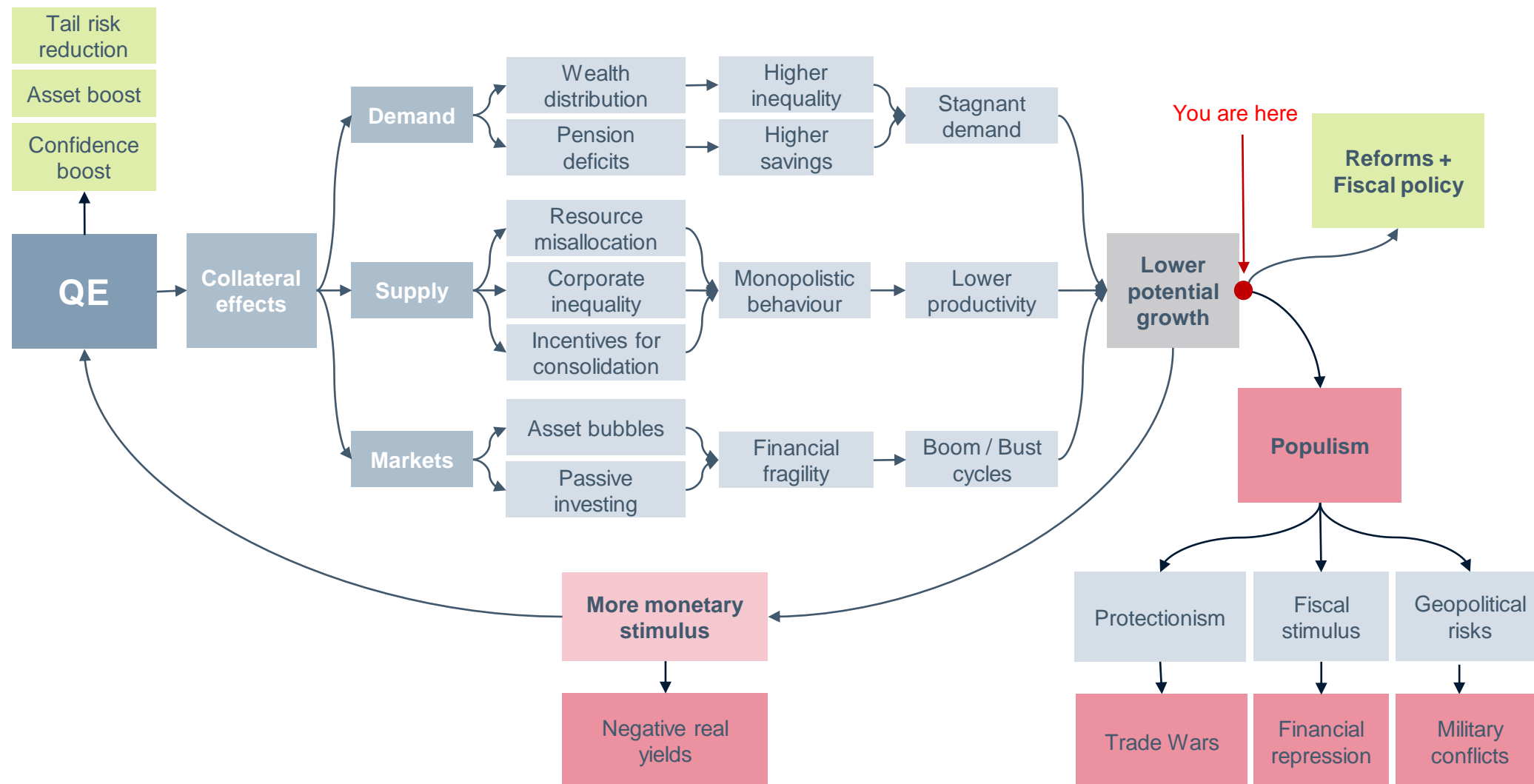
## Central Banks Historically Wrong On Inflation



Source: Algebris Investments, BoFAML, ECB, ECB quarterly staff projections since 2014

# Where are We in The Cycle

## The QE Infinity Trap



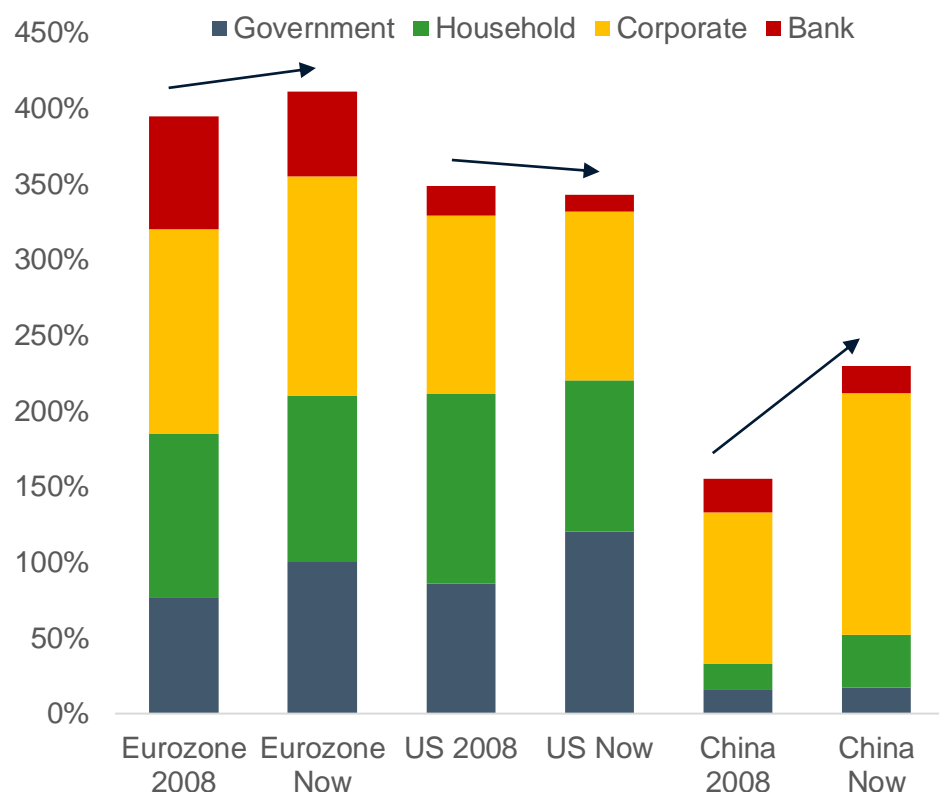
Source: Algebris Investments

# The QE Infinity Trap

## Debt Overhangs Declined Only Where Capital Markets Allowed Defaults

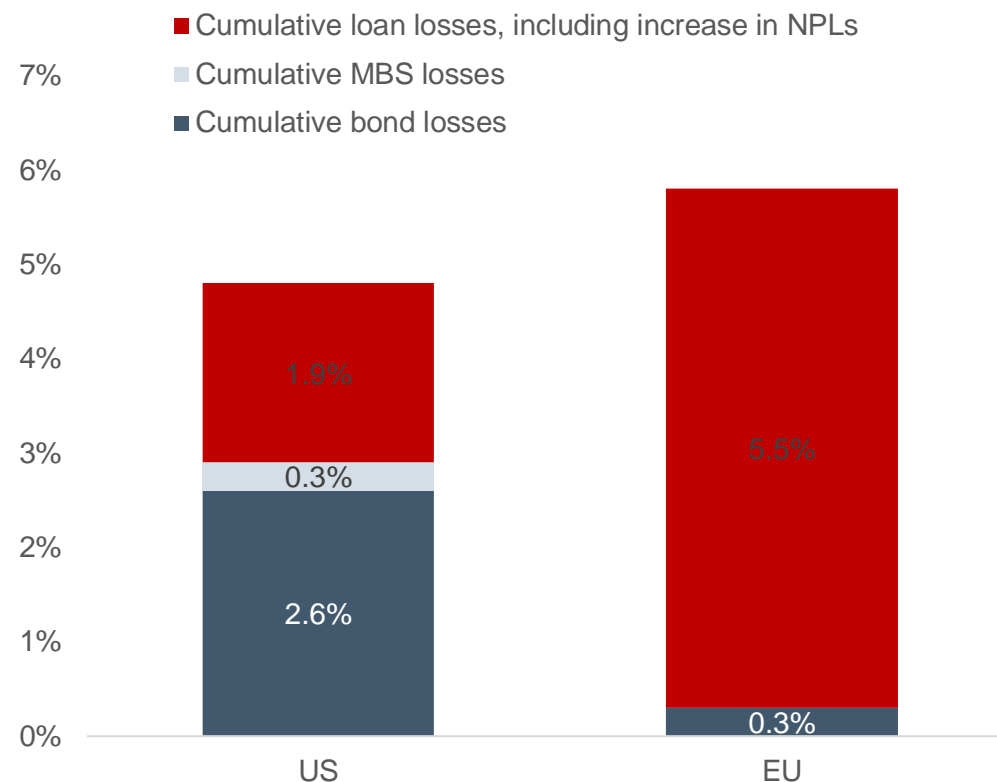
US private sector deleveraged, unlike Europe and China

Debt as % of GDP



US took losses in capital markets, Europe in banks

Default losses since the crisis as % of GDP



Source: Algebris Investments, Organisation for Economic Co-operation and Development (OECD), Eurostat, European Central Bank, Federal Reserve, Markit

Source: Moody's, European Central Bank, Federal Reserve, Fannie Mae, Freddie Mac

# The QE Infinity Trap

## Reforms and Revolutions

### Past

#### Economics

Economic theories built on assumptions of efficient markets, unlimited natural resources and growing populations

#### Technology/ Job markets

Technology boosts productivity  
Growth always creates new jobs

#### Society/ Politics

Wage growth and affordable housing  
Trade deals and globalisation

### Now

Markets are inefficient  
Limited resources, both natural and economic  
Ageing and shrinking populations

Automation/A.I./sharing economy → Jobless growth, income polarisation and lower wage growth  
Low interest rates → resource misallocation → low productivity / oligopolistic behaviour → low quality & paid jobs →  
Phillips curve no longer working?

Asset appreciation > wage growth  
Rising inequality → Populism & more inefficiencies / nationalism and protectionism (Dornbusch/Edwards)

Source: Algebris Investments

# The QE Infinity Trap

## Reforms and Revolutions

	Past	Now
<b>Geopolitics</b>	Western powers influence / dominate / dictate	Emerging Powers: China, India, Middle East. Terrorism and nuclear threats
<b>Fiscal policy</b>	Recession → fiscal stimulus → multiplier effect  “Trickle Down”  Recession → lower interest rates → credit growth → higher investment and consumption	High public debt → less spending room Balance sheet recession → investment and consumption no longer responsive to interest rates given over-leverage Consumers look at permanent future income: low interest rates depress savings/spending. No trickle-down when tax systems become regressive (Zucman)
<b>Monetary policy</b>	Low interest rates today → growth and inflation boost → higher interest rates in the future	Low interest rates today → asset bubbles and growing inequality, wage stagnation/hysteresis, financial fragility → persistent low interest rates in the future? (BIS/Borio)

Source: Algebris Investments

# The QE Infinity Trap

## Keynes vs Friedman vs Bernanke vs Powell

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### John Maynard Keynes:

*"In so far as the inducement to the individual to save depends on the future return which he expects, it clearly depends not only on the rate of interest but on the fiscal policy of the government. [...] If fiscal policy is used as a deliberate instrument for the more equal distribution of incomes, its effect in increasing the propensity to consume is, of course, all the greater."*

The General Theory of Employment, Interest, and Money, 1936

### Milton Friedman:

*"Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output. [...] A steady rate of monetary growth at a moderate level can provide a framework under which a country can have little inflation and much growth."*

The Counter-Revolution in Monetary Theory, 1970

### Ben Bernanke:

*"The U.S. government has a technology, called a printing press (or today, its electronic equivalent), that allows it to produce as many U.S. dollars as it wishes at no cost."*

November 2002

*"We didn't allow the fact that interest rates were very low to fool us into thinking that monetary policy was accommodative enough."*

Speech at the Economic Club of Indiana, Indianapolis, 2012

### Jerome Powell:

*"When you and I studied economics a million years ago M2 and monetary aggregates seemed to have a relationship to economic growth," Powell said, referring to one main measure of the money in public hands. "Right now ... M2 ... does not really have important implications. It is something we have to unlearn, I guess".*

Congressional Testimony, February 2021

# The QE Infinity Trap

Central Banks beat Growth Assets (Return Ratio, Aug 2010 = 1)

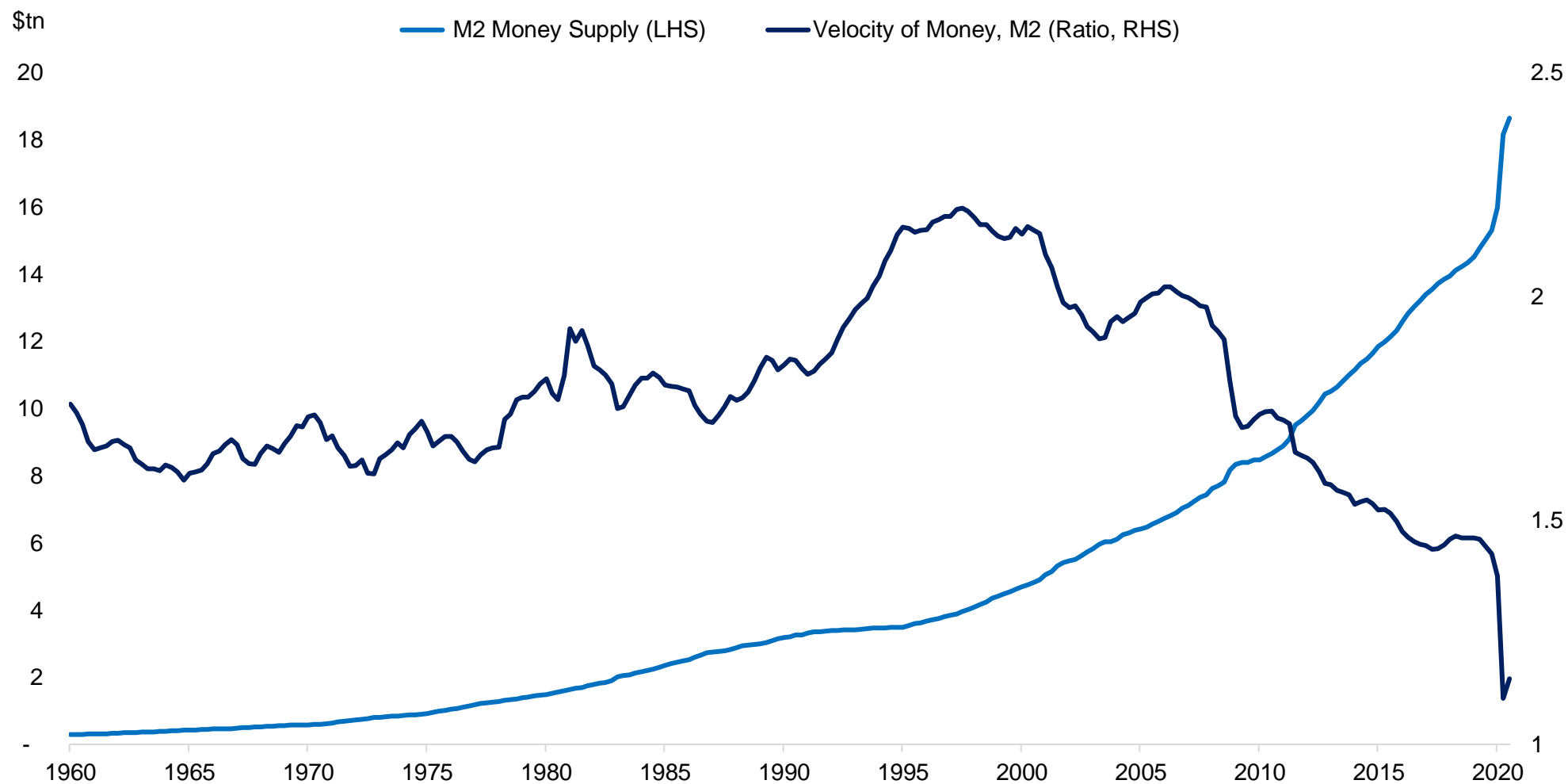


Source: Algebris Investments, Bloomberg. Data as of 04.06.21

Methodology: Average across the normalized returns of the below ratios; Gold / Copper, US BB/US CCC, MSCI World Large Cap/ MSCI World Small Cap, IDR Currency/ ZAR Currency, MSCI World Growth Index/ MSCI World Value Index

# The QE Infinity Trap

## US M2 Money Supply vs Velocity

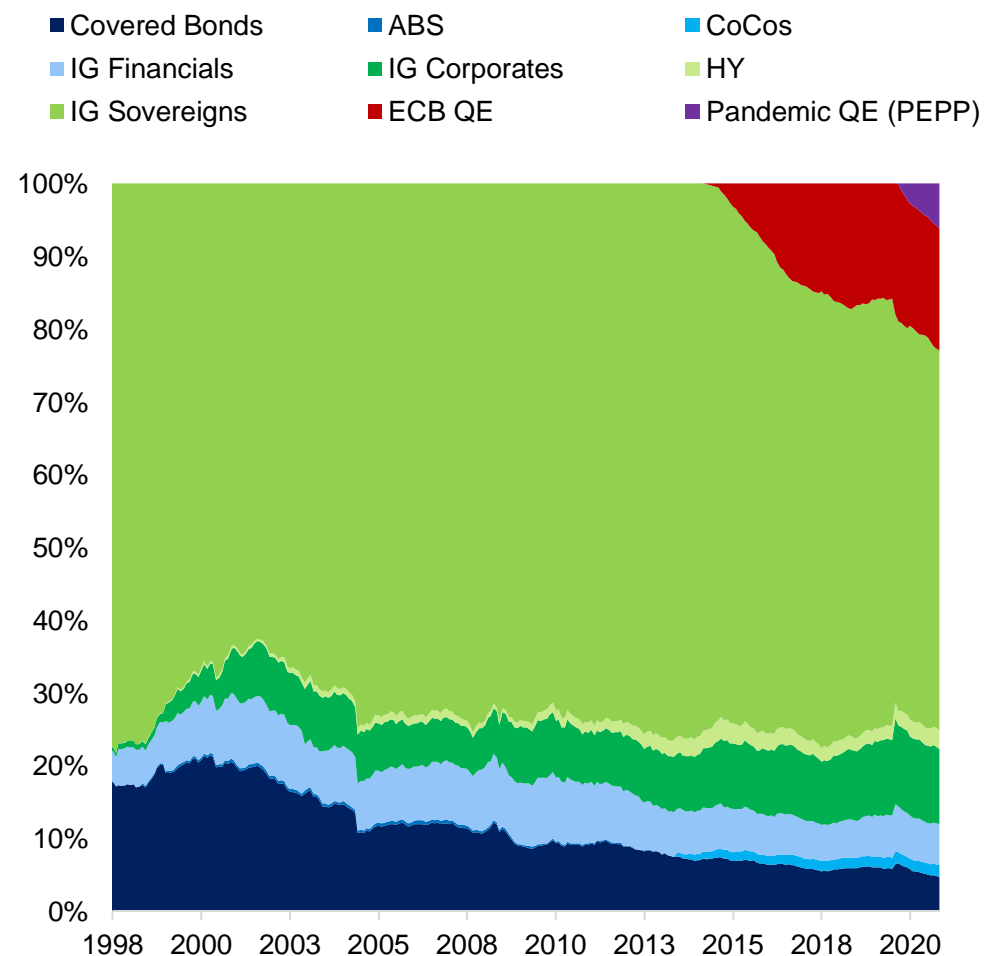


Source: Algebris Investments, Bloomberg

# The QE Infinity Trap

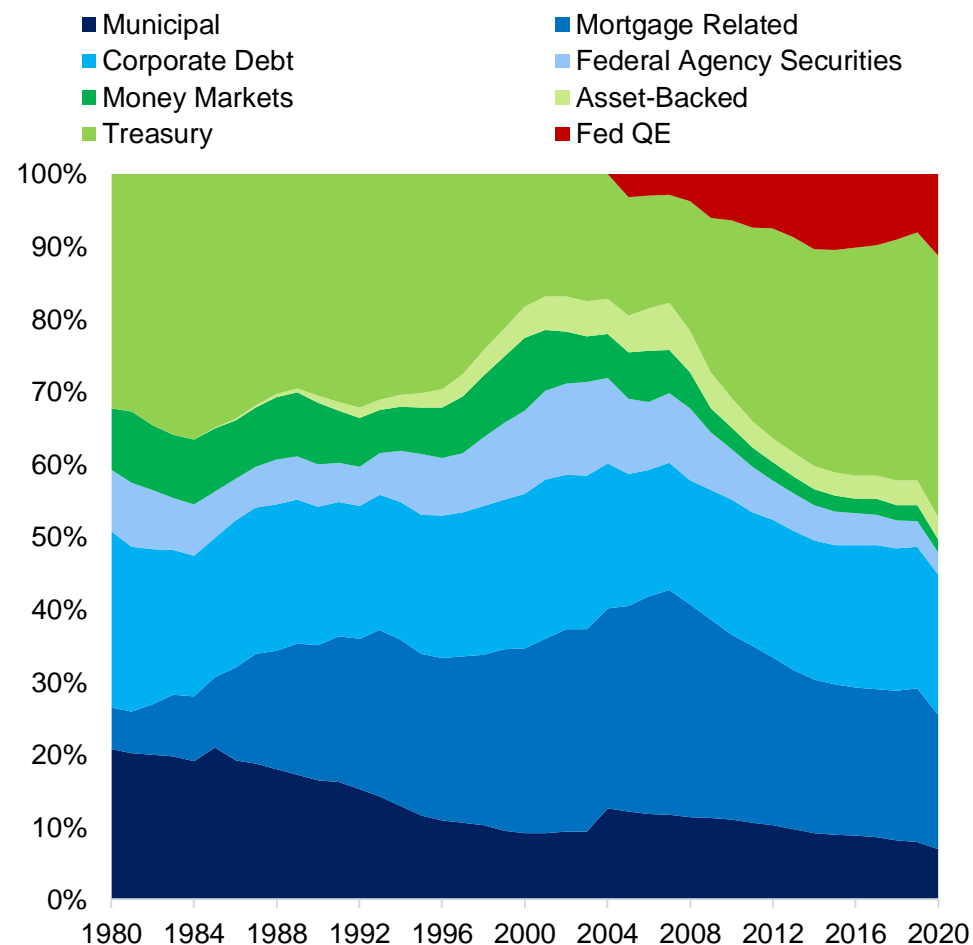
## QE Is Distorting Bond Markets

ECB QE and € bond markets



Source: European Central Bank, Bloomberg, Algebris Investments . Data as of May-21

Fed QE and \$ bond markets



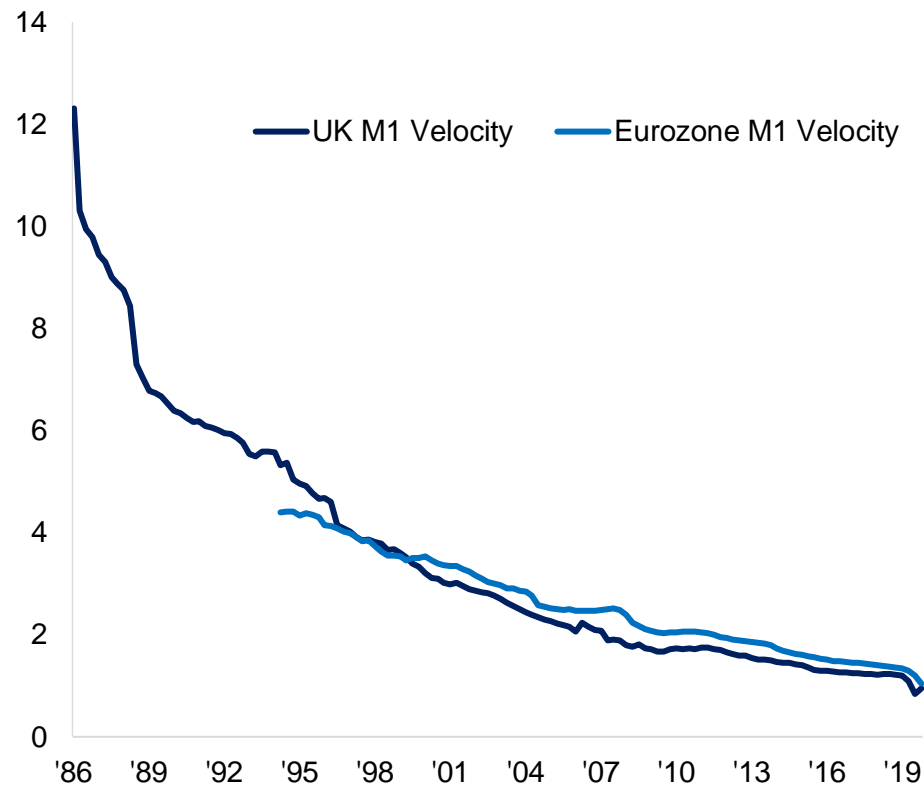
Source: The Securities Industry and Financial Markets Association, Bloomberg, FRED, Algebris Investments .

# The QE Infinity Trap

## Keynesianism and Friedmanism Broke Down in an Over-levered World

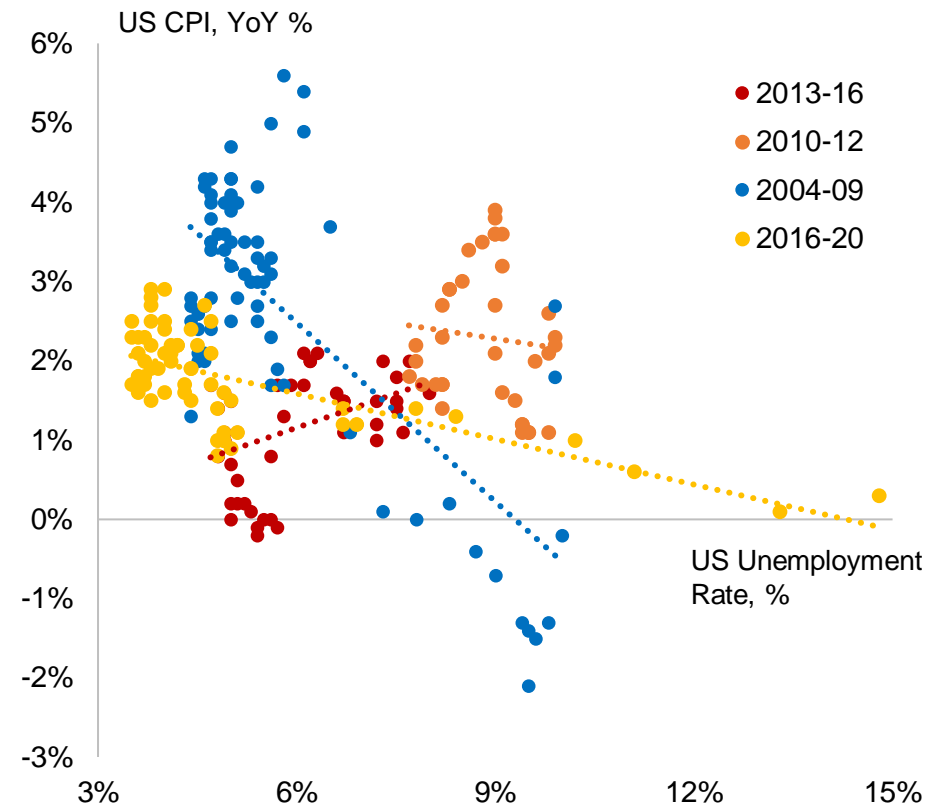
Monetary stimulus no longer means more growth

UK and EU M1 Velocity



Inflation and unemployment don't follow the Phillips Curve

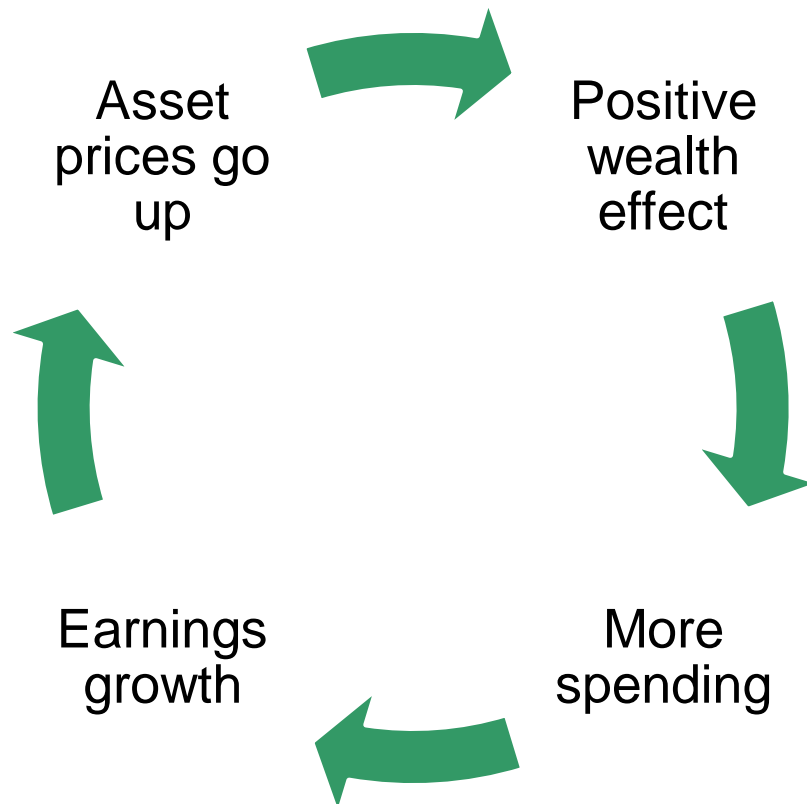
US Inflation vs unemployment, 2004 - 2020



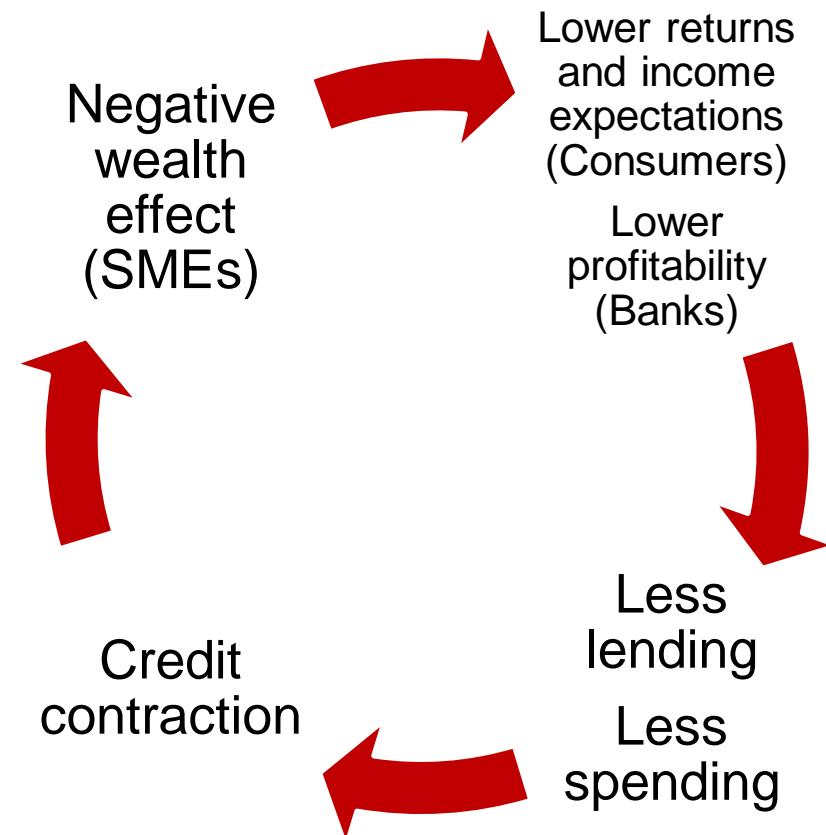
# The QE Infinity Trap

## NIRP: Theory vs Practice (Adaptive Expectations)

### Theory



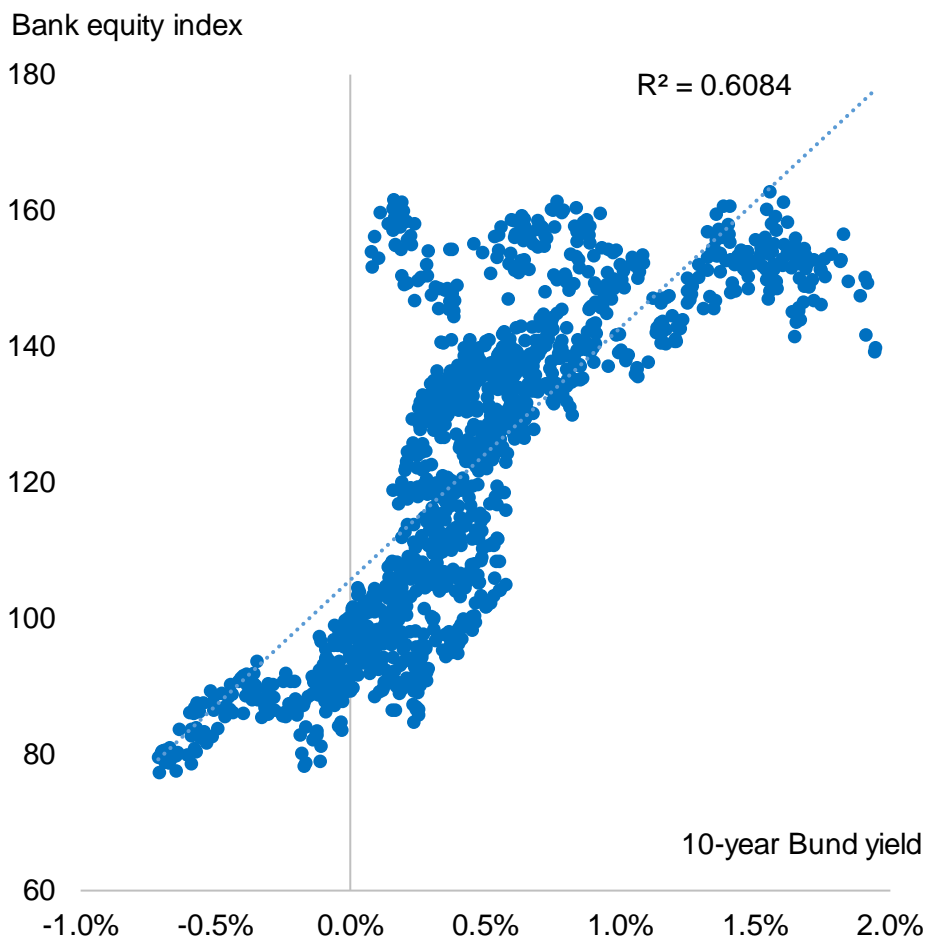
### Practice



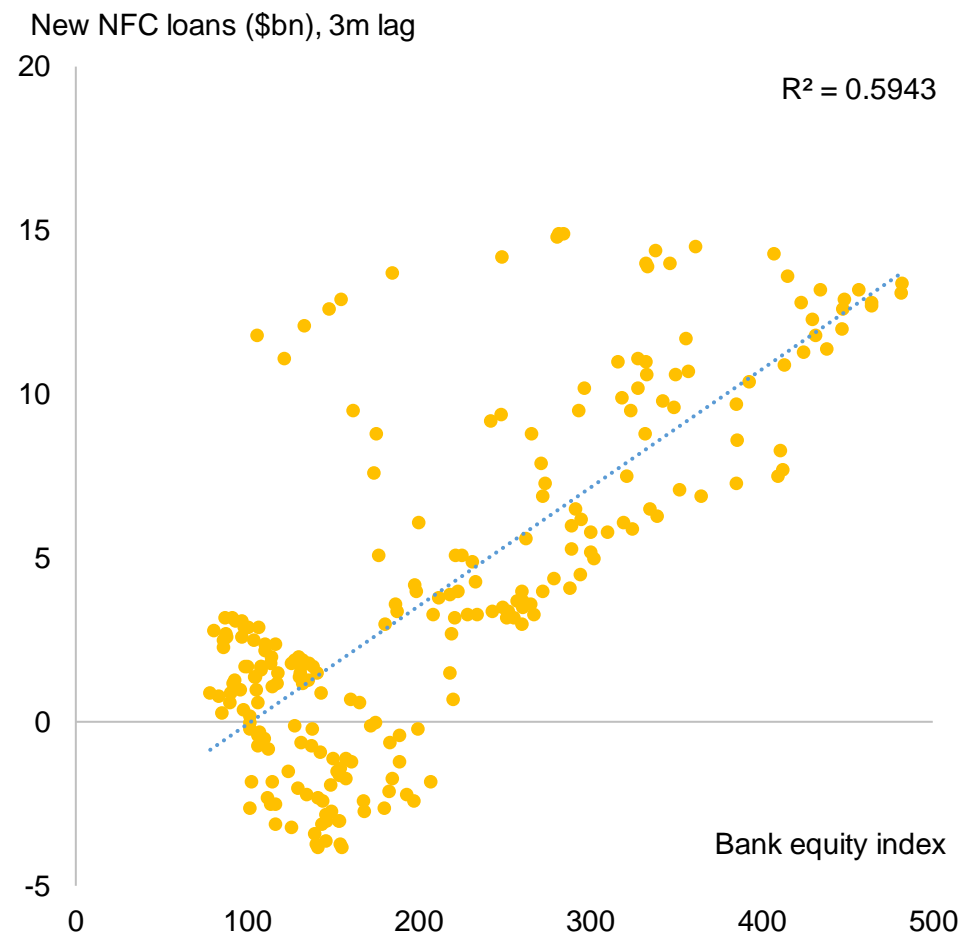
# The QE Infinity Trap

## Bank Equity Valuations and Lending Volumes are Linked

Low interest rates hurt bank valuations...



... which in turn hinders lending activity



Source: Algebris Investments , Bloomberg. Note: Bank equity index = Euro Stoxx Banks (price index), 2014 - 2019

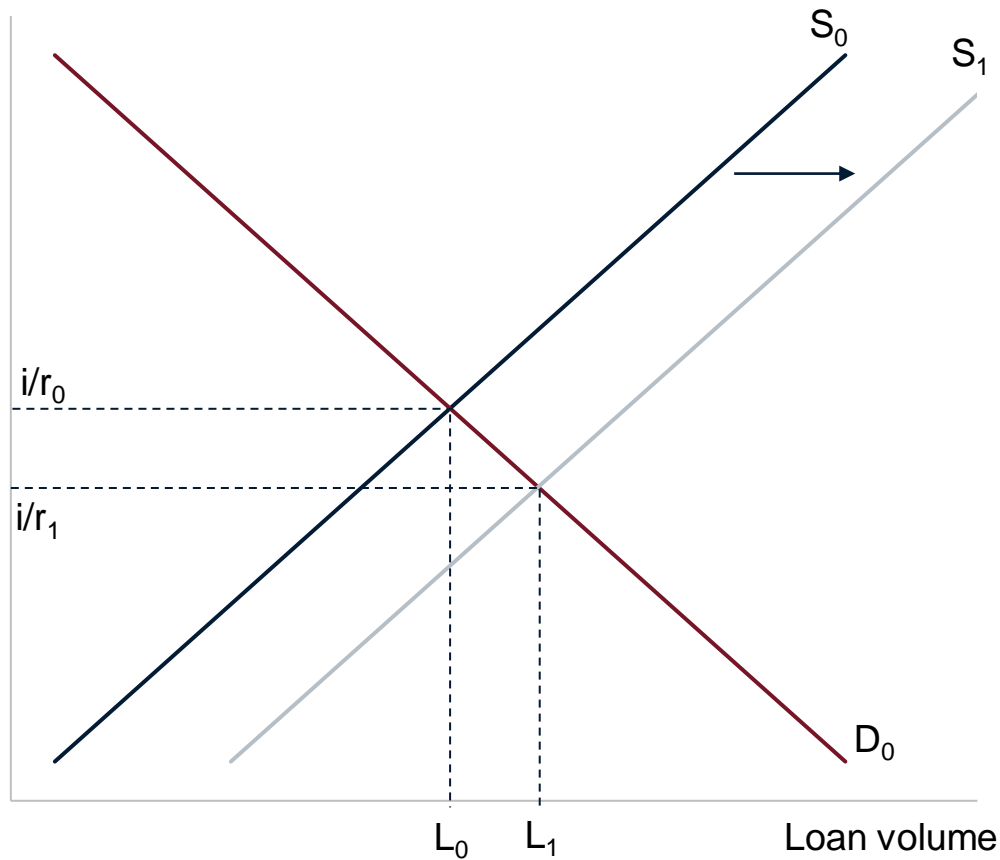
Source: Algebris Investments , Bloomberg. Note: Bank equity index = Euro Stoxx Banks (price index), New NFC loans = Flow of Eurozone bank loans to non-financial corporates, 1997 - 2019

# The QE Infinity Trap

## Loan Demand vs Supply with Demand Shocks and Supply Constraints

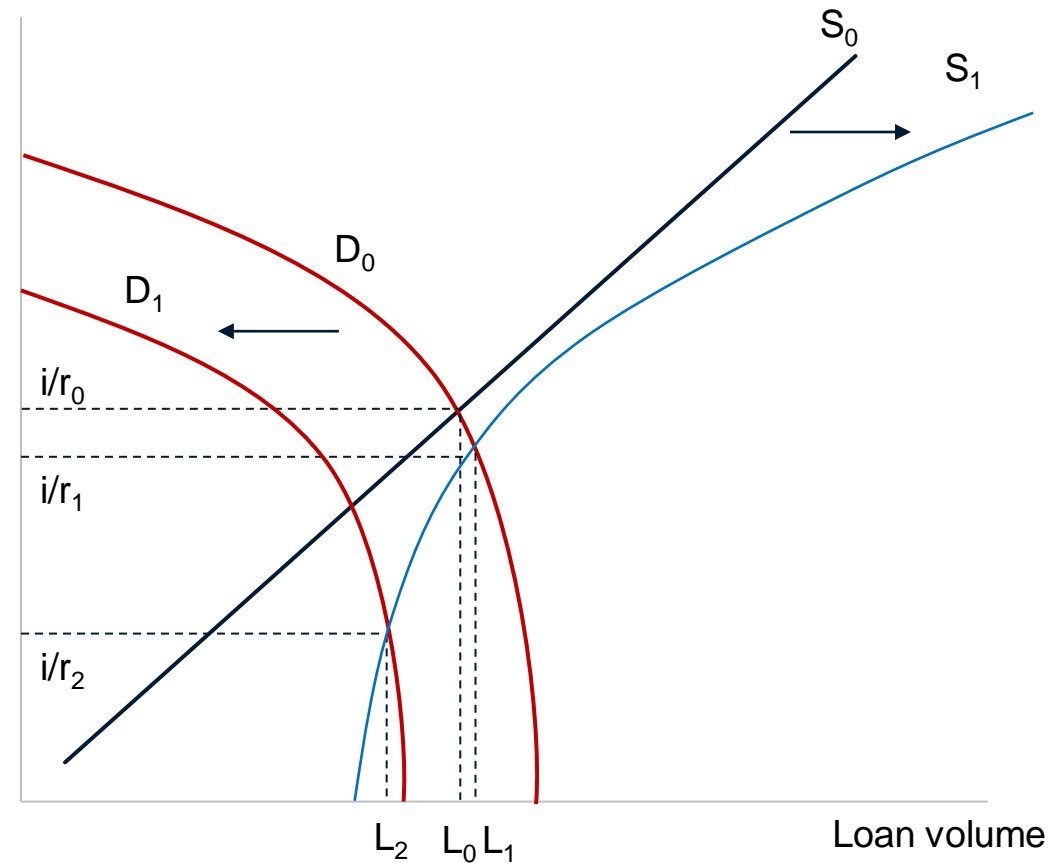
### Theory

Interest rate, %



### Practice

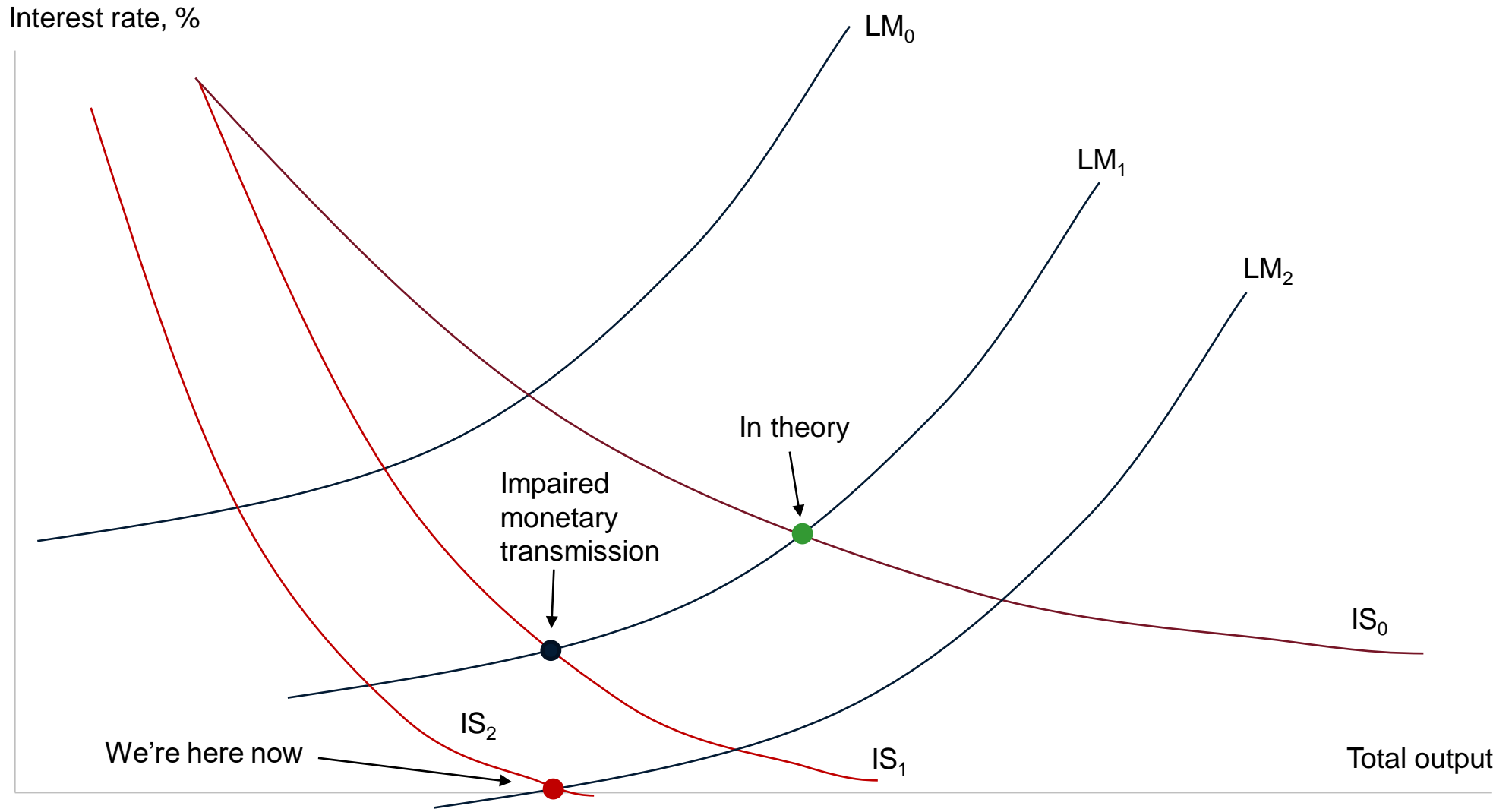
Interest rate, %



Source: Algebris Investments

# The QE Infinity Trap

## IS-LM in QE Infinity

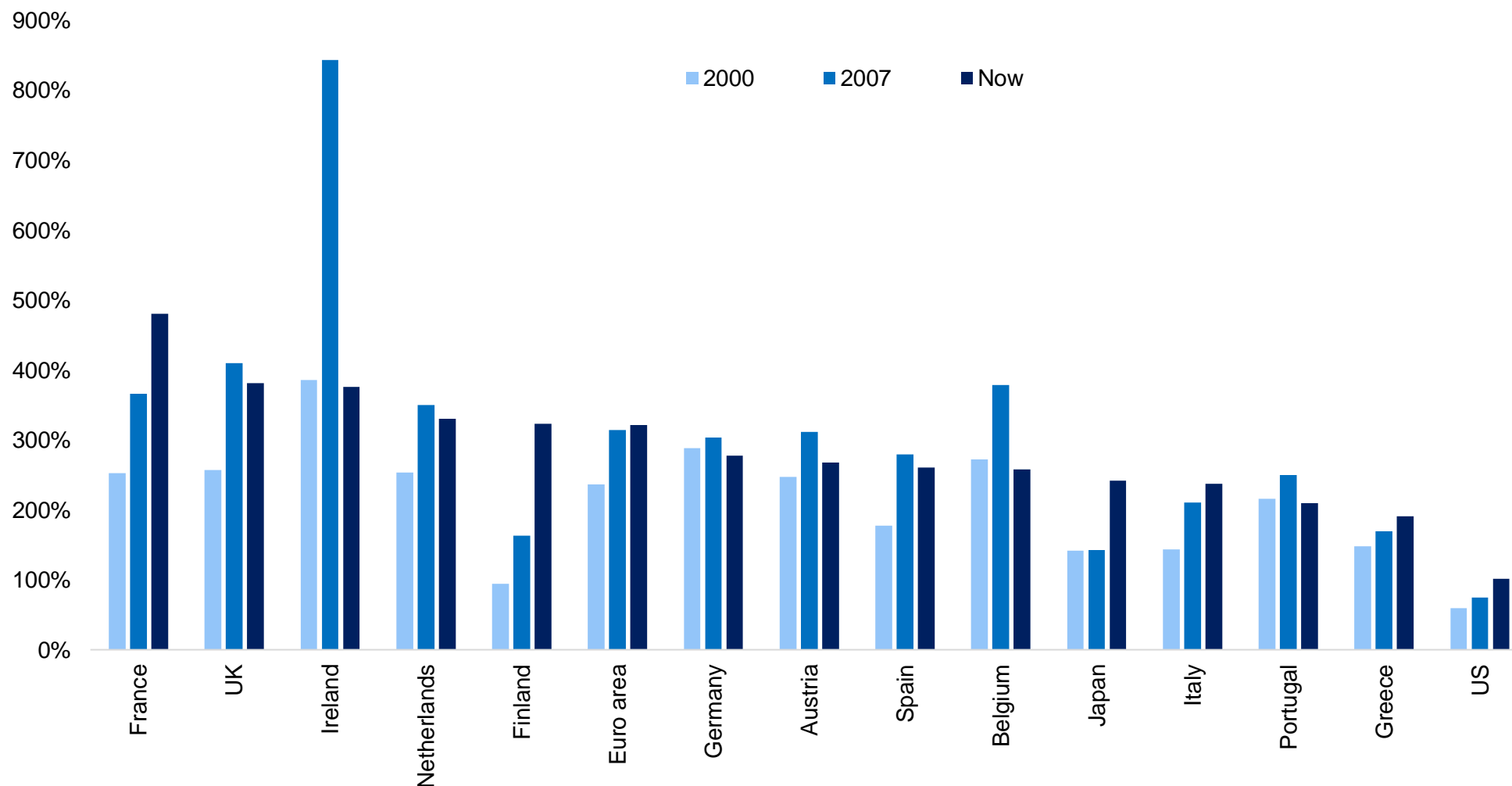


Source: Algebris Investments

# The QE Infinity Trap

## Europe Relies on Banks for Credit Intermediation, but Banks Are Still Too Large...

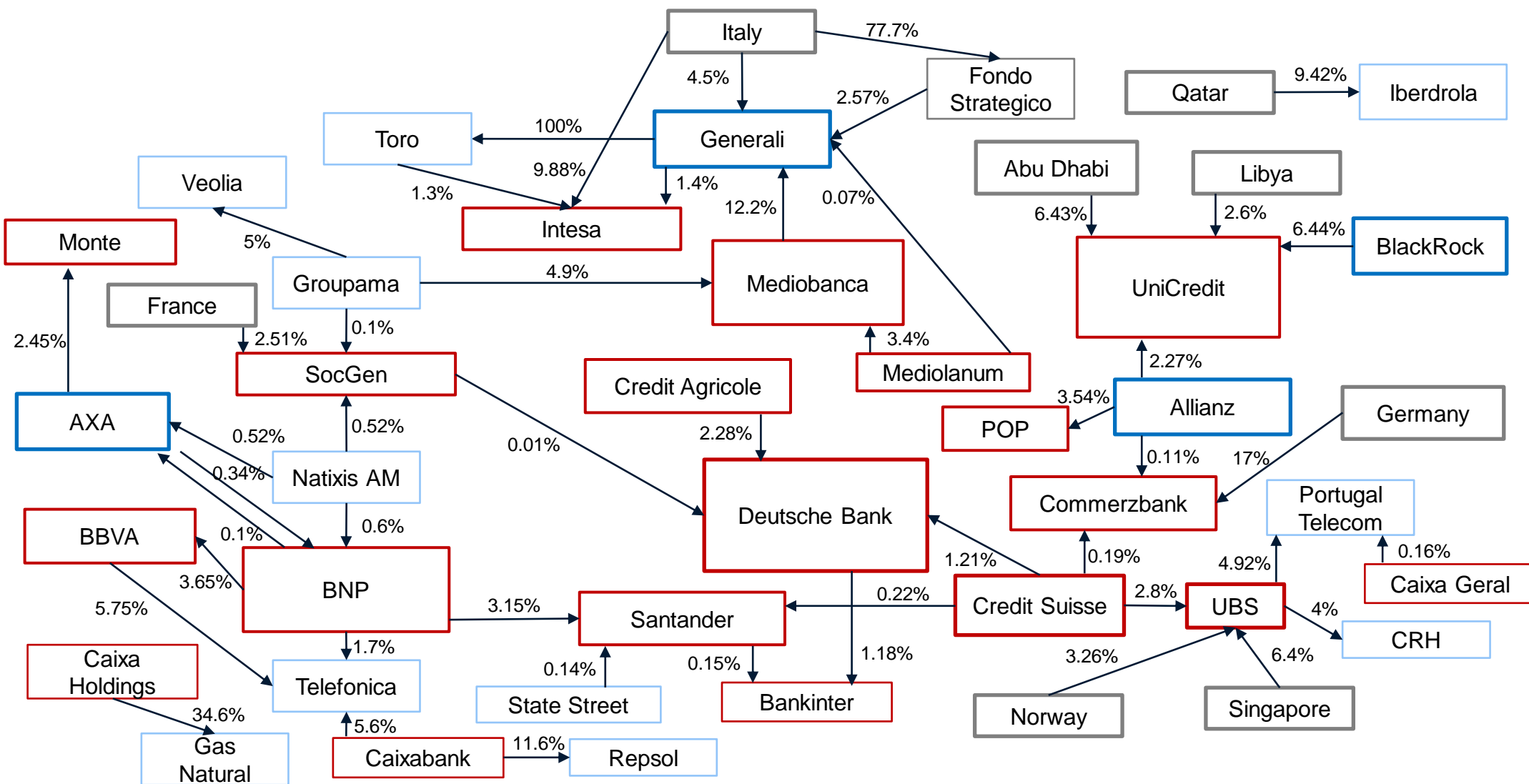
Bank Assets, % GDP



Source: Algebris Investments, ECB, FRED, BoE, BoJ

# The QE Infinity Trap

## ... and Overcomplex

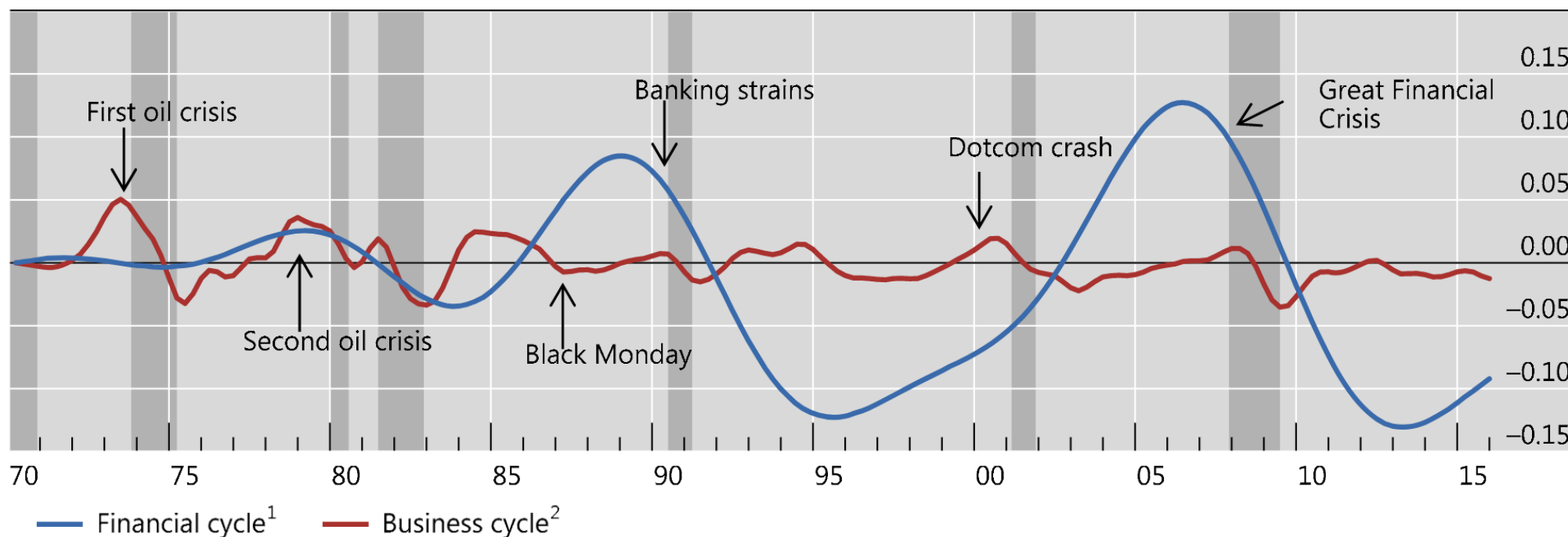


Source: Algebris Investments . Bloomberg

# The QE Infinity Trap

## The Financial Cycle: No Machine of Perpetual Motion

Financial cycles and crises are becoming longer and deeper

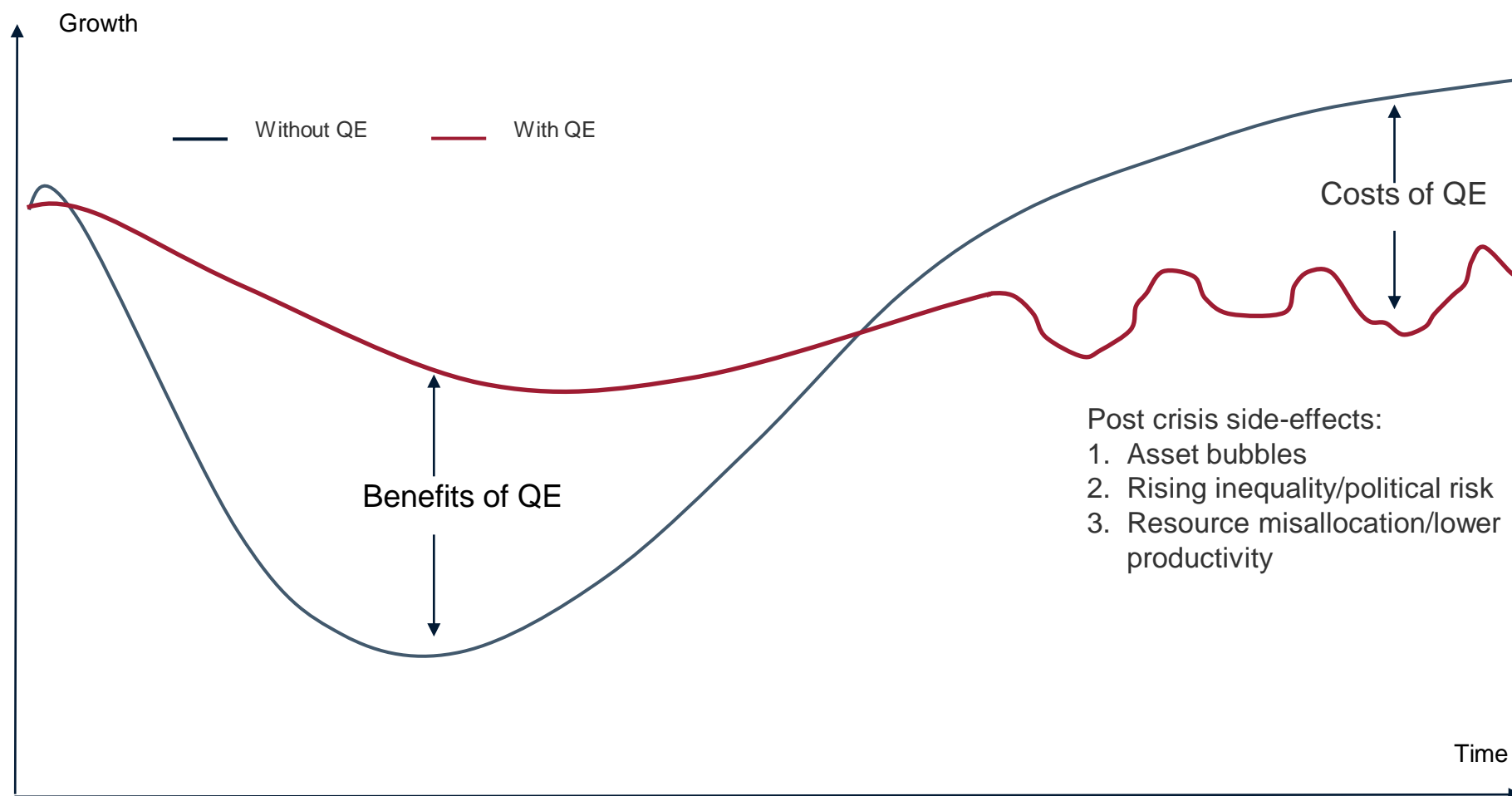


Note: The graph compares the financial cycle with traditional measures of the business cycle.

1. The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices.
2. The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years.

# The QE Infinity Trap

## Payback Time – Prepare to Pay for QE



Source: Algebris Investments

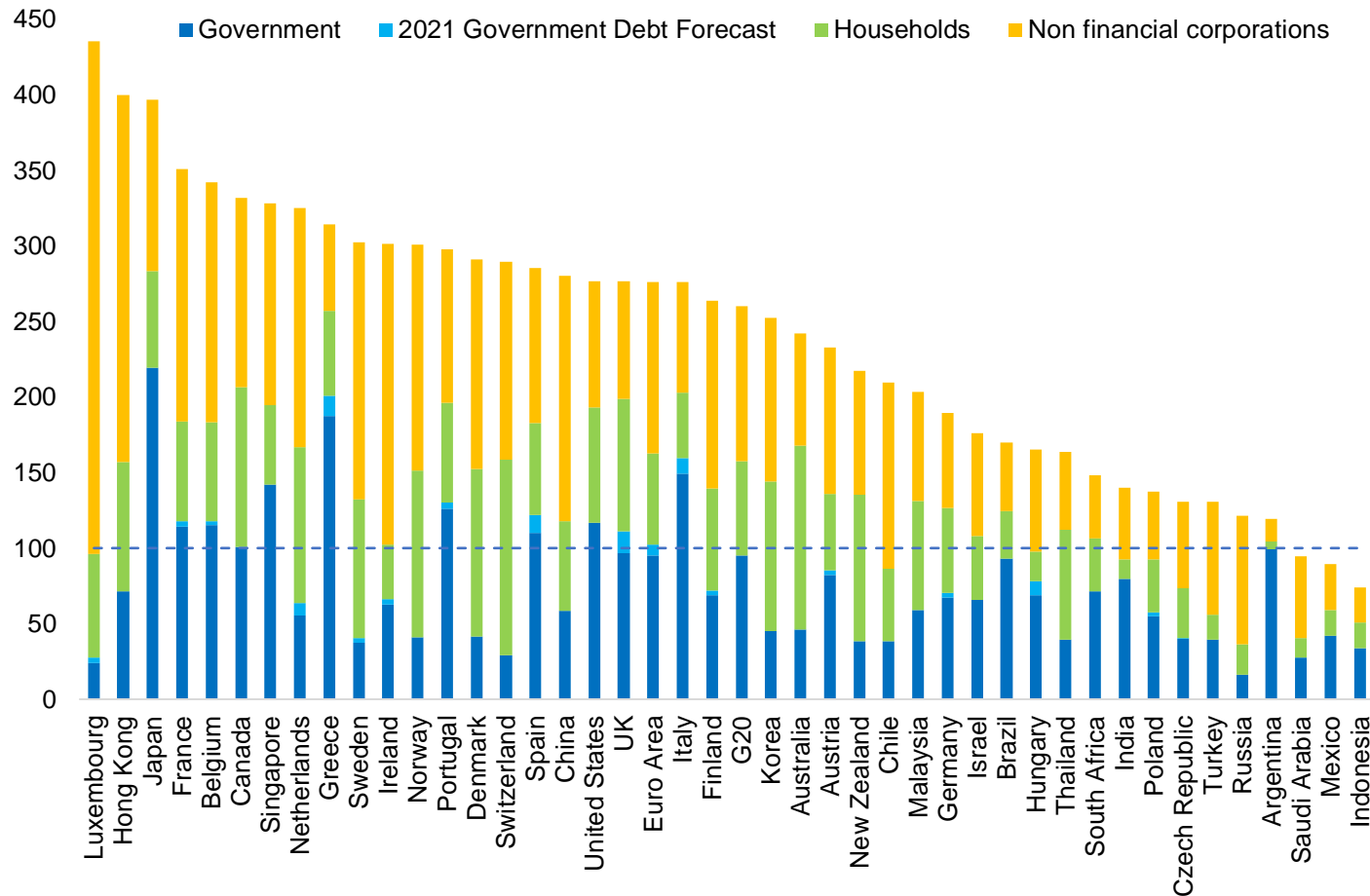
## 3. Secular Stagnation

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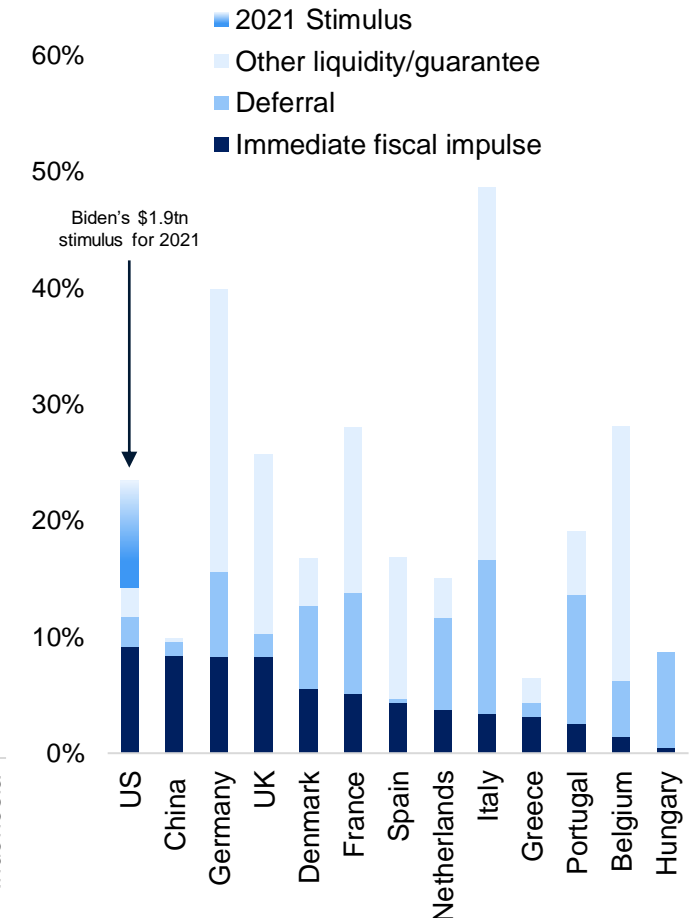
# Secular Stagnation

## Public and Private Debt Overhangs and Fiscal Responses post Covid-19

Total credit by segment of the economy, % GDP



Fiscal Response to Covid-19

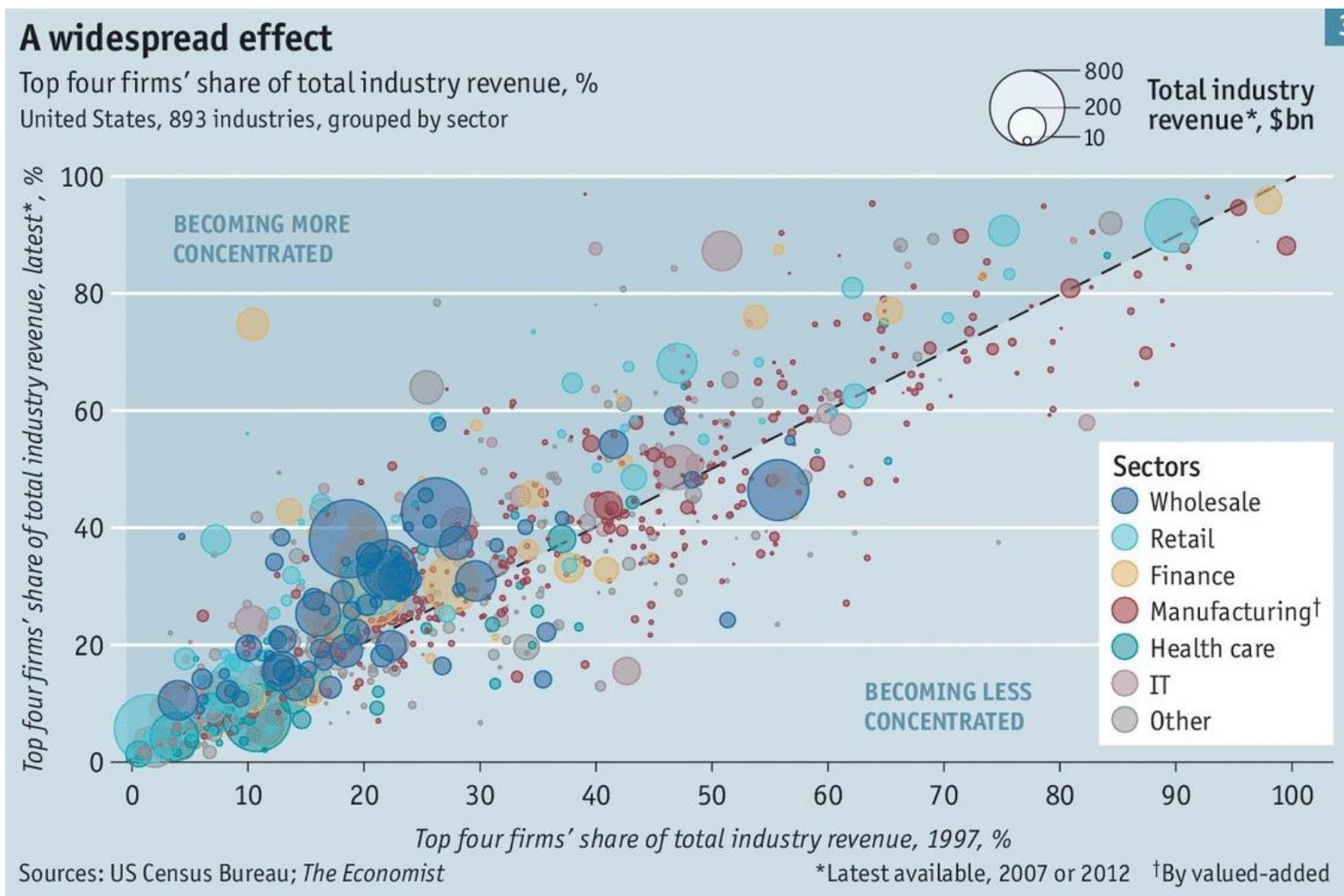


Source: Algebris Investments, BIS, European Commission; Autumn 2020 Economic Forecast  
Data as of Q2 2020.

Note The category 'Other liquidity/guarantee' includes only government-initiated measures (excludes central bank measures) and shows the total volume of private sector loans/activities covered, not the amount the government put aside for the liquidity support or guarantee (the amount of which is multiplied to cover a much larger amount of private sector activity).  
Latest update 18.11.2020 (UK, Spain). Cut-off date is earlier for some countries.

# Secular Stagnation

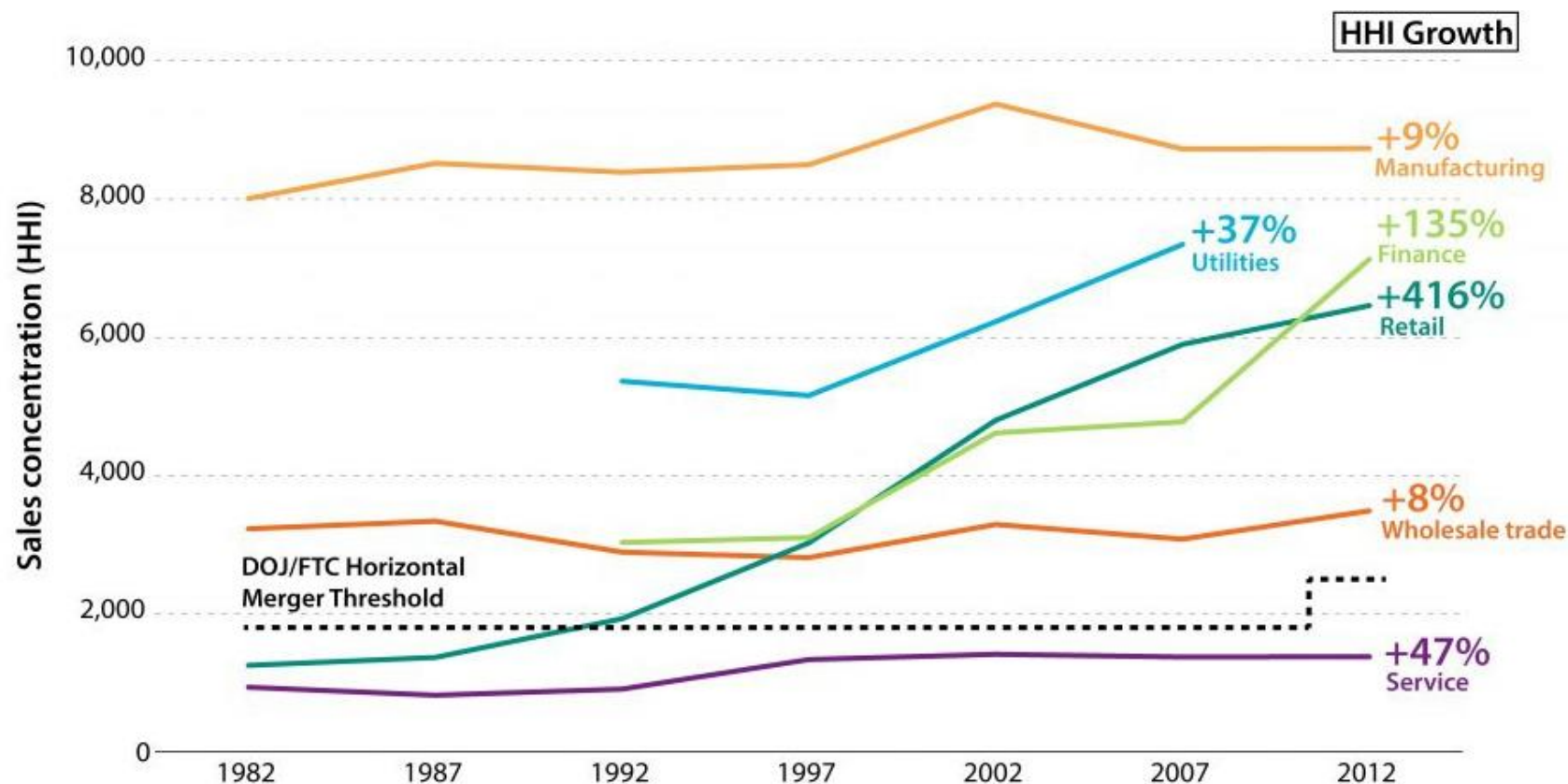
## Market Concentration and Monopolistic Behaviour



Source: The Economist

# Secular Stagnation

## Market Concentration and Growth by Industry

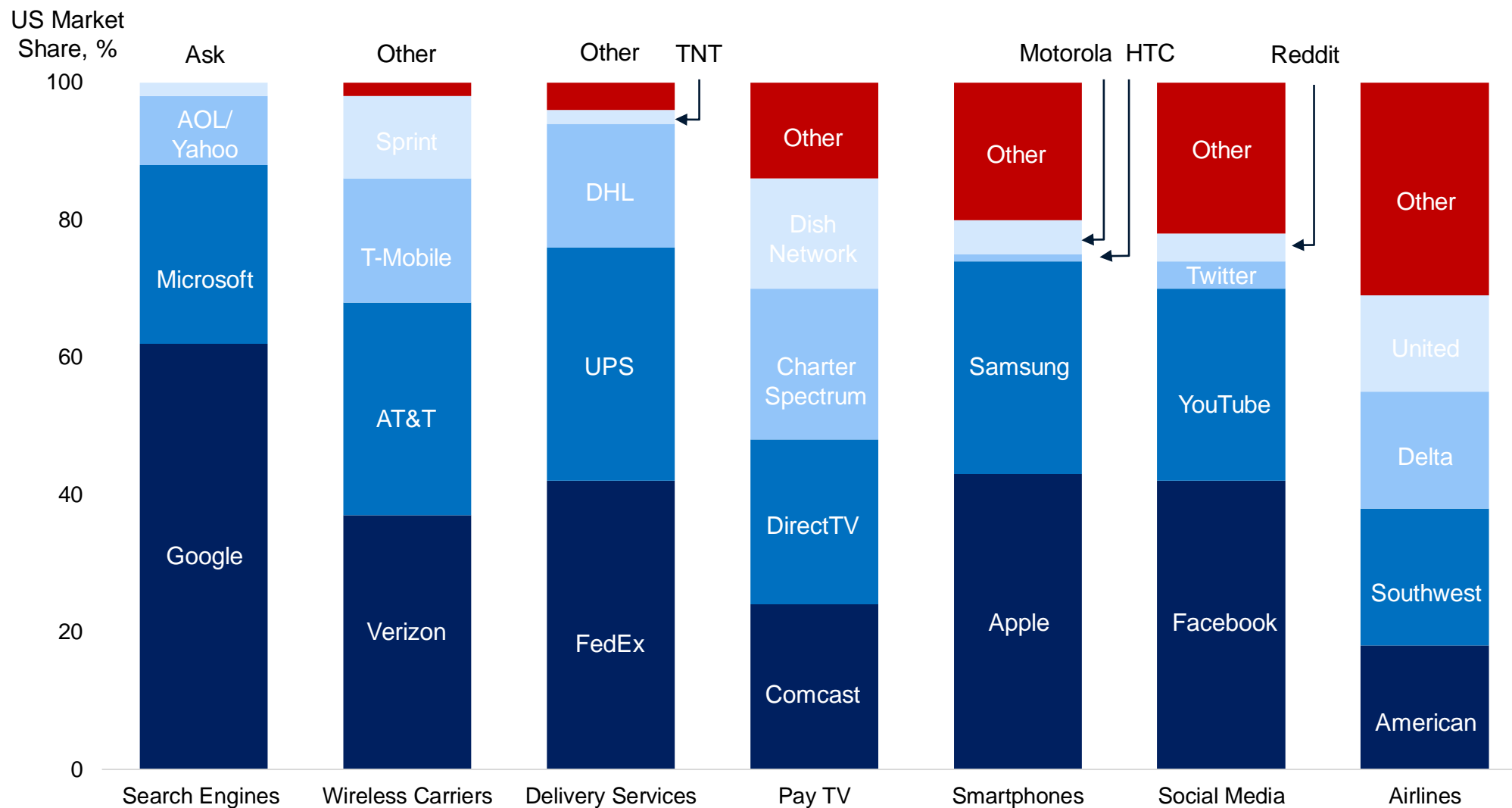


Source: Algebris Investments, The Hamilton Project, Autor et al. 2017.

Note: Market concentration refers to the Herfindahl-Hirschman Index (HHI; sales). After defining the boundaries of a market and calculating each firm's share (e.g. of total sales), HHI is calculated by summing the squared market shares of all firms, then multiplying the sum by 10,000. HHI growth is for the date range available (1982 – 2012 for all series except Utilities and Finance). The dashed line indicates the threshold market concentration established by the US department of Justice and Federal Trade Commission's Horizontal Merger Guidelines above which a proposed merger would trigger enhanced scrutiny.

# Secular Stagnation

## US Market Concentration by Firm and Industry

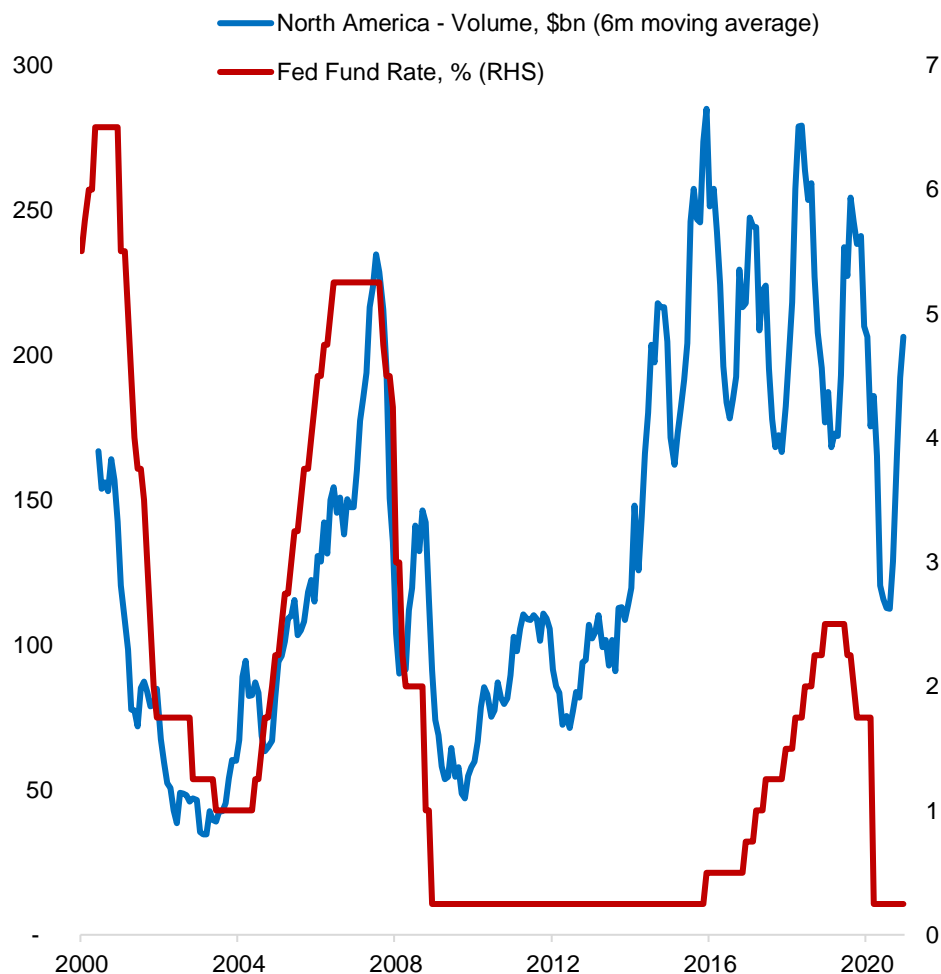


Source: Algebris Investments, The Hamilton Project, comScore 2018a, 2018b (search engines and smartphones), FierceWireless 2018 (wireless carriers), DHL 2018 (delivery services), Informity 2018 (Pay TV), MarketingCharts 2016 (social media), Bureau of Transportation Statistics 2018a (airlines) Note: Social media shows the share of all visits, smartphones and wireless carriers show the share of subscribers, airlines show the share of domestic revenue passenger miles. Data for social media are for November 2016, data for search engines, wireless carriers, and pay TV are for December 2017, data for delivery services are for 2017 for both North and South America, data for smartphones and airlines are for January 2018. The delivery firm TNT is a subsidiary of FedEx

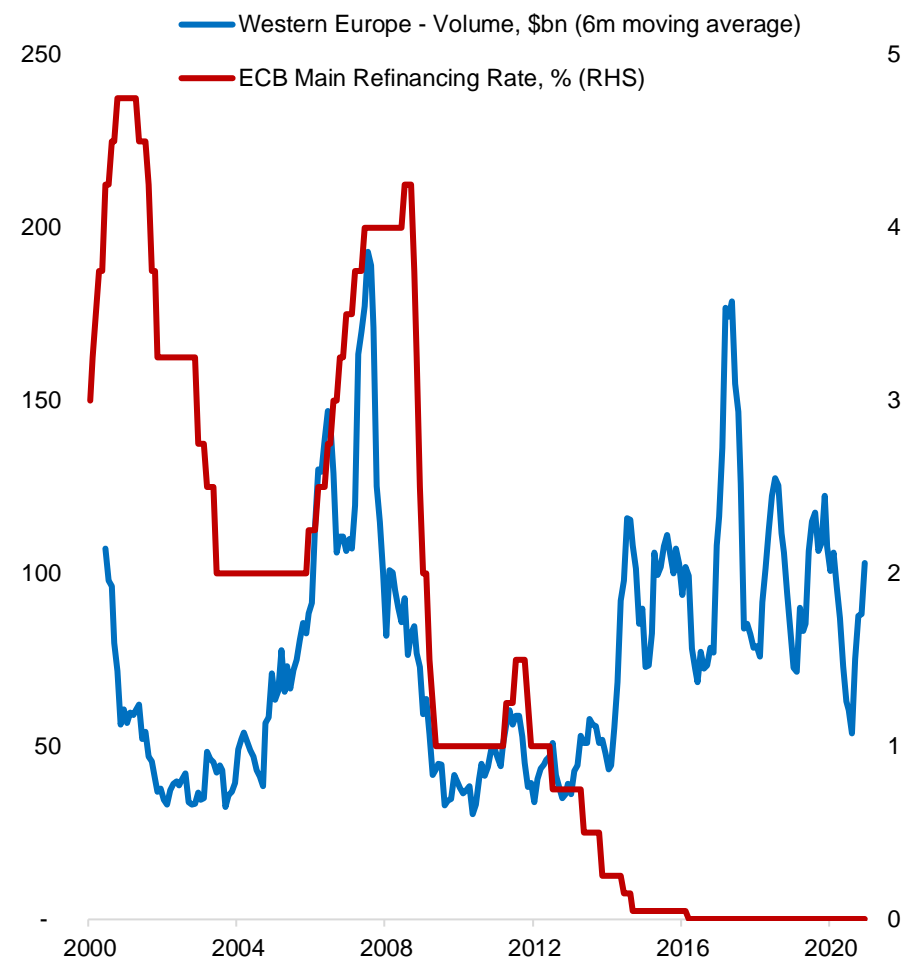
# Secular Stagnation

## The Relationship Between M&A Volumes and Interest Rates

US – M&A Volumes vs Fed Fund Rate



Europe – M&A Volumes vs ECB Main Refinancing Rate

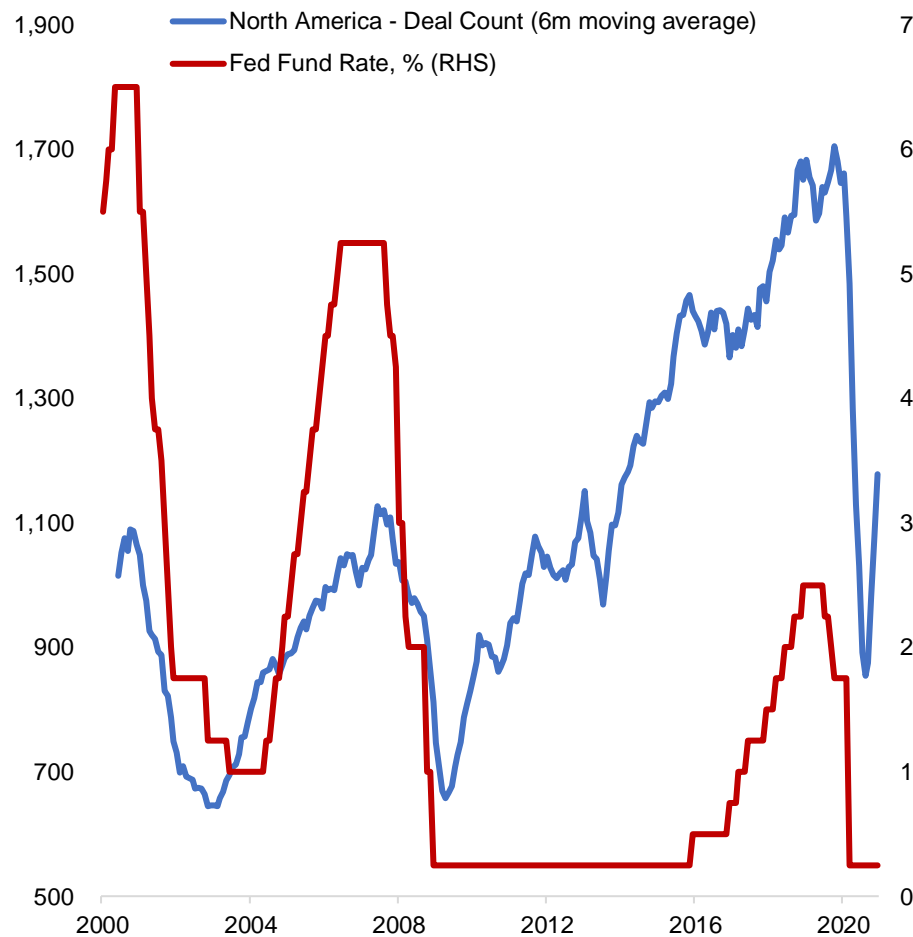


Source: Algebris Investments, Bloomberg

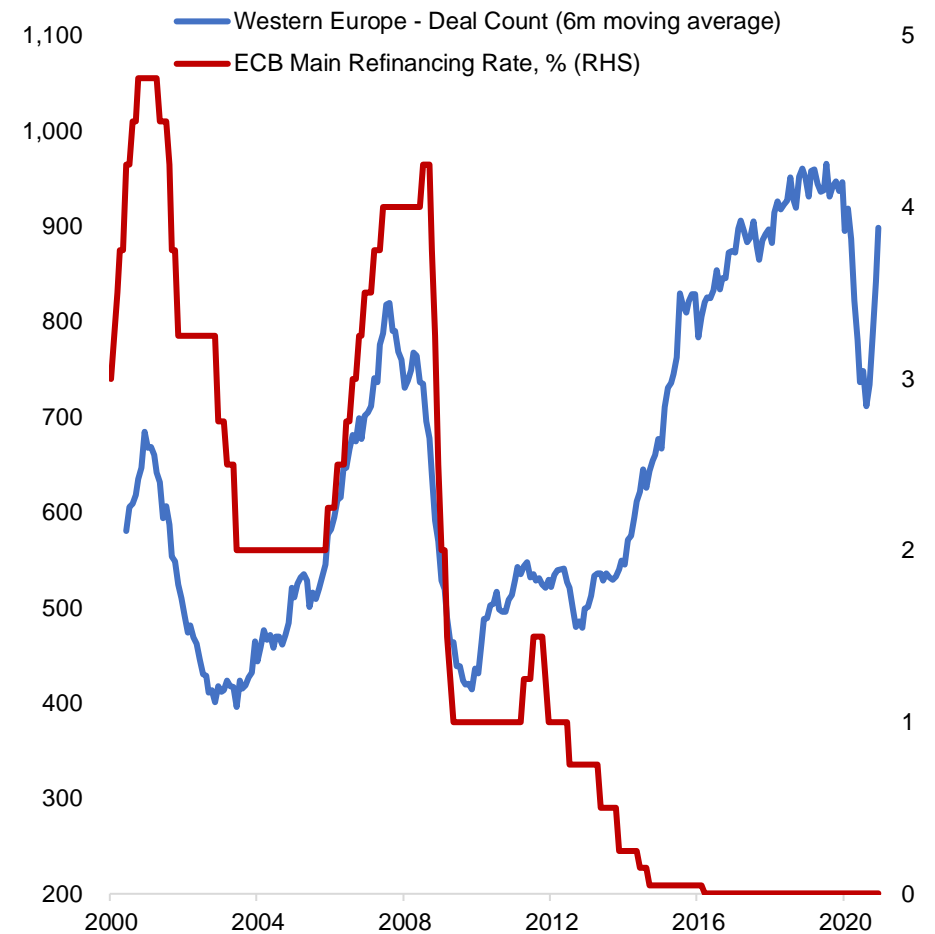
# Secular Stagnation

## The Relationship Between M&A Deals and Interest Rates

US – M&A Deal Count vs Fed Fund Rate



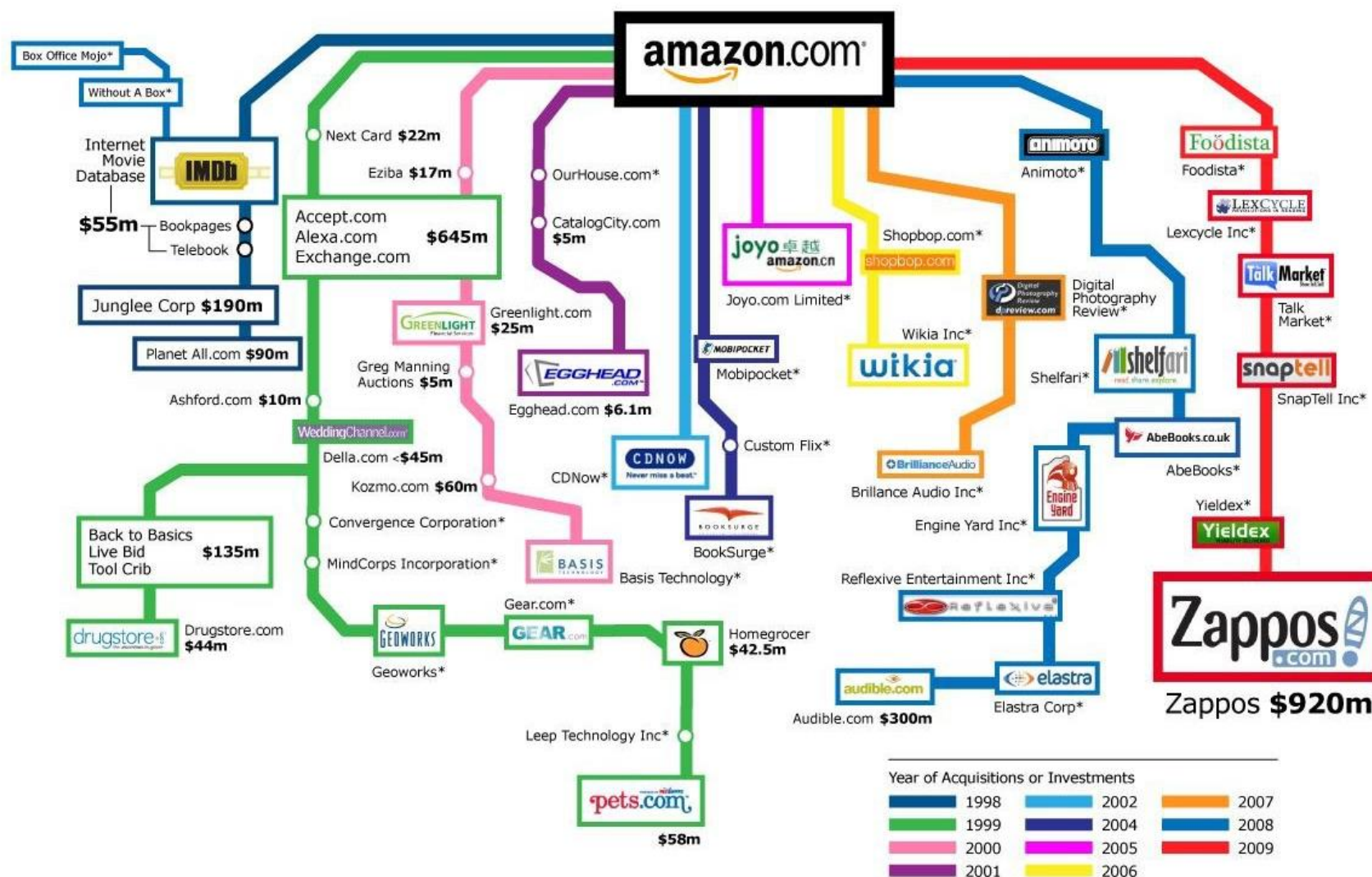
Europe – M&A Deal Count vs ECB Main Refinancing Rate



Source: Algebris Investments, Bloomberg

# Secular Stagnation

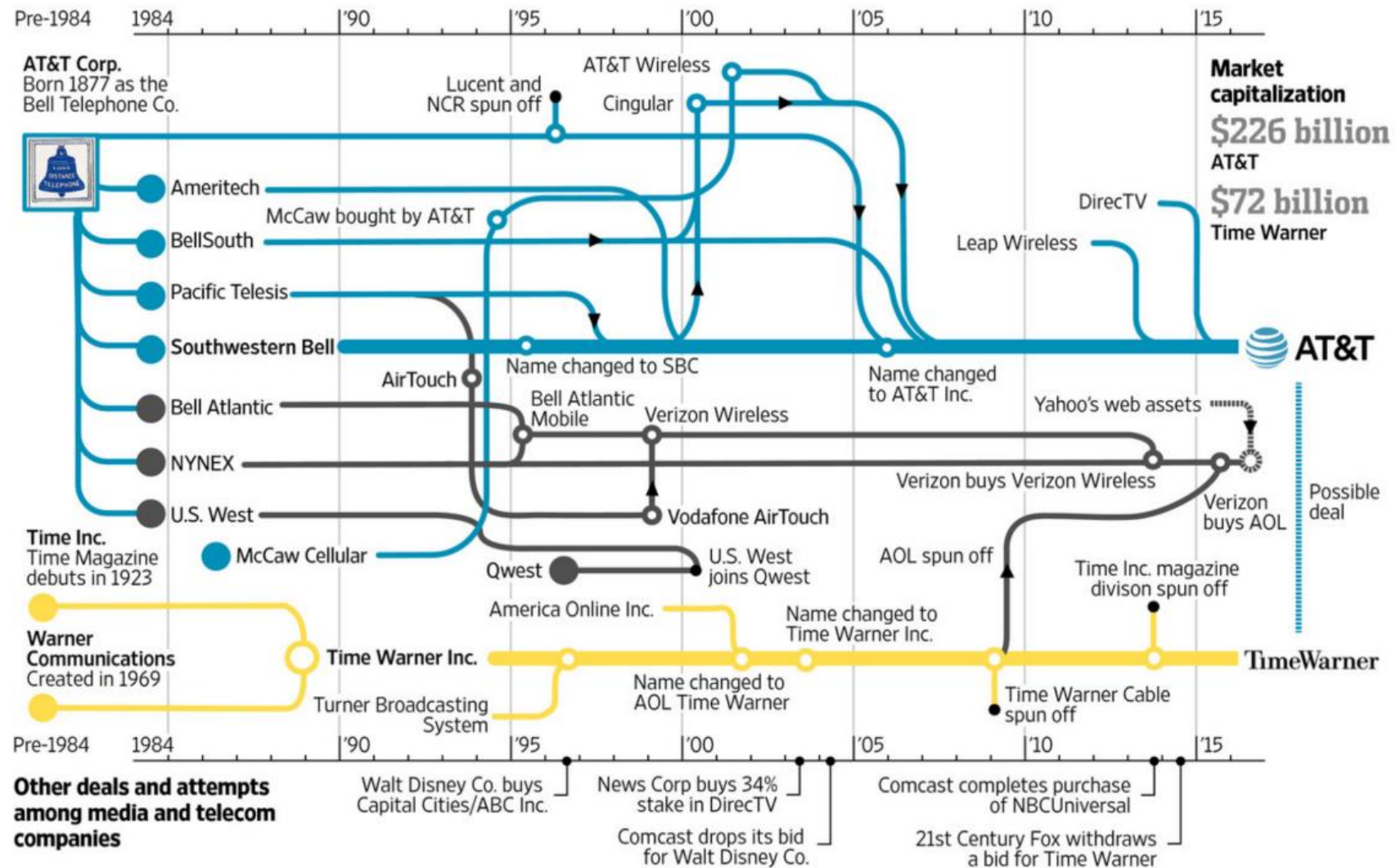
## Higher Concentration and Monopolistic Behaviour – Tech Industry



Source: The Motley Fool, SEO by the Sea

# Secular Stagnation

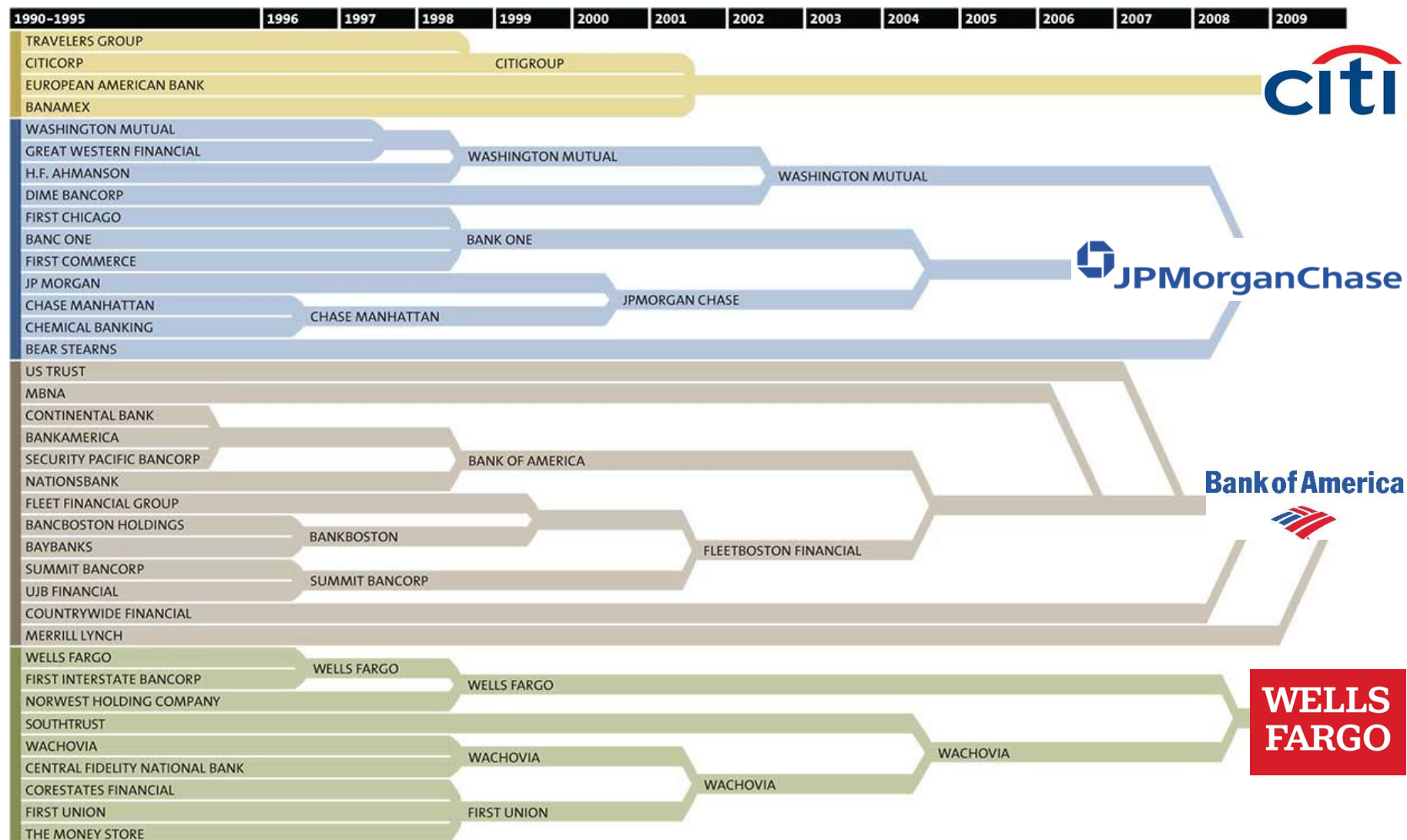
## Higher Concentration and Monopolistic Behaviour – Cable Industry



Source: The Wall Street Journal

# Secular Stagnation

## Higher Concentration and Monopolistic Behaviour – Financial Sector

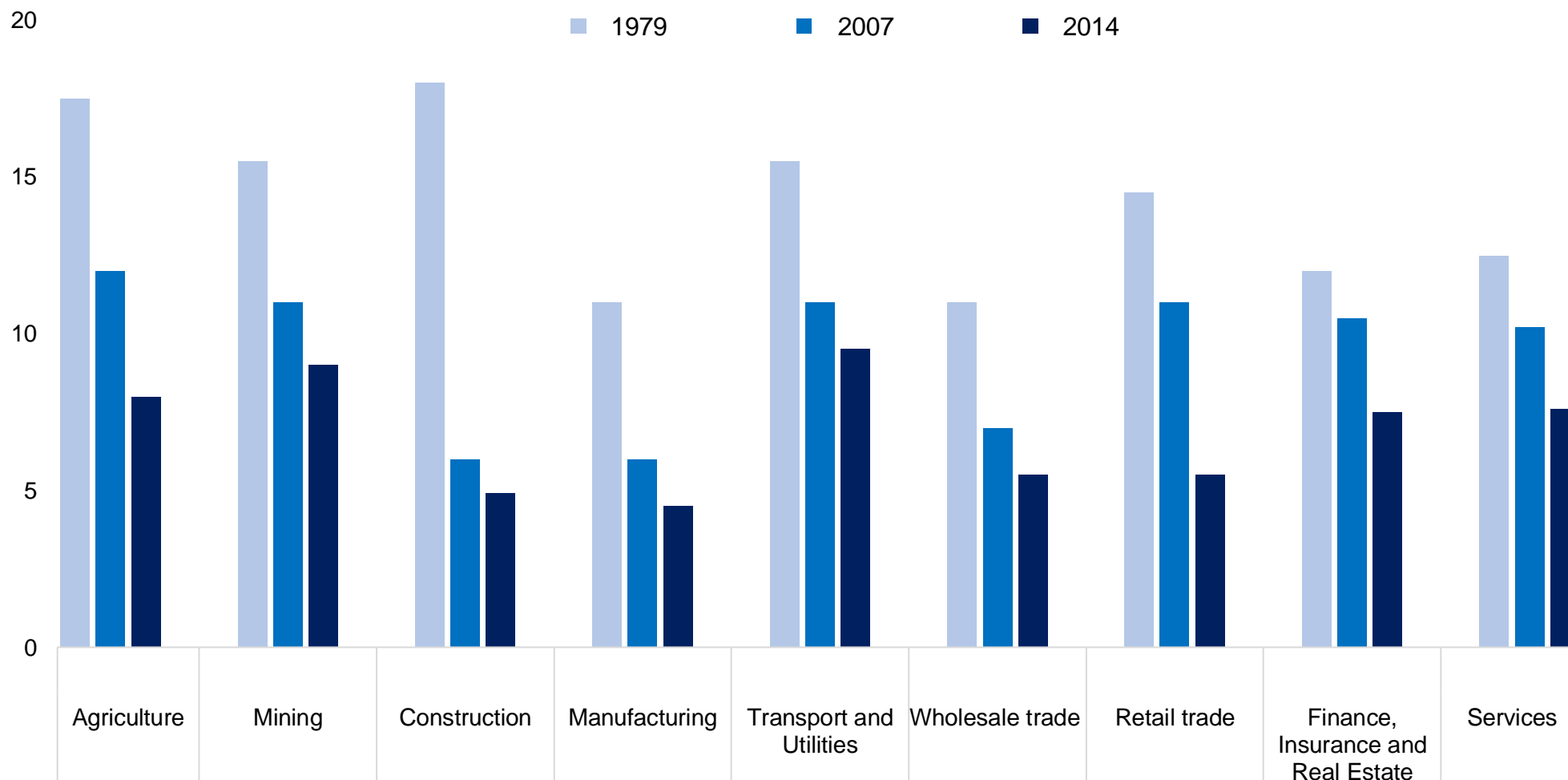


Source: Federal Reserve, GAO

# Secular Stagnation

## Start-Up Rate by Industry

Declining Start-Up Rate %, 1979 – 2014



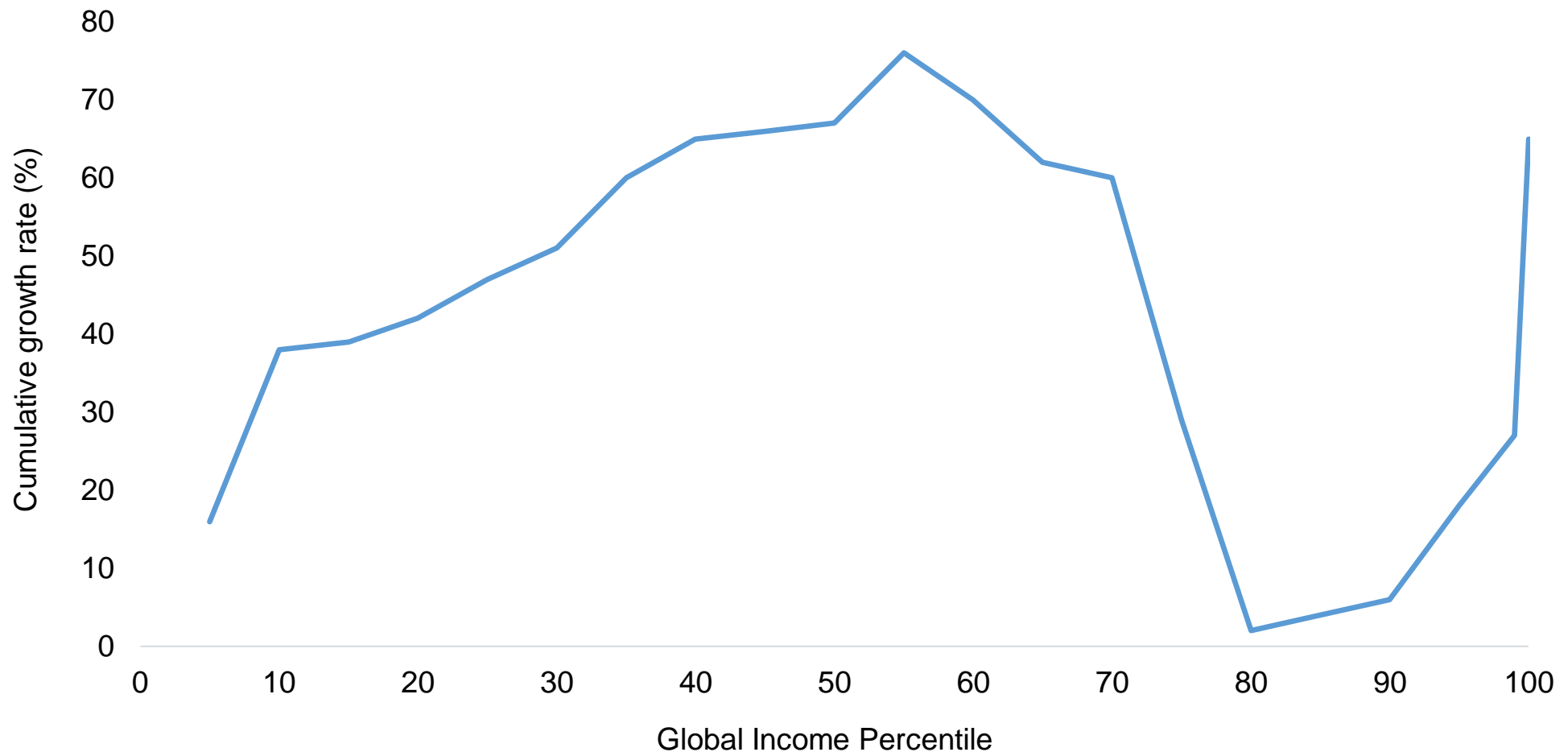
Source: Algebris Investments, US Census Bureau

Note: Start-up rates are calculated by dividing the number of firms aged less than 1 by the total number of firms within an industry in each year.

# Secular Stagnation

## Income Inequality – The Elephant In the Room

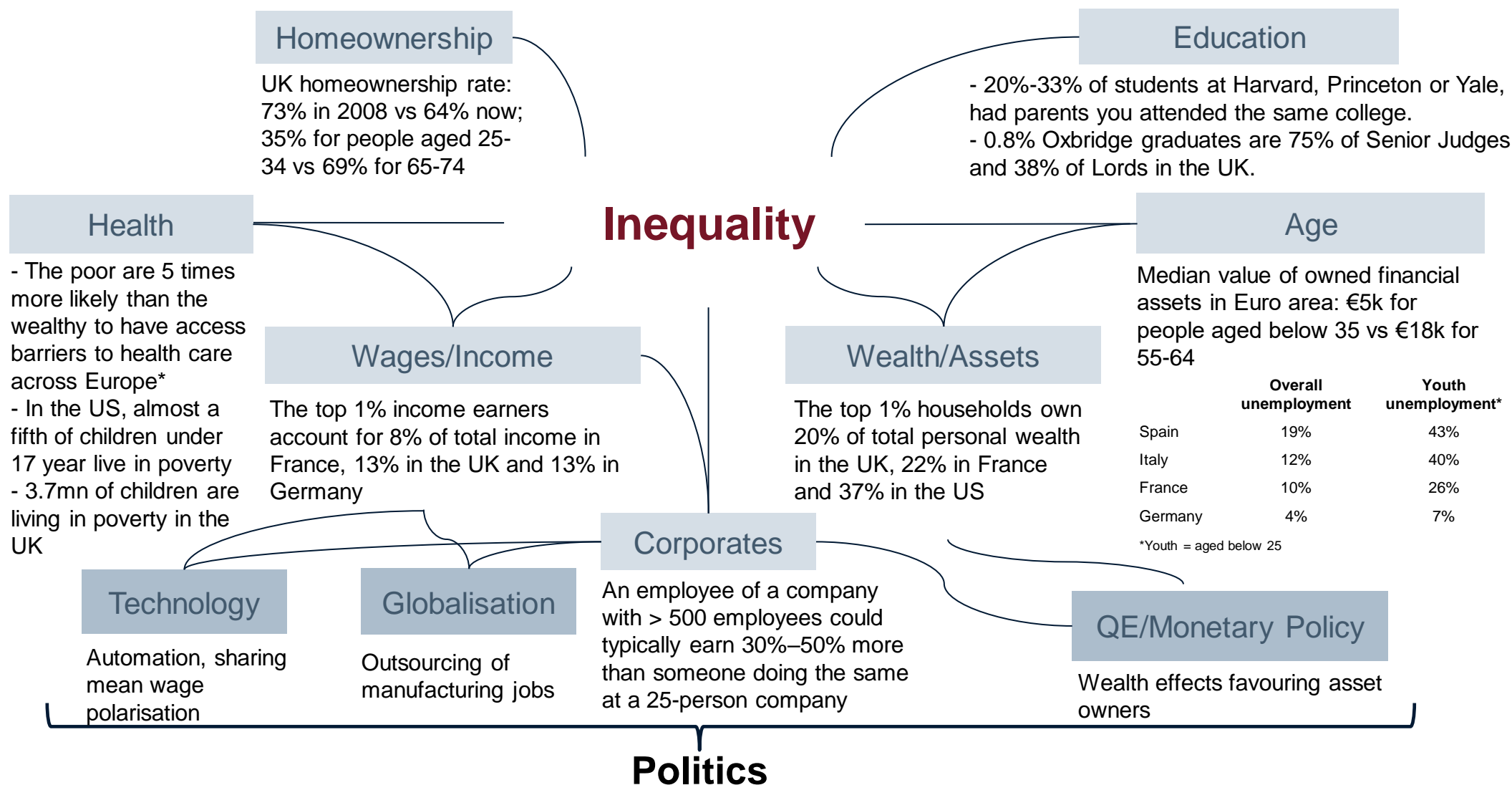
Global Growth Incidence Curve, 1988-2008  
Increase in real income by percentile of global income distribution



Source: Algebris Investments, The World Bank (Dec 2013)

# Secular Stagnation

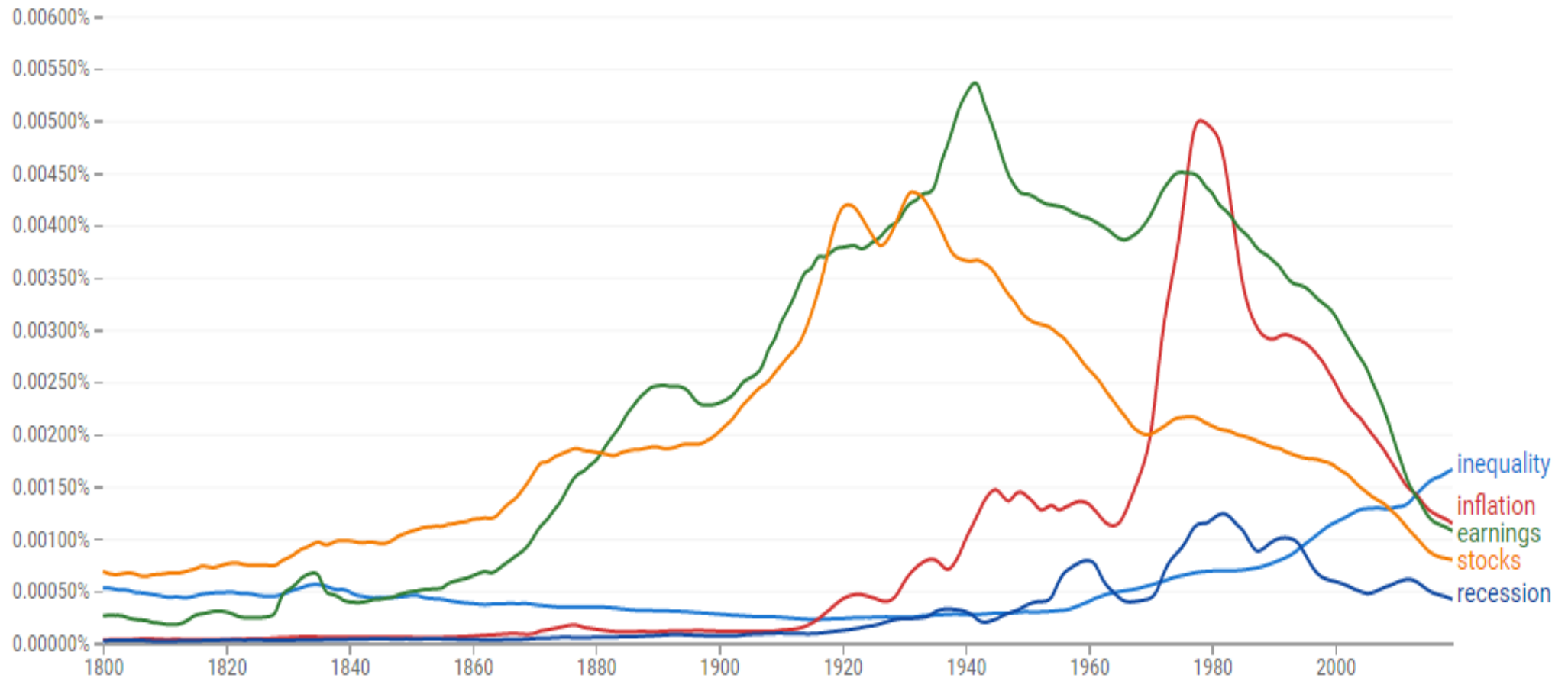
## Inequality and the Politics of Rage



Source: Algebris Investments, the National Association of Community Health Centers, UK Government, Bloomberg, Eurostat, ECB, World Wealth and Income Debate. \*Cylus, J., Papanicolas I., [An analysis of perceived access to health care in Europe: How universal is universal coverage?](#), Health Policy 119 (2015), July 2015; Cobb, J., Lin, K., Gabriel, P., [Growing Apart: The Changing Firm-Size Wage Effect and Its Inequality Consequences](#), 27 May 2016

# Secular Stagnation

## ‘Wall Street’ Words and ‘Main Street’ Words Have Inverted



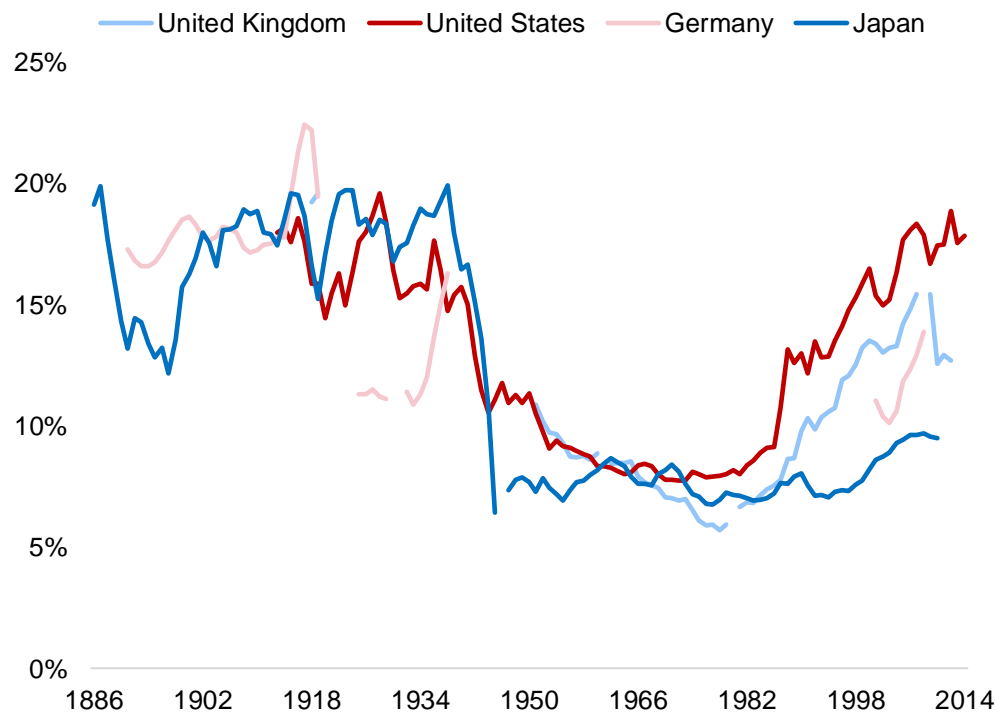
Source: Algebris Investments, Google Books Ngram Viewer

# Secular Stagnation

Excess Credit + Easy Monetary Policy = Rising Inequality

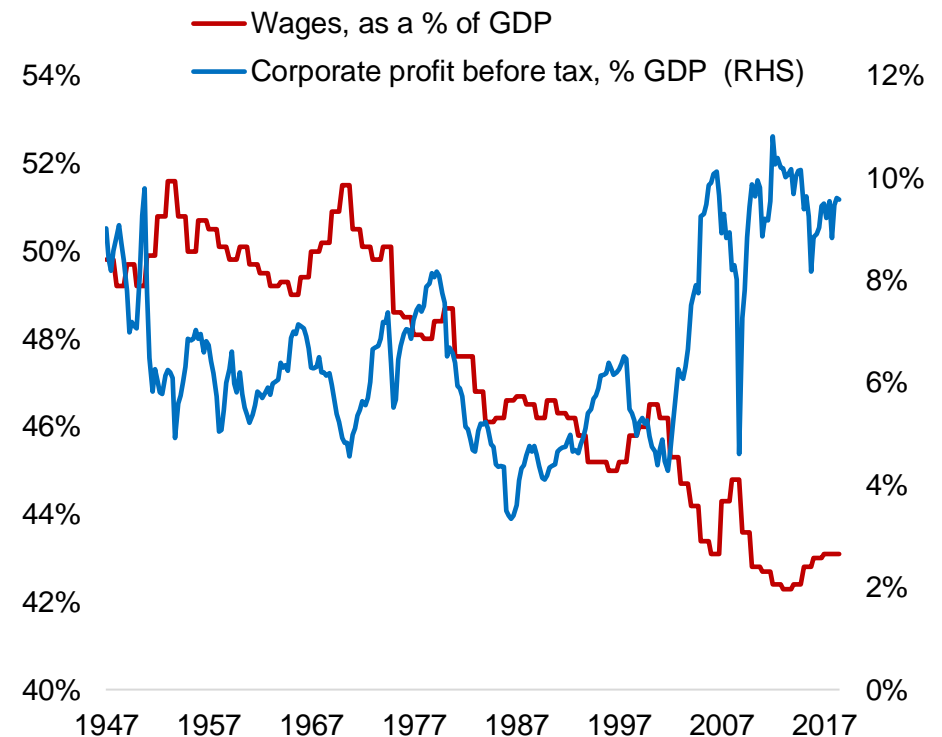
The top 1%: an ever increasing share of total income

% of total income for the top 1% of earners



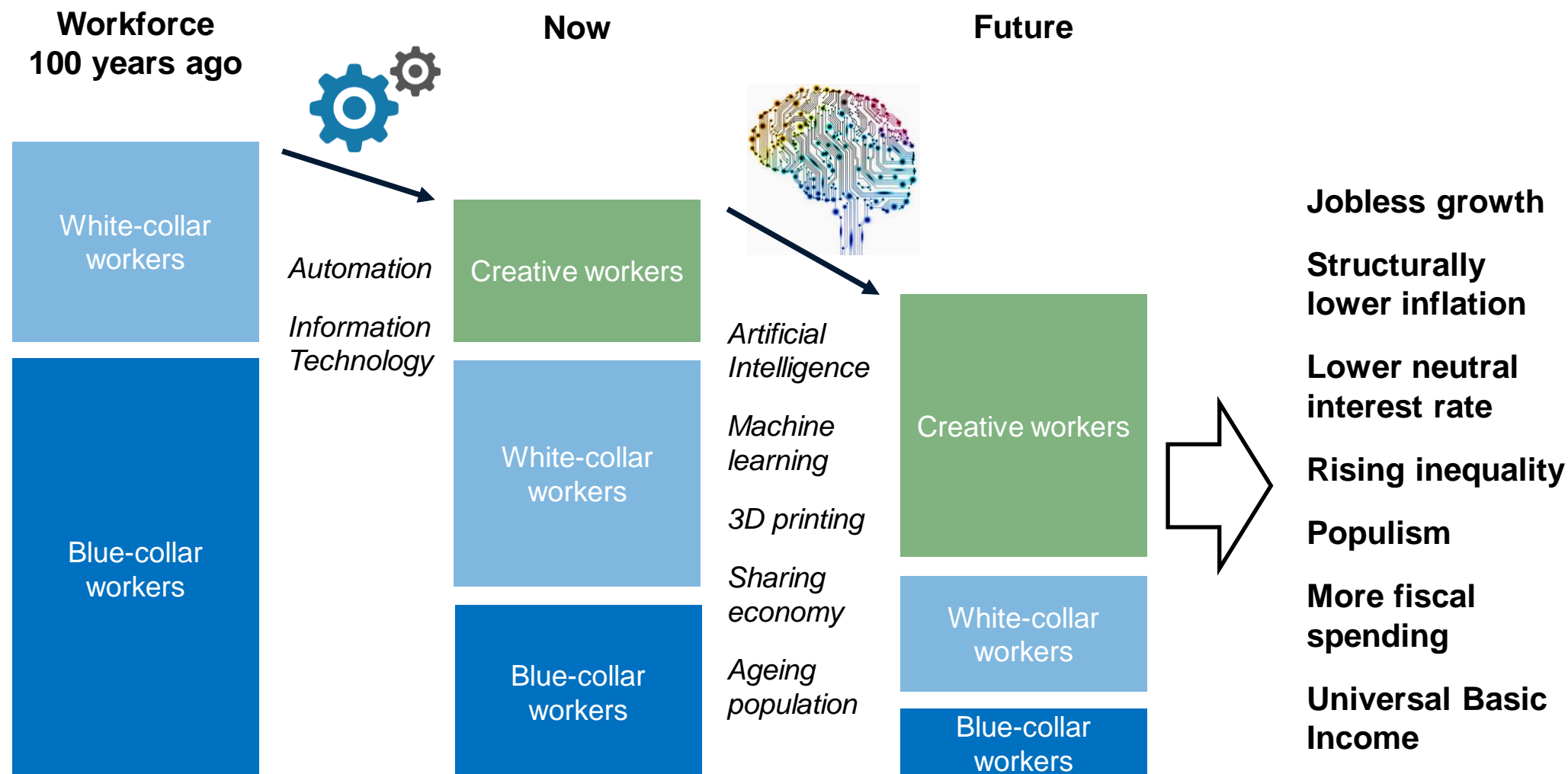
Corporate profits have risen, not wages

US corporate profit and wages, as a % of GDP



# Secular Stagnation

## The Creative Revolution: The Role of Technology



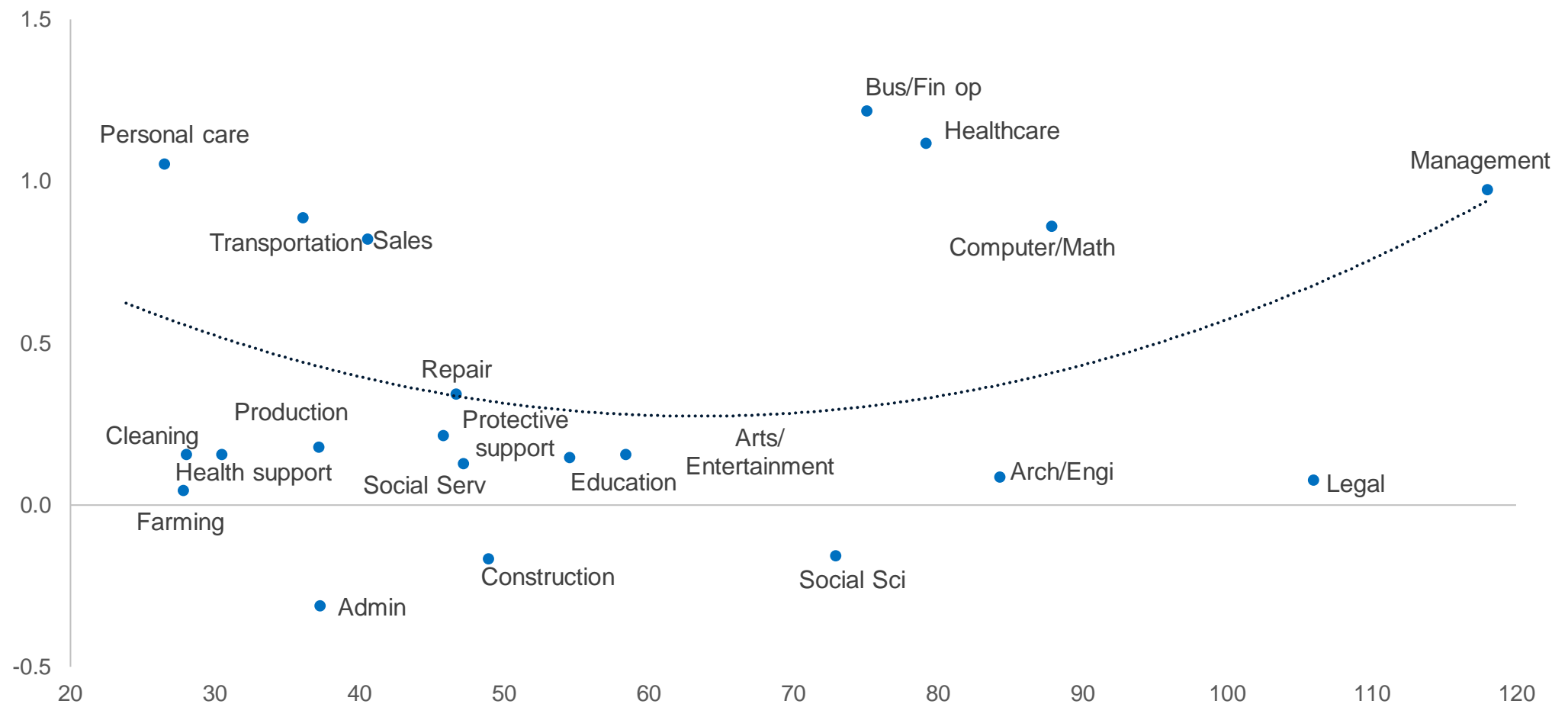
Source: Algebris Investments

# Secular Stagnation

## Inequality and Income Polarisation Boost Populism

More waiters and CEOs, but not enough in between

US jobs created in 2009-2016, mn vs median wage, \$000

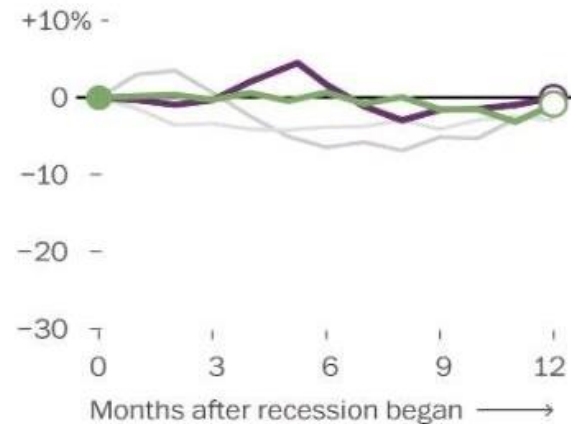


Source: Algebris Investments, BLS

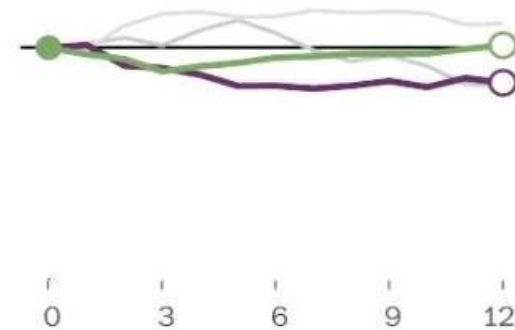
# Secular Stagnation

## Job Growth Since Each Recession Began, Based on Weekly Earnings

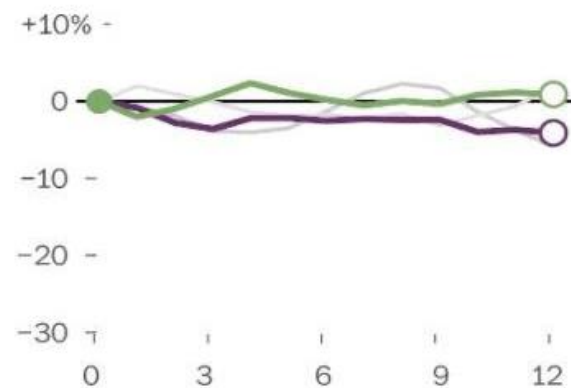
**1990 recession**



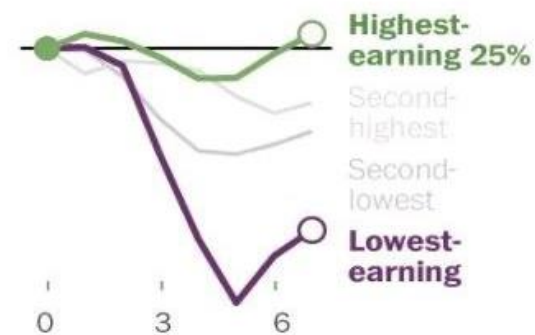
**2001 recession**



**2008 recession**



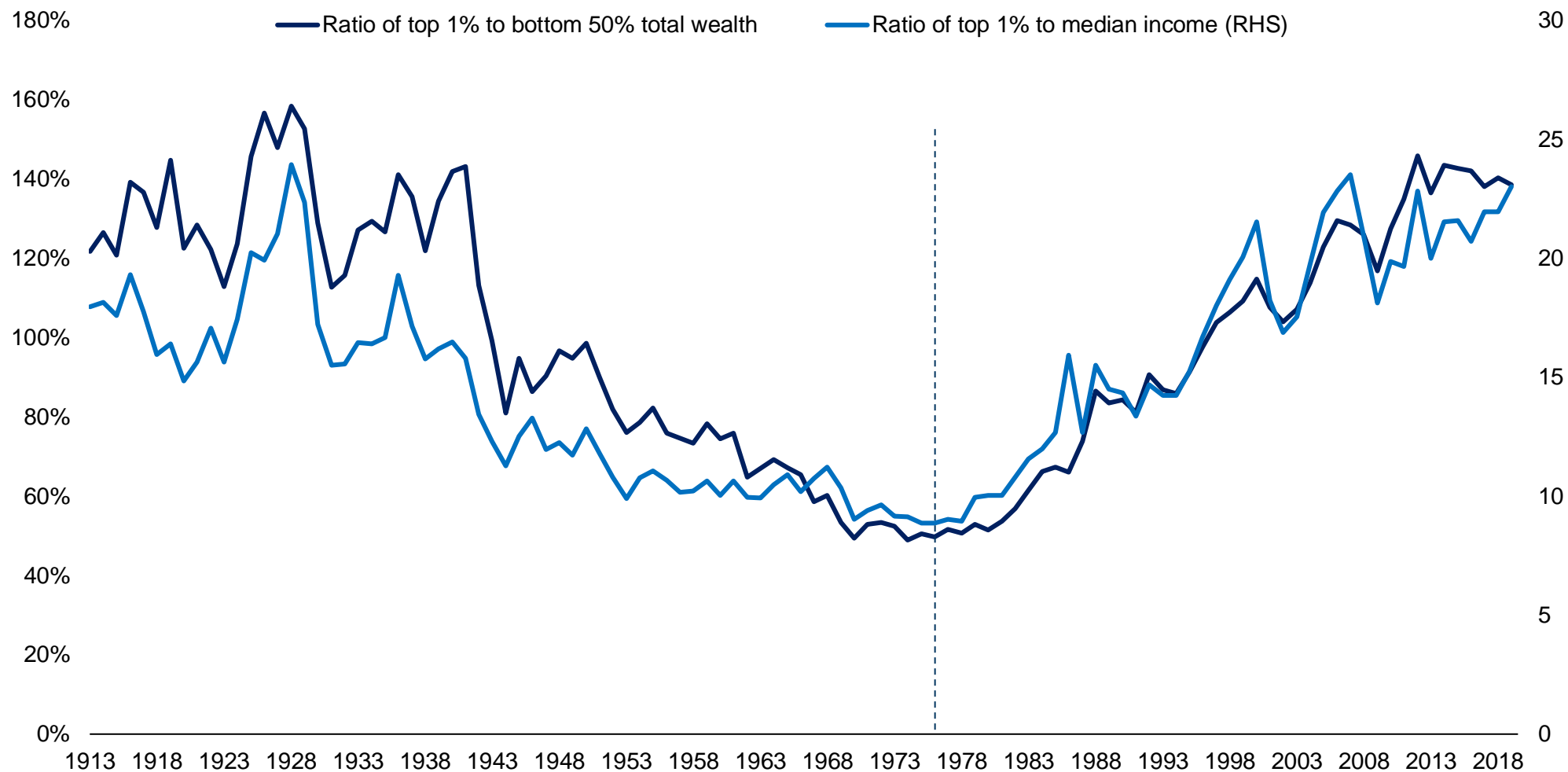
**Coronavirus crisis**



Source: Labor Department via IPUMS, with methodology assistance from Ernie Tedeschi of Evercore ISI, The Washington Post. Note: Based on 3-month average to show the trend in volatile data

# Secular Stagnation

## US Income and Wealth Inequality

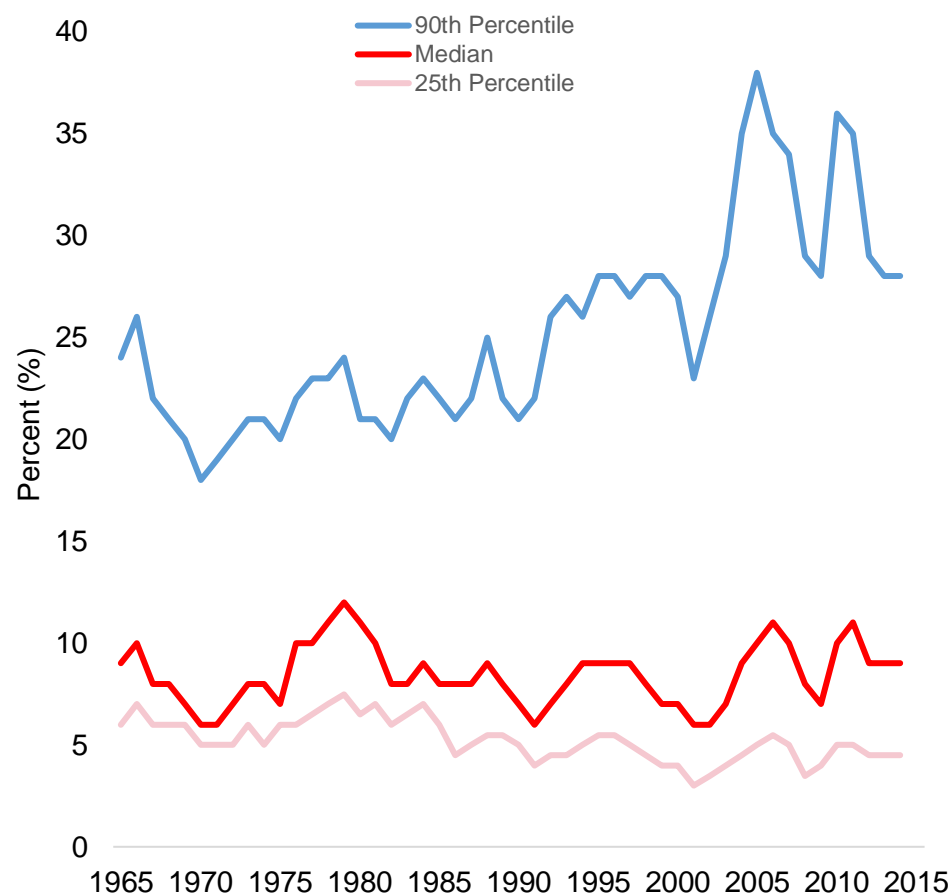


Source: Algebris Investments, World Inequality database, Piketty, Zucman and Saez (2018), Goldman Sachs Global Investment Research

# Secular Stagnation

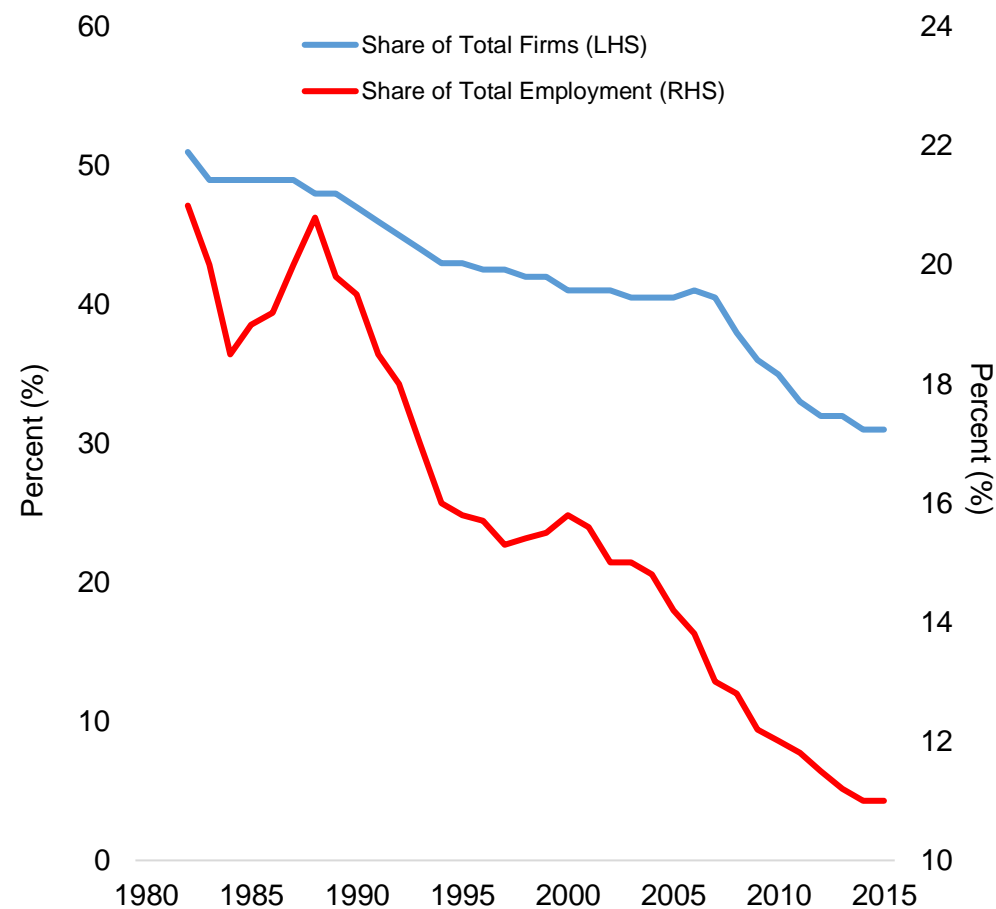
## Corporate Inequality

Return on Invested Capital (including Goodwill)  
US Publicly-traded Non-financial Firms



Source: Algebris Investments, Furman J., Market Concentration, OECD (May 2018)

Young Firms as a Share of the Economy  
1982 - 2015



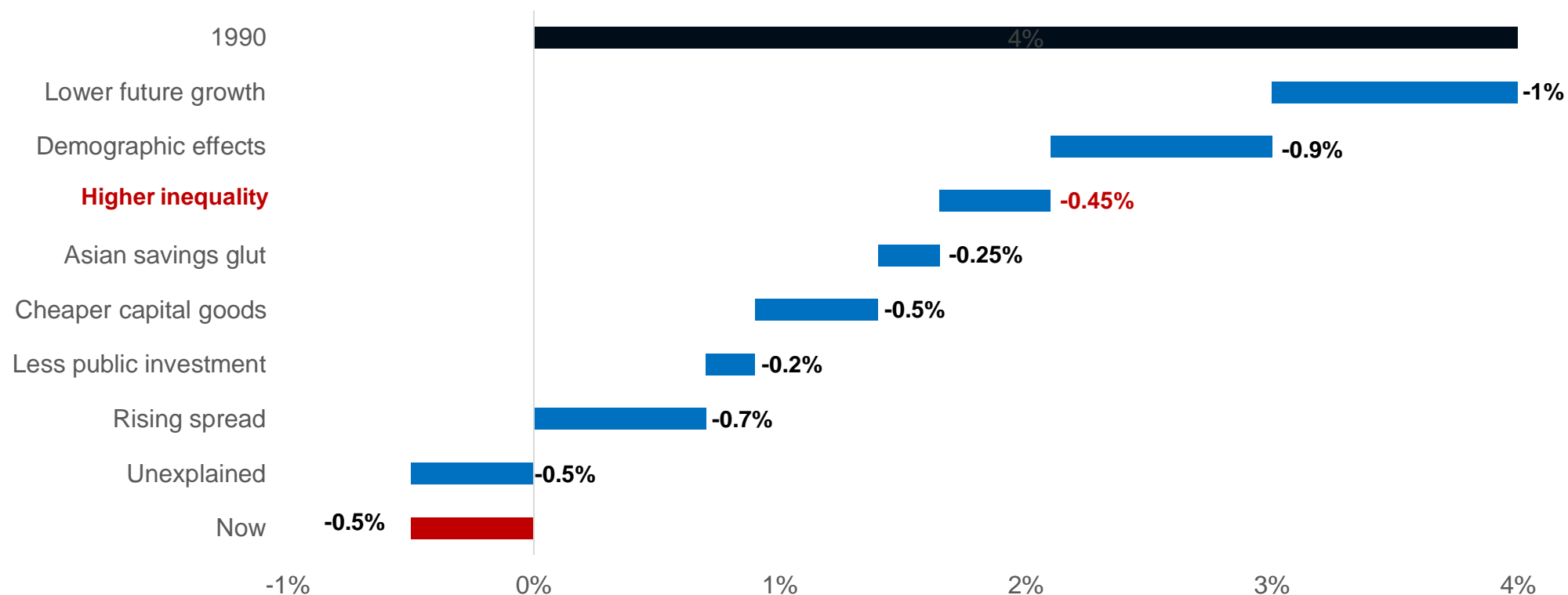
Source: Algebris Investments, Furman J., Market Concentration, OECD (May 2018)

# Secular Stagnation

## Inequality to Keep Rising, Lowering Growth Potential

**Structural factors have lowered the neutral real rate – Inequality is poised to keep rising, further lowering growth potential**

Neutral real rate in developed economies



Source: Algebris Investments, Lukasz Rachel and Thomas Smith, *Secular Drivers of the Global Real Interest Rate*, Bank of England Working Paper No. 571, December 2016

## 4. The Rise of Populism

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# The Rise of Populism

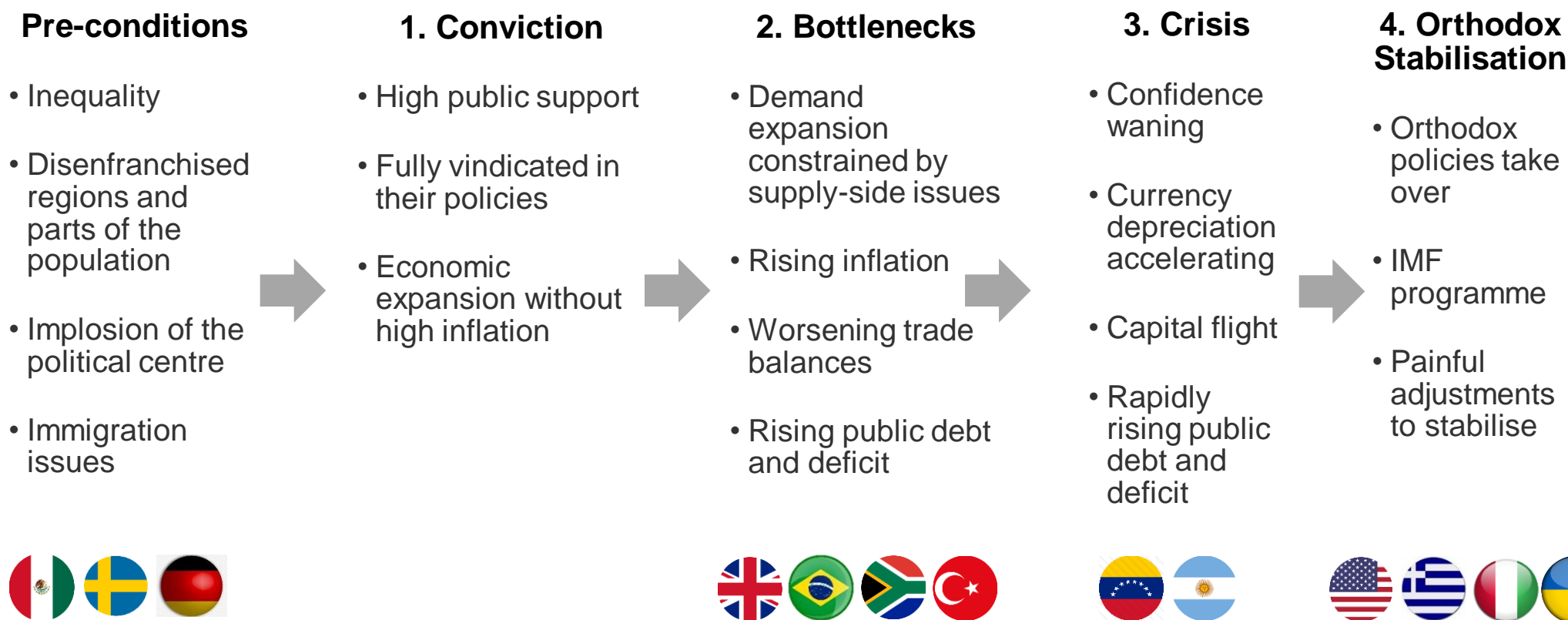
## The Populist Playbook

		UK/Brexit	US/Trump	Italy/5S & NL
1. Dream	Economic Political	£350mn a week Take back control	Revive manufacturing MAGA	Jobs Contract with Italians
2. Enemy	Foreign Domestic	Europe Immigration	Mexico, China, NK Immigration	EU/ECB Immigration
3. Policies	Militarism Nationalism Protectionism	Spain/Gibraltar/Russia Tax haven Tariffs	Defence spending Wall, Buy American Border Adjustment Tax	Police spending UBI Flat tax
Results	Large deficits Resource misallocation Rising public debt	} <b>Financial Repression (Inflation, Taxes &amp; War)</b>		

Source: Algebris Investments

# The Rise of Populism

## Regime Change Analysis: The Dornbusch-Edwards Framework



Source: Algebris Investments, Dornbusch, R. and Edwards, S., The Macro Economics of Populism in Latin America (1991)

# The Rise of Populism

## Central Bank Independence Under Threat

*"would be sooo great if the Fed would further lower interest rates and quantitative ease. The Dollar is very strong against other currencies and there is almost no inflation. This is the time to do it. Exports would zoom!"*

– Donald Trump, December 2019

*"Jay Powell and the Federal Reserve Fail Again. No "guts," no sense, no vision! A terrible communicator!"*

– Donald Trump, September 2019

*".....The Fed Rate, over a fairly short period of time, should be reduced by at least 100 basis points, with perhaps some quantitative easing as well. If that happened, our Economy would be even better, and the World Economy would be greatly and quickly enhanced-good for everyone!"*

– Donald Trump, September 2019

"The Federal Reserve should get our interest rates down to ZERO, or less, and we should then start to refinance our debt. INTEREST COST COULD BE BROUGHT WAY DOWN, while at the same time substantially lengthening the term. We have the great currency, power, and balance sheet....."

– Donald Trump, September 2019

"Unfortunately, in my country, the policy rate is 24 per cent... that cannot be."

– Recep Tayyip Erdoğan, June 2019

"[Central bank] Independence does not mean irresponsibility,"

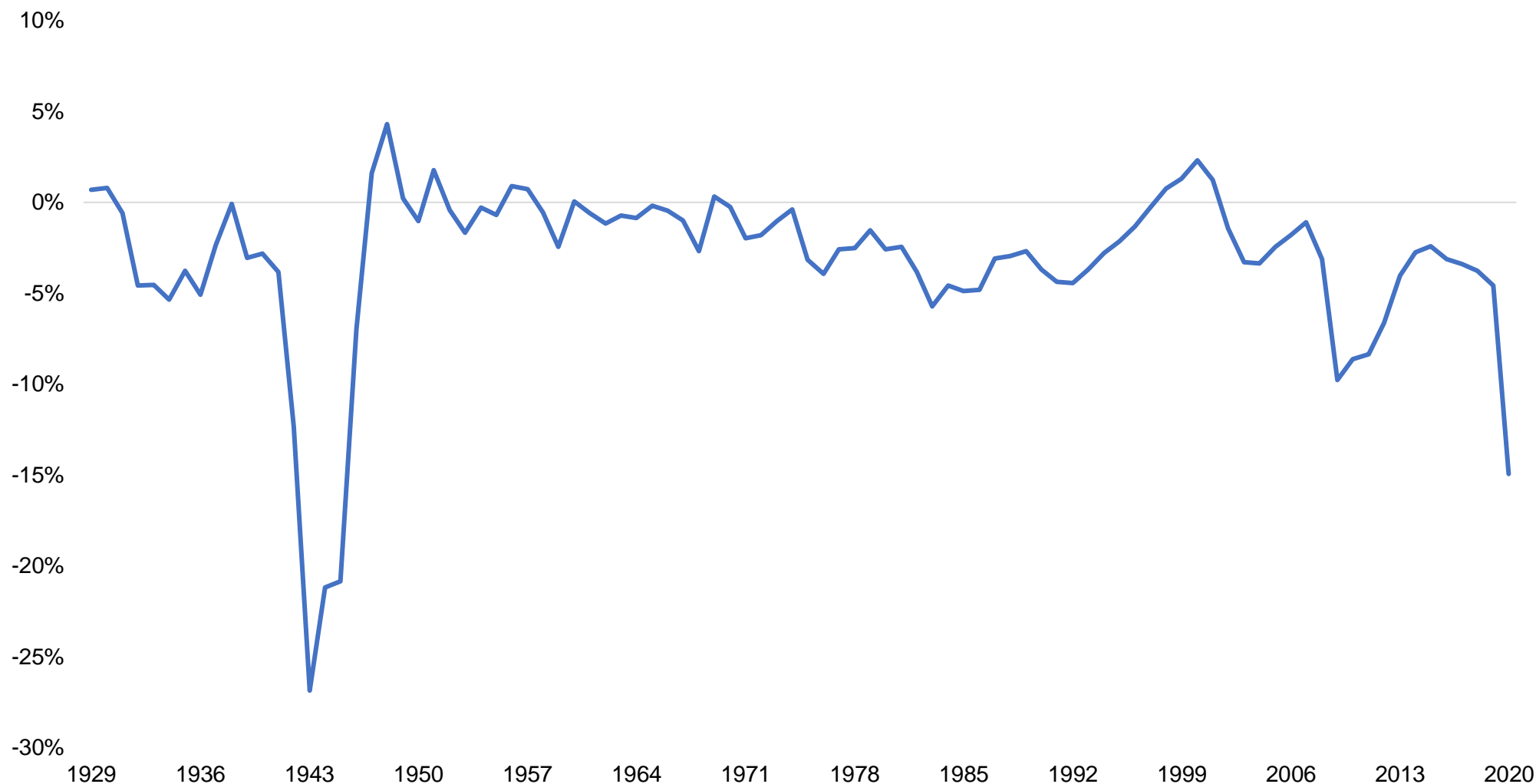
– Matteo Salvini, January 2019

## 5. Escaping The QE Infinity Trap

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# Escaping The QE Infinity Trap

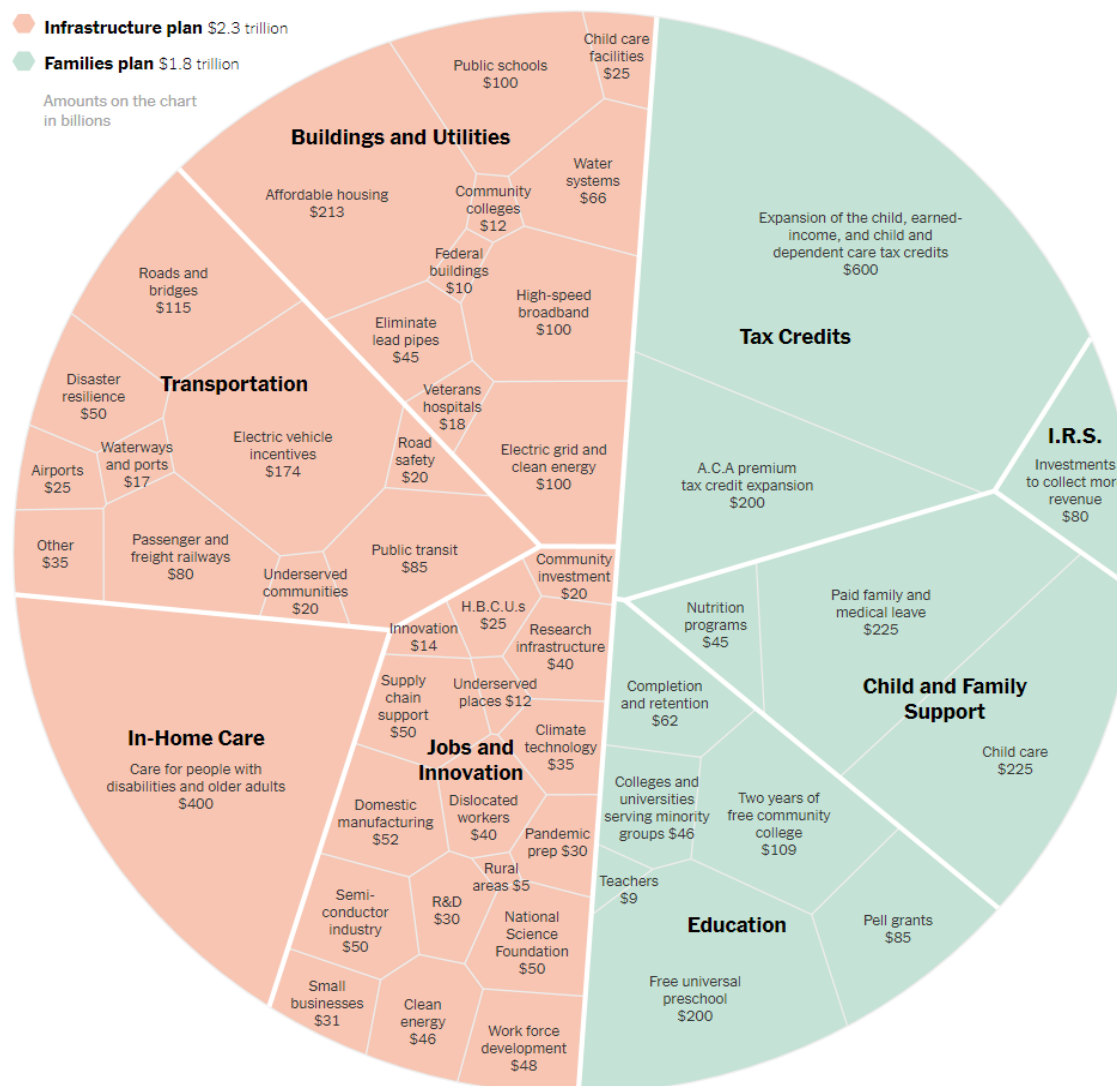
## History of US Federal Budget Deficit-Surplus, % GDP



Source: Algebris Investments, FRED

# Escaping The QE Infinity Trap

## Fiscal US: Biden's Infrastructure Bill

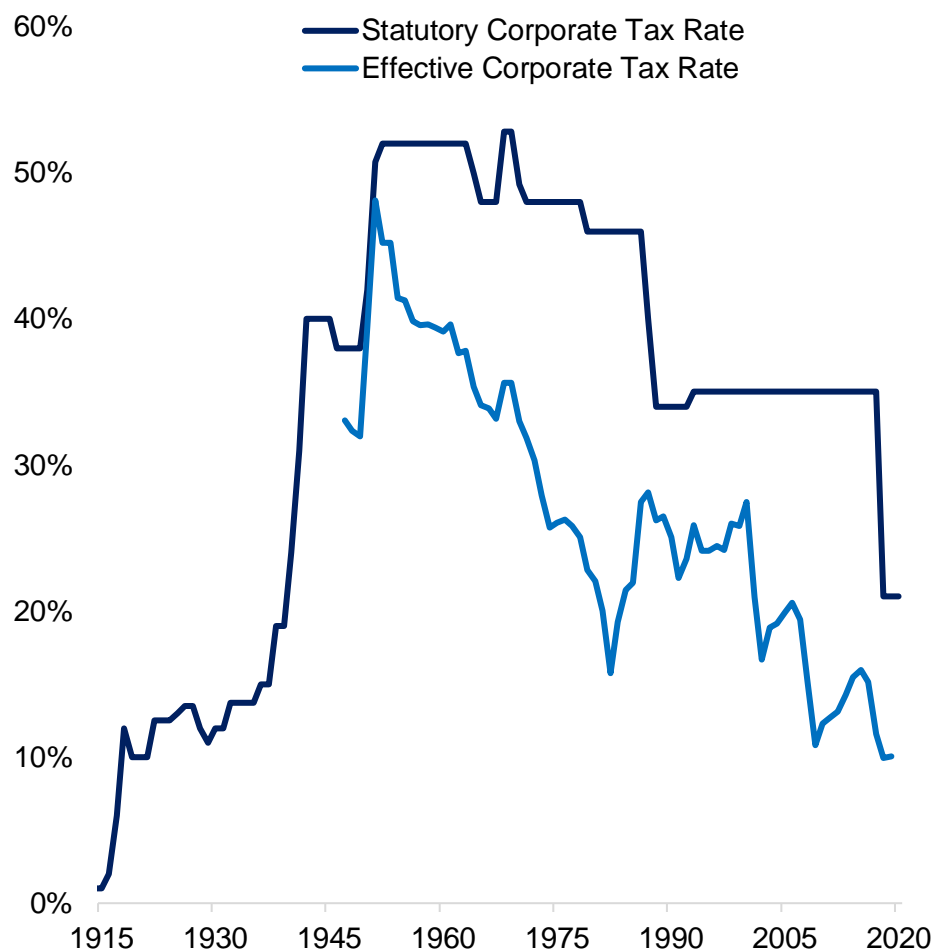


Source: The New York Times, The White House. Note: The plan released by the White House did not include estimated costs for the expansion of the child tax credit, earned-income tax credit, or child and dependent care tax credit. The \$600 billion estimate is the difference between the total tax cuts mentioned in the plan (\$800 billion) and the \$200 billion included for Affordable Care Act premium tax credits.

# Escaping The QE Infinity Trap

## US Corporate and Personal Marginal Tax Rates for the Highest Buckets

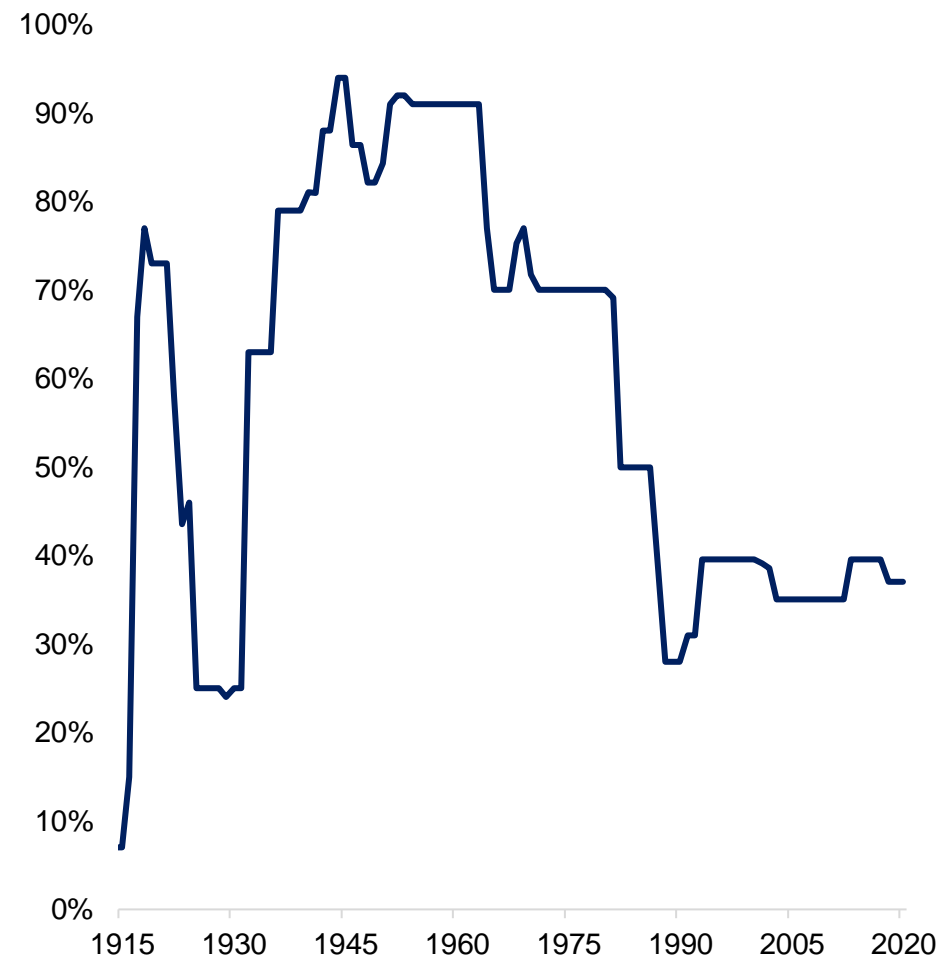
US Corporate Tax Rate: Top Bracket



Source: Algebris Investments, FRED, Tax Policy Center. Data as of March 2020.

Notes: Data refer to the top marginal tax rate on corporations. Unless otherwise mentioned, this is the tax rate applicable at the federal level on domestic companies. Different rates apply on non-resident/ foreign-owned companies. Provincial and local governments may levy additional taxes.

US Personal Income Tax: Top Bracket

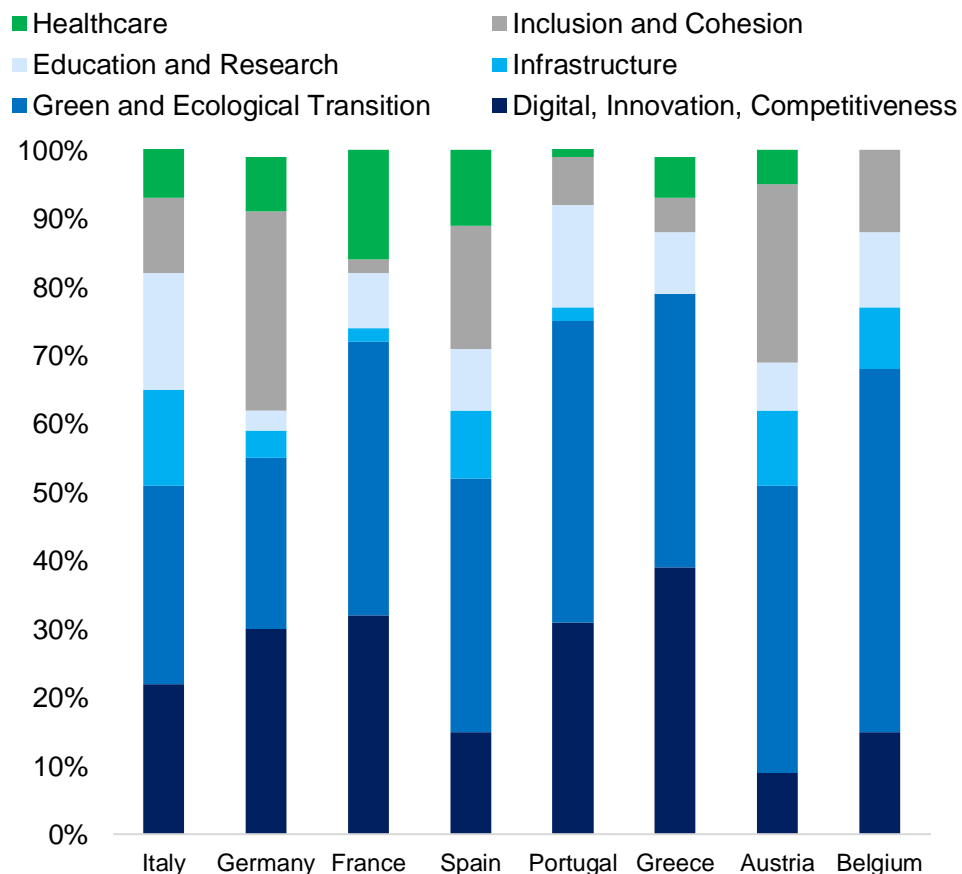


Source: Algebris Investments, FRED, Tax Policy Center. Data as of Feb 2020

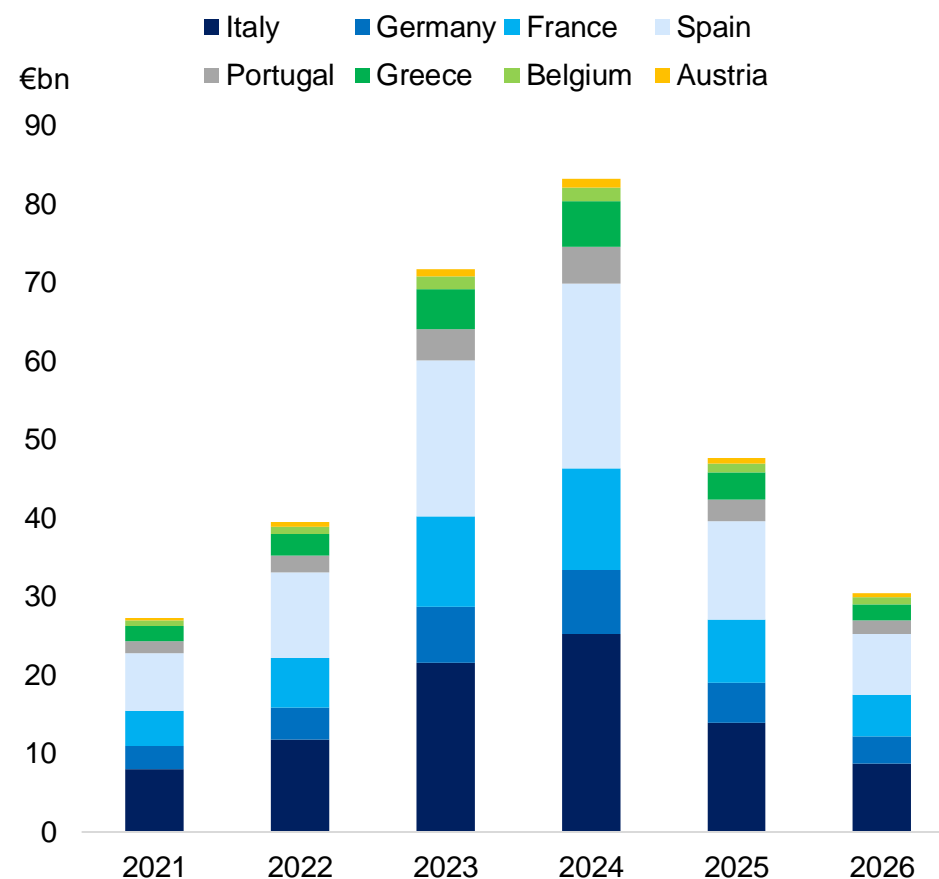
# Escaping The QE Infinity Trap

## Fiscal EU: Next Generation EU Recovery Fund

Composition of National Recovery and Resilience Plans



Expected Disbursement of Next-Gen EU Grants



Source: Algebris Investments, Bruegel. Data as of April-21

# Escaping The QE Infinity Trap

## Germany Election Scenario Probability Analysis

First Party	Vote% for Biggest Party	Vote% for Second Biggest Party		Scenarios		Scenario Probability
		*Simulated probability of voting outcome		*Assuming equal likelihood for each coalition option in given voting outcome		
		A		B		A*B
General Election	Green >30%	0%	CDU/CSU >20%	Green-CDU/CSU	100%	0%
			Green-CDU/CSU-FDP	33%	0%	
		1%	CDU/CSU <20%	Green-SPD-Left	33%	0%
			Green-SPD-FDP	33%	0%	
	Green	33%	CDU/CSU >20%	Green-CDU/CSU	50%	17%
			Green-CDU/CSU-FDP	50%	17%	
		33%	Green-CDU/CSU-FDP	33%	4%	
			Green-SPD-Left	33%	4%	
	CDU/CSU <30%	11%	Green-SPD-FDP	33%	4%	
			CDU/CSU-Green	33%	6%	
		6%	CDU/CSU-SPD-FDP	33%	1%	
			CDU/CSU-Green-FDP	33%	1%	
CDU/CSU	2%	CDU/CSU-Green-SPD	33%	1%		
		CDU/CSU-Green	33%	14%		
	43%	Green >20%	CDU/CSU-Green-FDP	33%	14%	
		CDU/CSU-Green-SPD	33%	14%		
Green <20%	4%	CDU/CSU-Green-SPD	33%	4%		
		CDU/CSU-Green-SPD	100%			
SUM		100%				100%

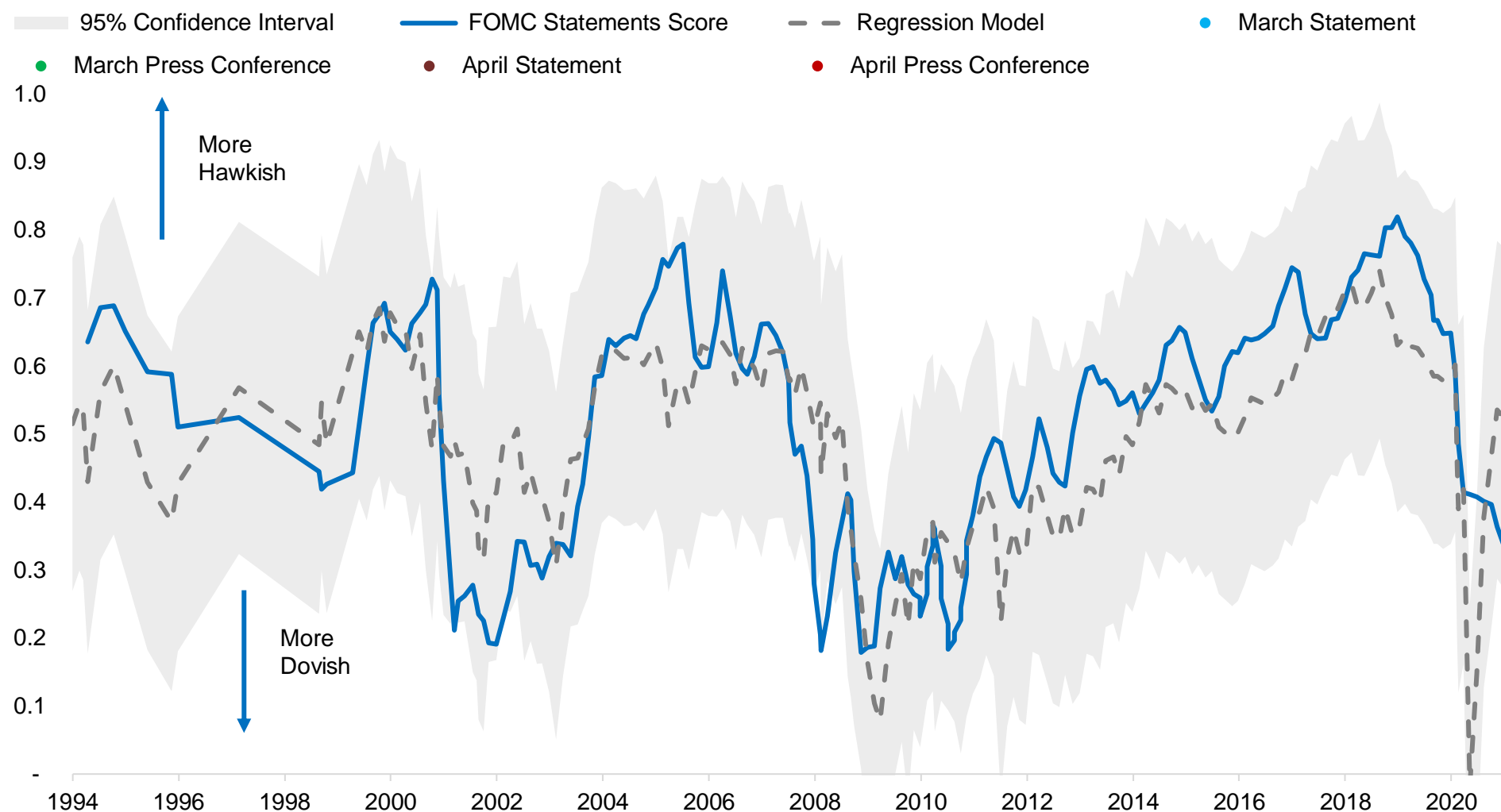
### Coalition Option Probabilities

	5/5/2021	10/5/2021	17/5/2021	25/5/2021
Green-CDU/CSU-FDP	29%	29%	24%	21%
Green-CDU/CSU	24%	26%	20%	17%
CDU/CSU-Green	13%	13%	18%	20%
CDU/CSU-Green-SPD	11%	10%	15%	19%
CDU/CSU-Green-FDP	11%	10%	13%	15%
Green-SPD-FDP	6%	6%	4%	4%
Green-SPD-Left	6%	6%	4%	4%
CDU/CSU-SPD-FDP	0%	0%	0%	1%
SUM	100%	100%	100%	100%
Green in Coalition	99.9%	99.9%	99.6%	99.3%
Green as First Party	65%	67%	53%	46%
CDU/CSU as First Party	35%	33%	47%	54%

Source: Algebris Investments, Aggregated poll data from Wikipedia. Data as of 25.05.2021

# Escaping The QE Infinity Trap

## Algebris Dov-o-Meter: FOMC Hawkishness/Dovishness Measured by NLP Techniques



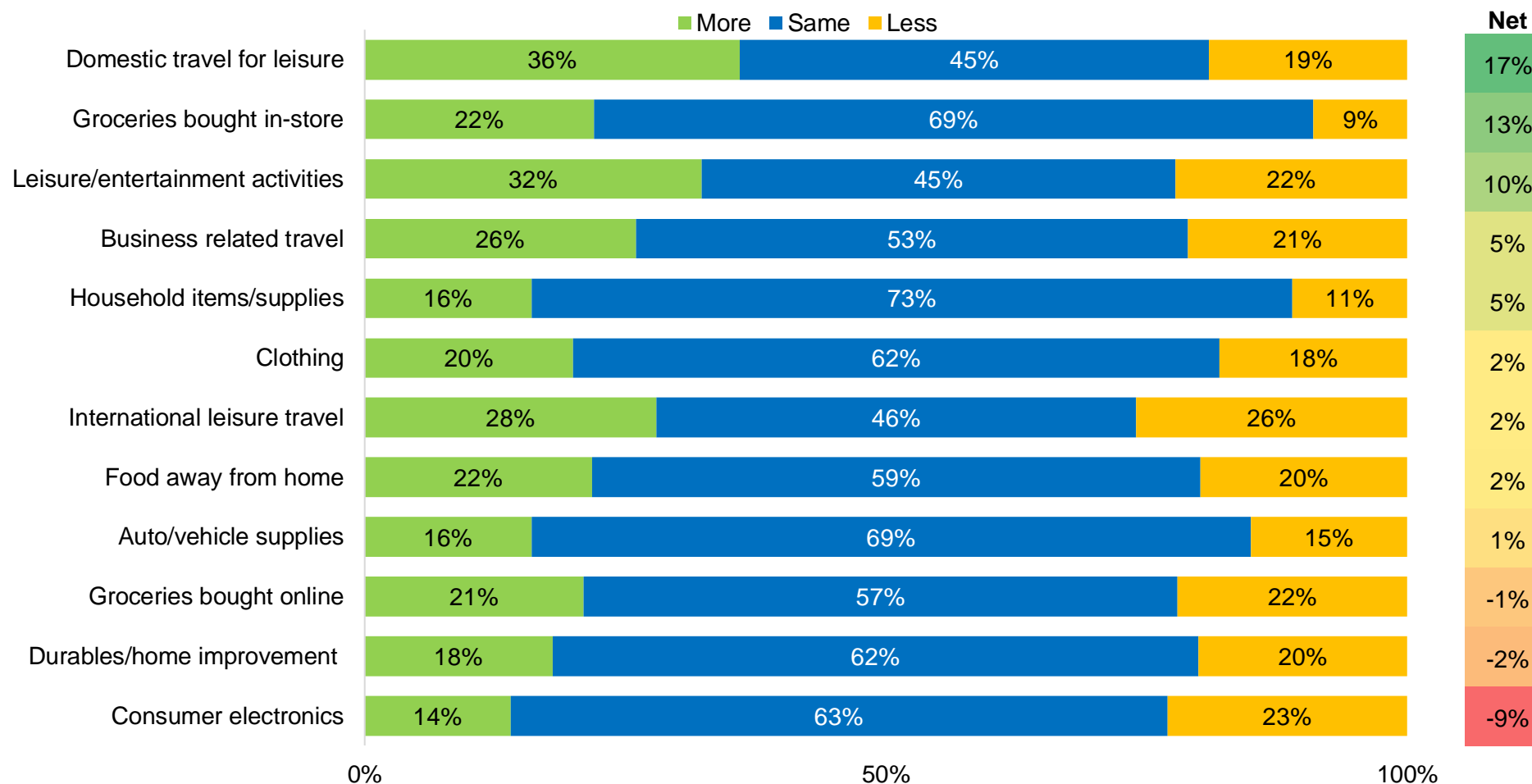
Note: The regression model estimates how hawkish/dovish the Fed should be based on economic fundamentals at the time. The variables used include US Manufacturing ISM, Unemployment Rate, YoY Core CPI Rate, Economic Policy Uncertainty Index and Financial Conditions Index.

Source: Algebris Investments, Federal Reserve Website, Bloomberg. Data as of 31.05.21

# Escaping The QE Infinity Trap

## US consumer: Ready To Spend More Than Before The Pandemic

Spending Intentions Post Covid-19 Vaccine Compared to Pre COVID-19 Spending

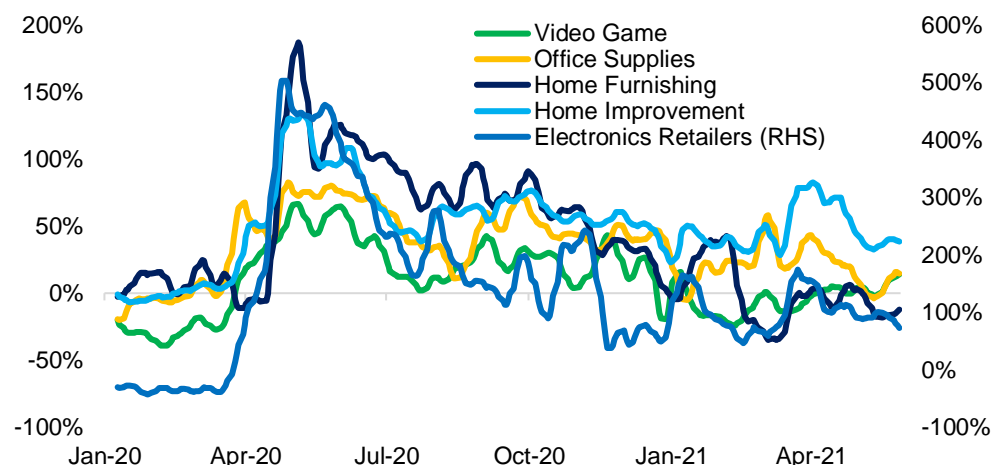


Source: Algebris Investments, Morgan Stanley Research, AlphaWise US Consumer Pulse Survey. Data as of May 2021

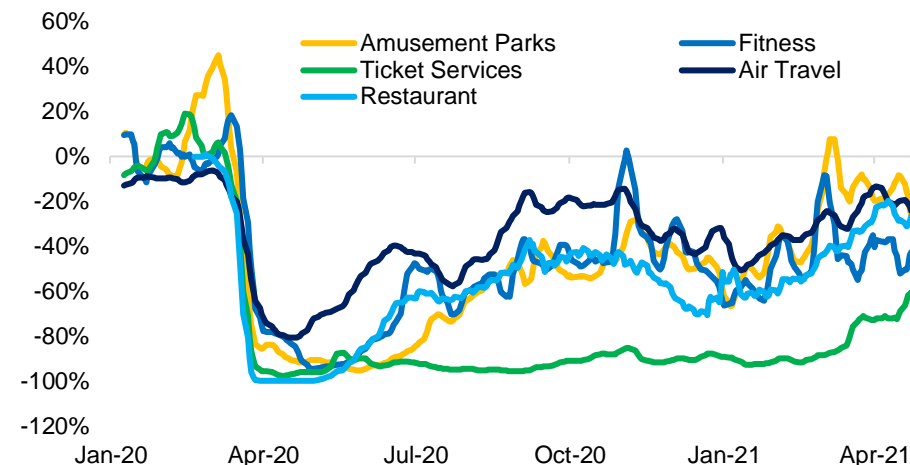
# Escaping The QE Infinity Trap

## US Consumption Patterns, % Change vs 2019

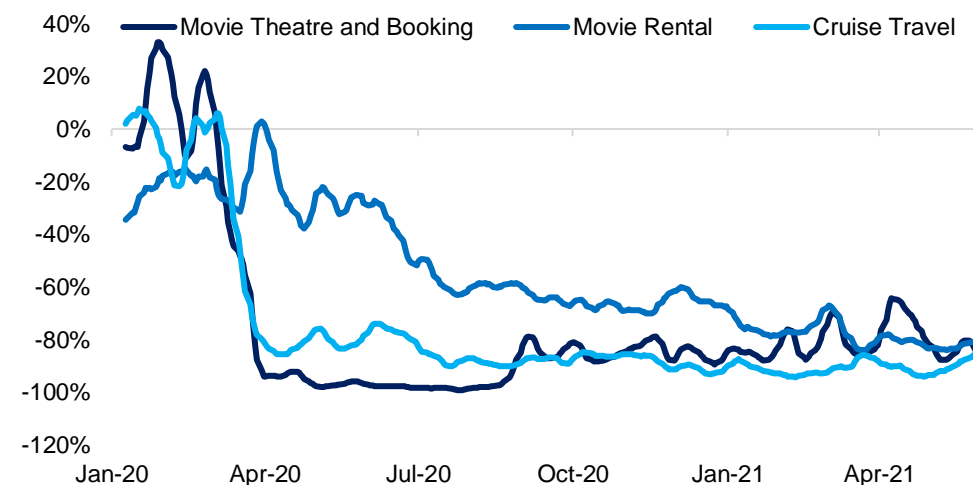
### Stay Home Spending: Normalisation



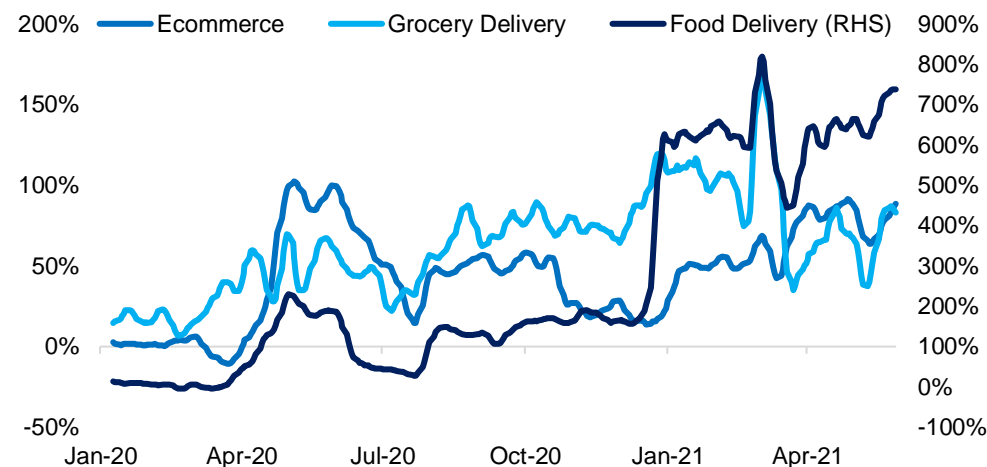
### Re-Opening: Getting Closer to Pre-Covid Level



### Slower Re-Opening: Yet to Recover



### Structural Change: Online Spending Remains Strong

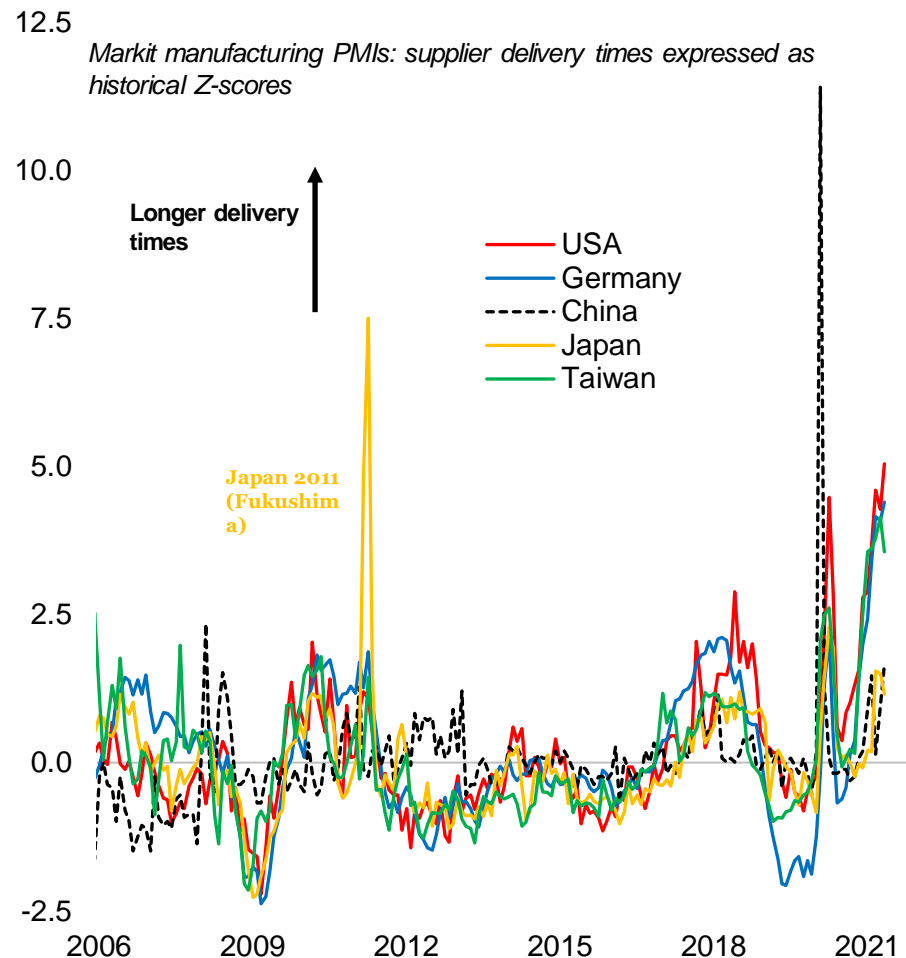


Source: Algebris Investments, Facteus, OpenTable, Bloomberg. Data as of 28.05.21

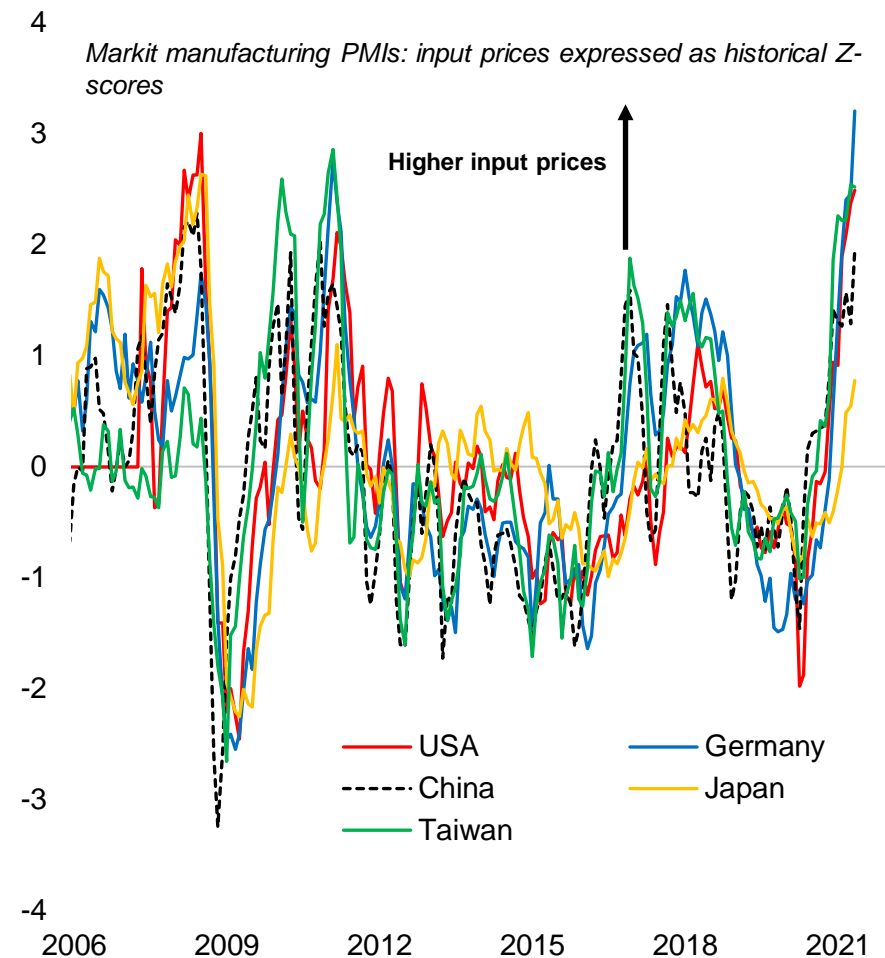
# Escaping The QE Infinity Trap

## Delivery Times Have Increased, Leading To An Increase In Input Prices

### Delivery Times Have Lengthened...



### ...And Input Prices Have Risen A Lot

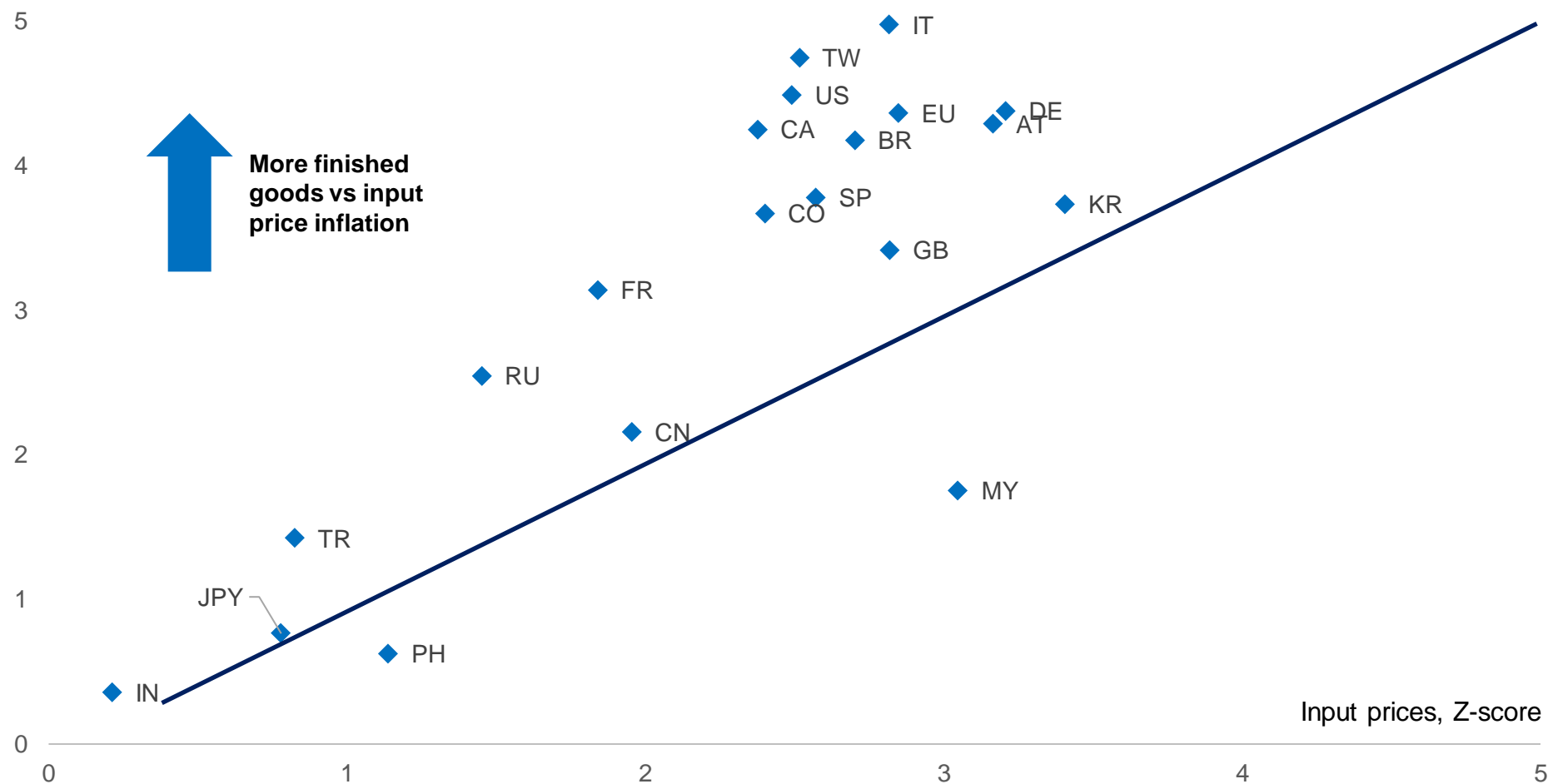


Source: Algebris Investments, Haver, IIF. Data as of May 2021

# Escaping The QE Infinity Trap

## Could Inflation Finally Be Rising?

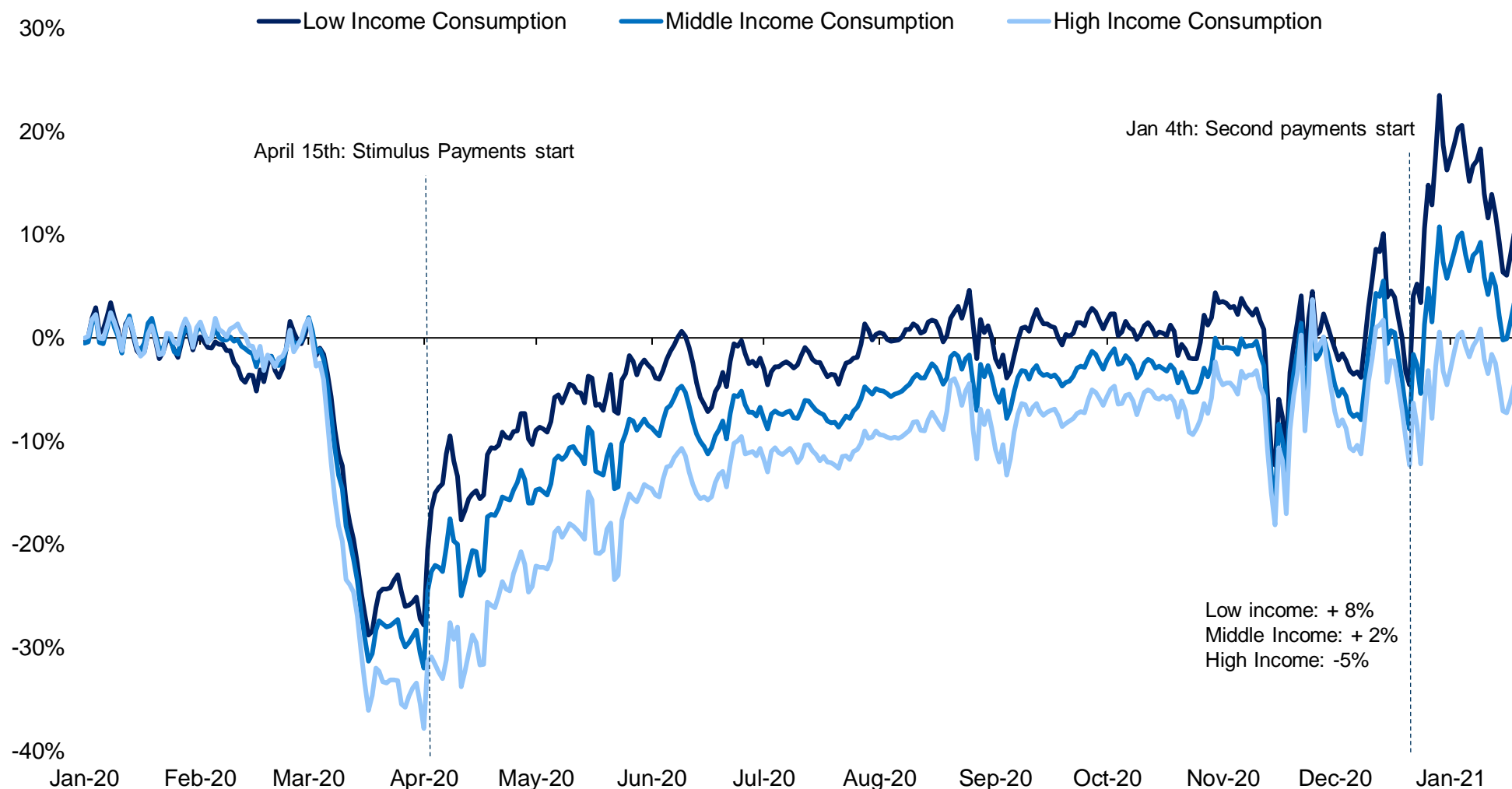
Output prices,  
Z-score



Source: Algebris Investments, Haver, IIF. Data as of May 2021

# Escaping The QE Infinity Trap

## US Bottom-Up Fiscal Stimulus is Working: High Frequency Spending, Jan-20 Baseline



Source: Algebris Investments, Opportunity Insights, Goldman Sachs Global Investment Research. Data as of 30.01.21

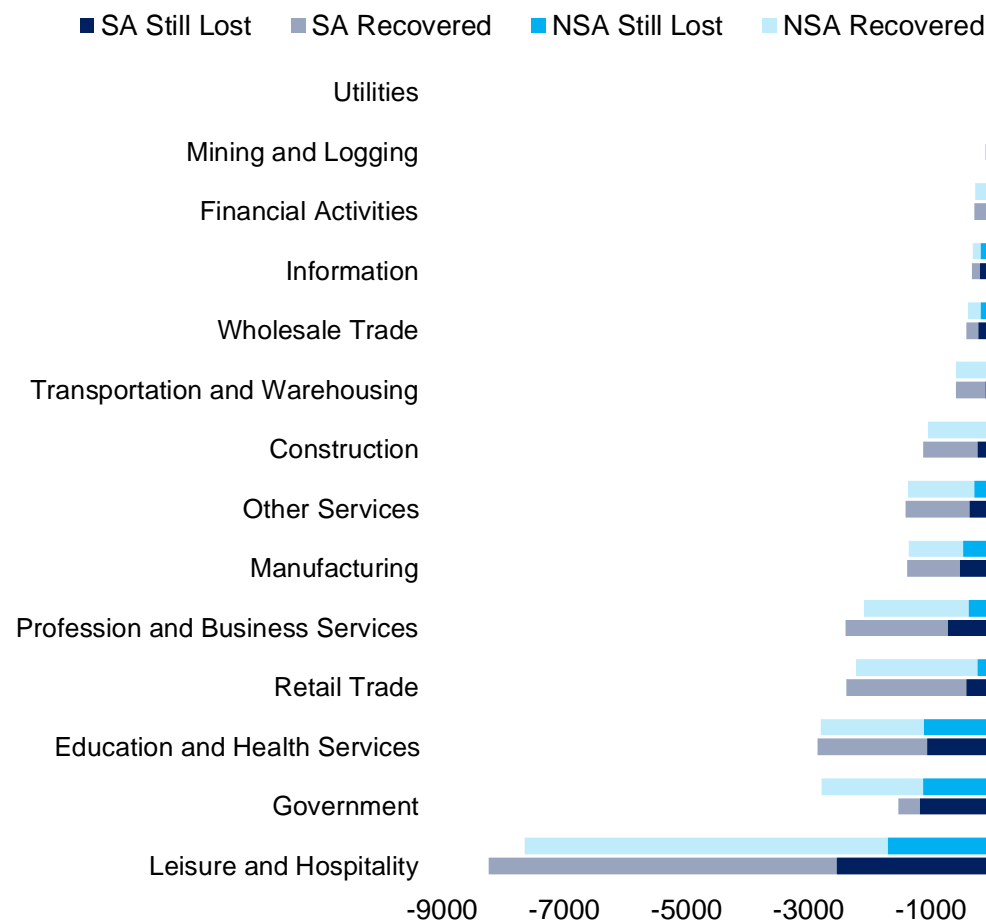
# Escaping The QE Infinity Trap

## US NFP Changes and Job Openings

Lost Payrolls vs Job Openings, Thousands



US NFP Changes By Sector vs Feb 2020: Seasonally vs Non-seasonally Adjusted

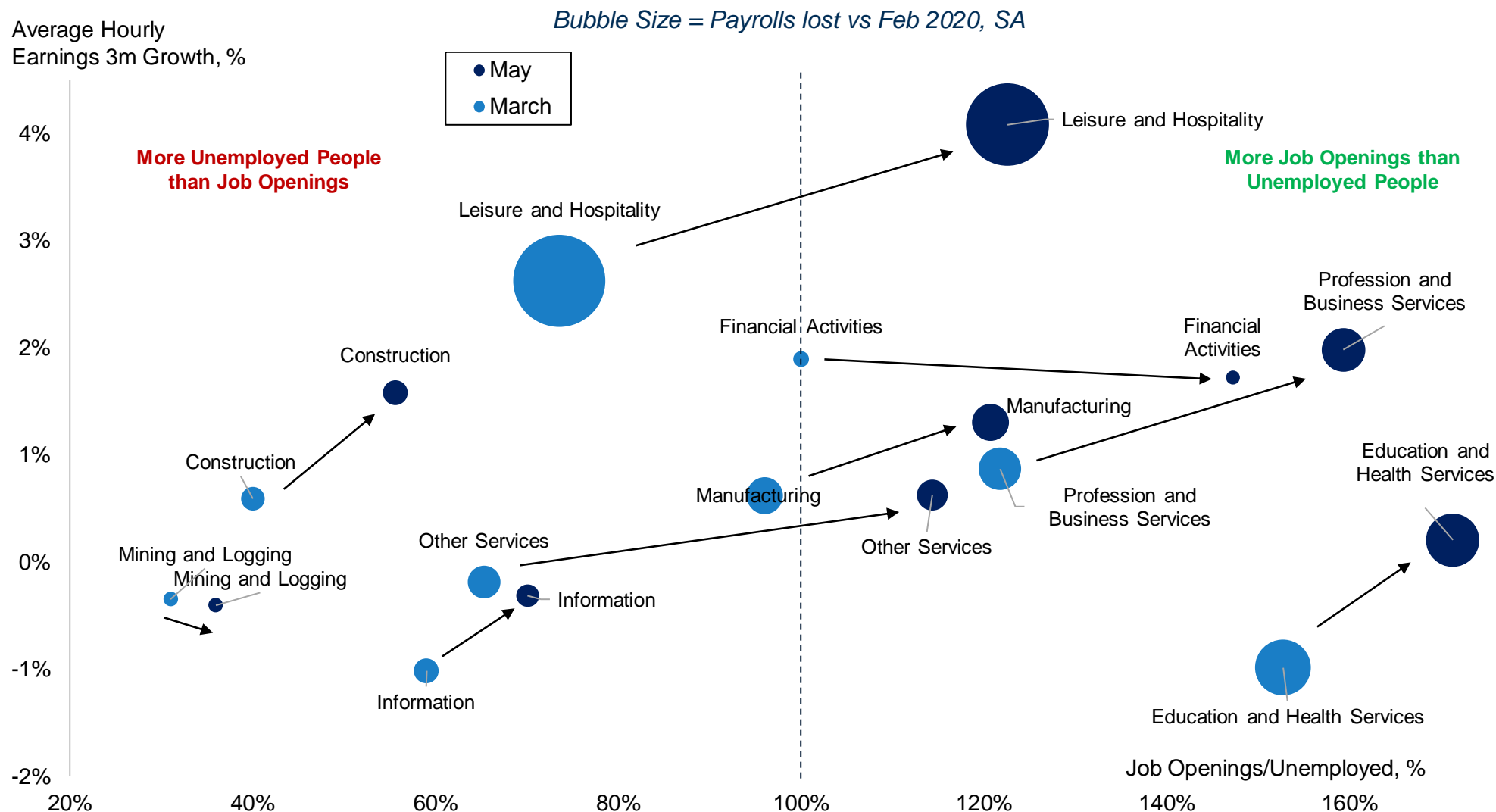


Source: Algebris Investments, Bloomberg. Data as of May-21 for Payrolls, March-21 for Total Job Openings.

Note: The 'Still Lost' category shows the difference between the Feb-20 NFP print and the latest May-21 NFP print. The 'Recovered' category shows how many jobs have been recovered from the lowest point since Feb-20.

# Escaping The QE Infinity Trap

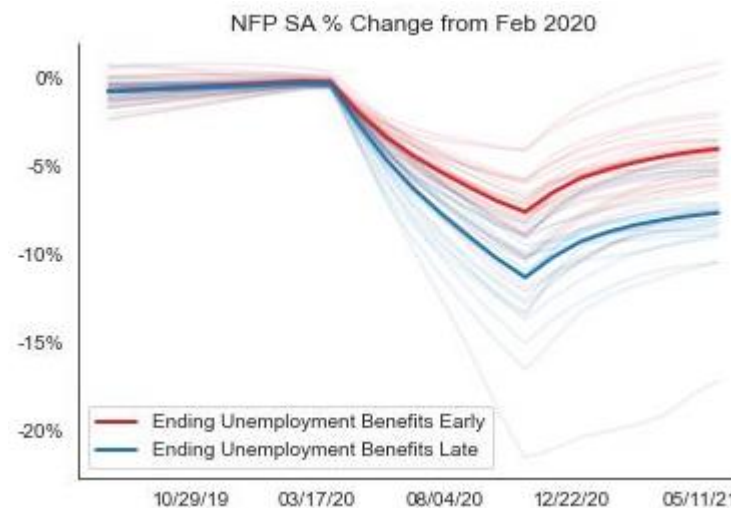
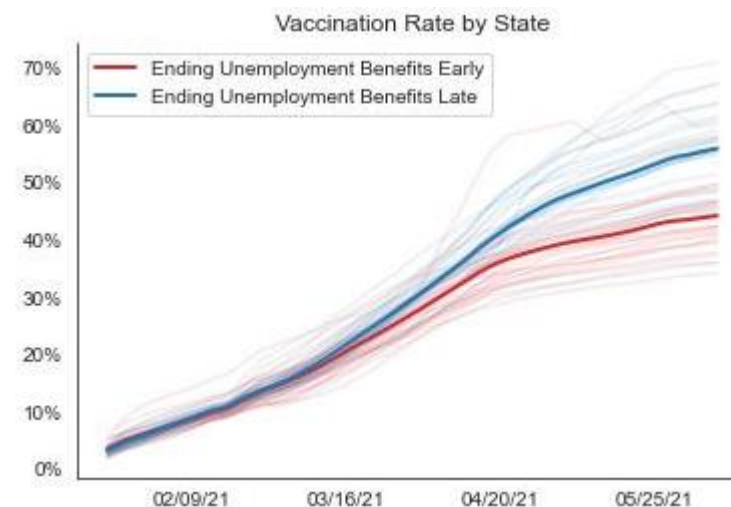
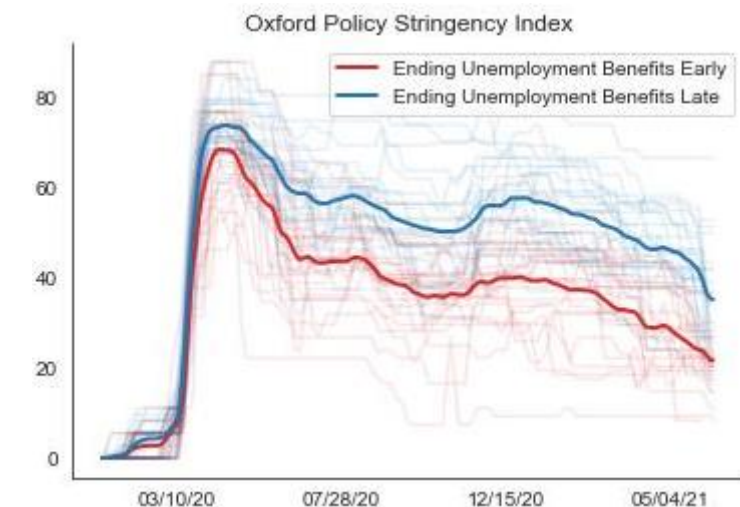
## Difficulties in Filling Jobs Are Pushing Wages Up



Source: Algebris Investments, Bloomberg, BLS. Data as of May-21

# Escaping The QE Infinity Trap

## Unemployment Benefits & Government Restrictions Still Weighing on Payroll Recovery



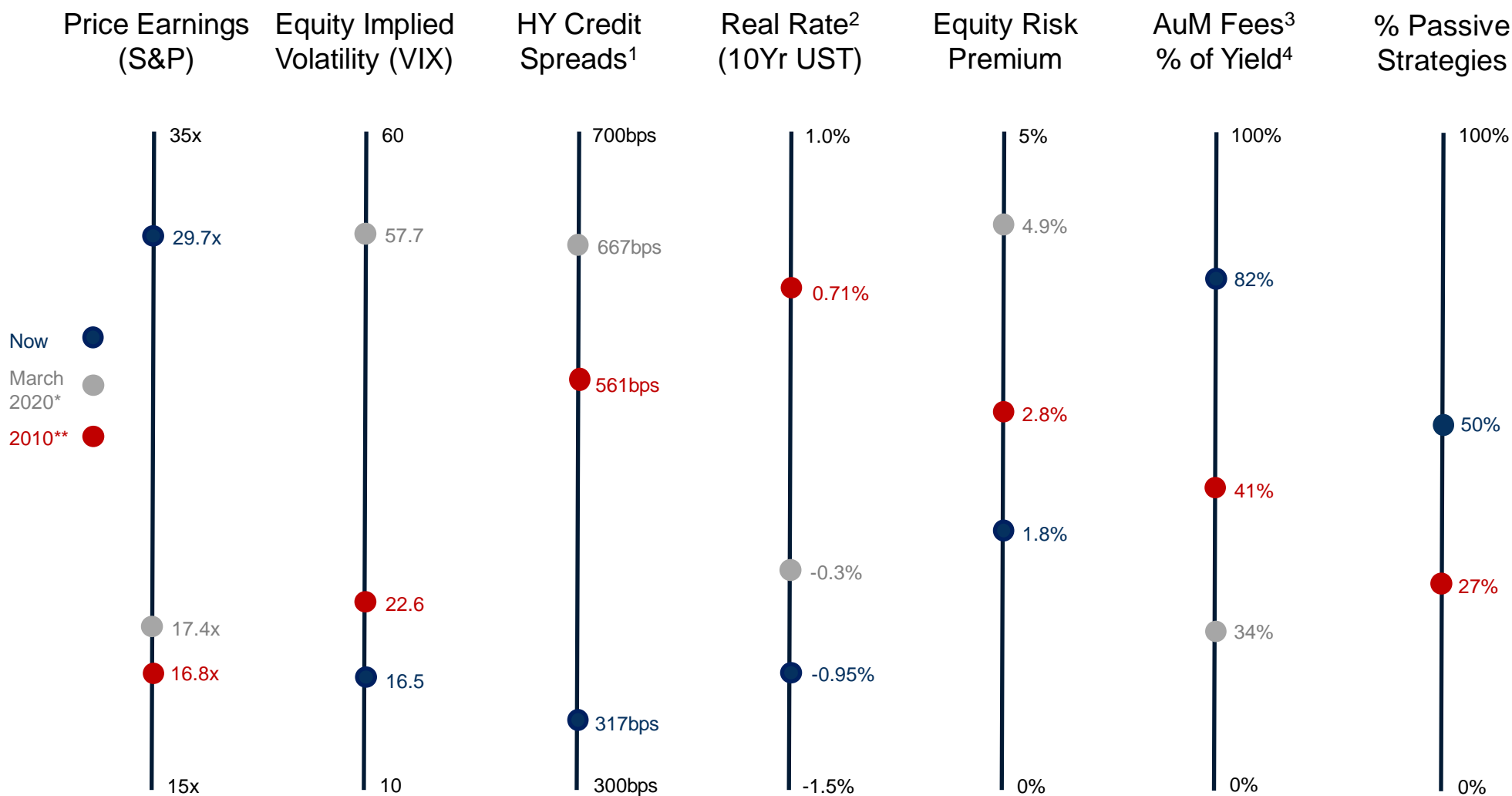
Source: Algebris Investments, Bloomberg, BLS, Homebase, Our World in Data, and Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford. Homebase and NFP data as of May-21, Vaccination and Oxford policy stringency data as of 08.06.21

## 6. The New Investment Environment: Fragility

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# The New Investment Environment

## Markets: Increased Fragility



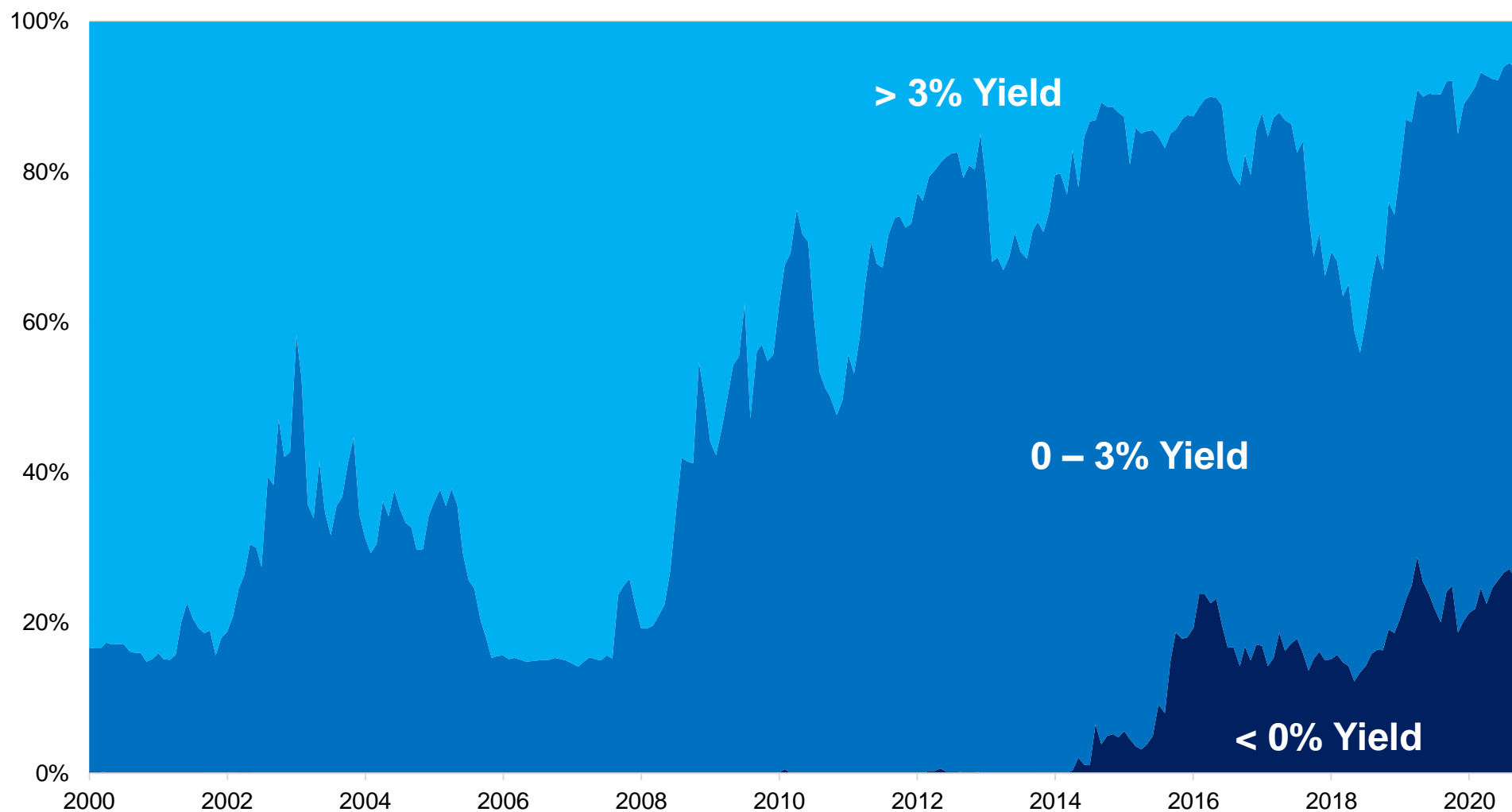
Source: Algebris Investments, Bloomberg, Morningstar. Data as of 04.06.2021 (Data as of June 2020 for Passive Strategies)

\*Represents the average value for March 2020, \*\*Represent the average value for 2010

(1) ASW Spread for ICE BofAML US High Yield Index. 10 year range. (2) 10y UST yield - 10y USD inflation swap zero coupon (3) Assumed flat fixed 50bps AuM Fees over 10 year period. (4) ASW Spread for ICE BofAML Euro Corporate Index. 10 year range.

# The New Investment Environment

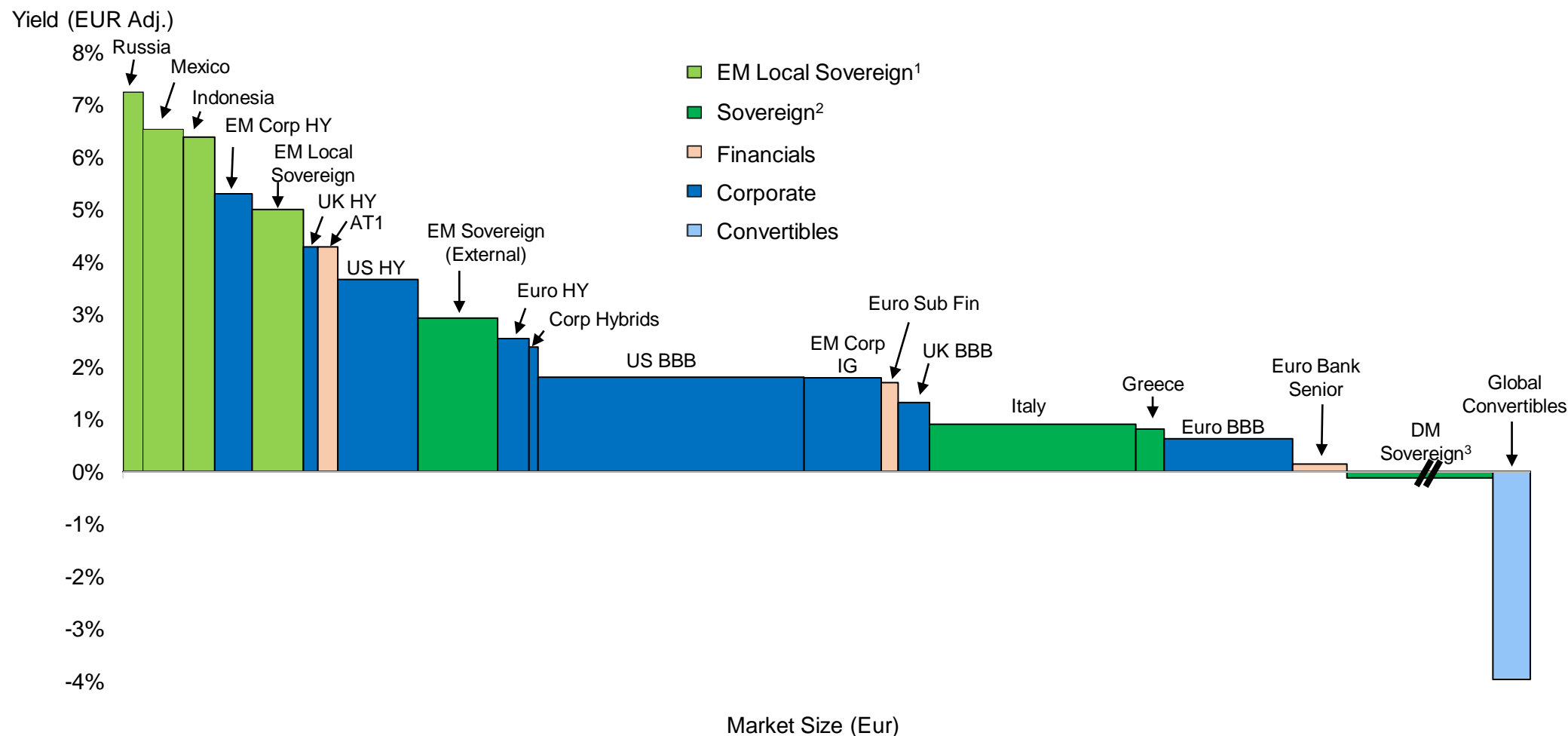
## Global Fixed Income Market: A Yield Desert



Source: Algebris Investments, ICE Data Services, LLC, BofA Securities. Data as of 31.03.2021

# The New Investment Environment

## Investing in a Yield Desert: Average Yield vs Market Size for Fixed Income Securities



<sup>1</sup>Yield shown in local currency. 10Y yields (local) and total local currency denominated debt are used for Indonesia, Mexico and Russia

<sup>2</sup>10Y yields and total country debt are used for Italy and Greece.

<sup>3</sup>DM Sovereign bar sizes adjusted. Original sizes 15x bigger

Bar sizes correspond to amounts outstanding

Source: Algebris Investments, ICE BofAML Indices, JPM GBI EM Index, Bloomberg. Data as of 03.06.21

# The New Investment Environment

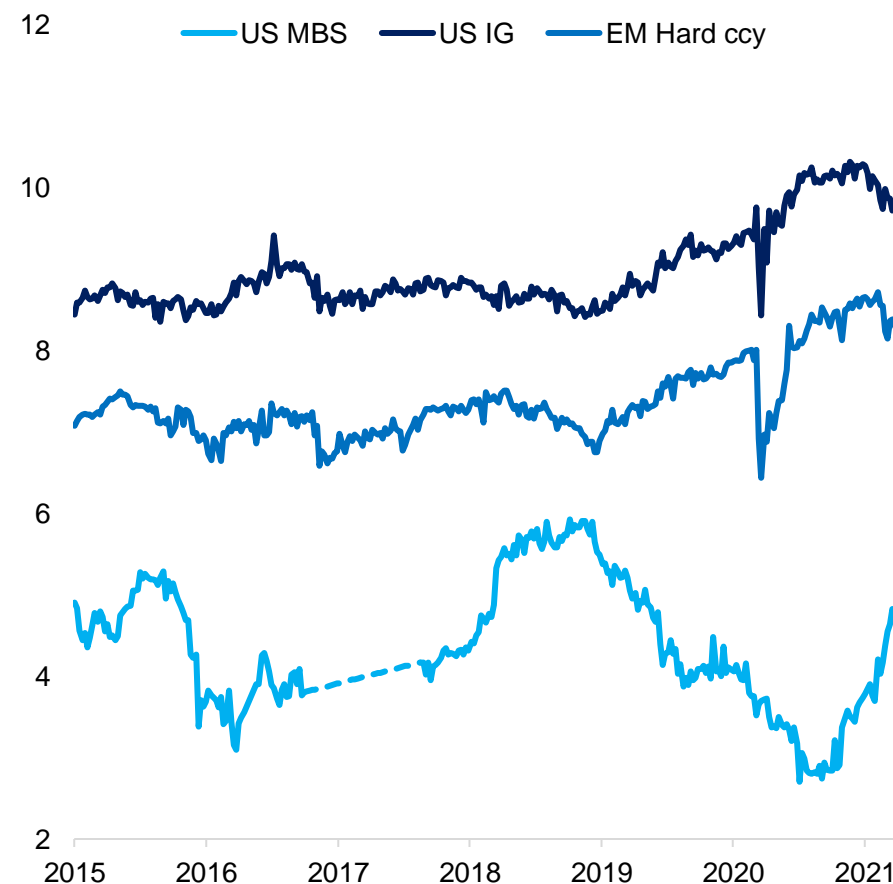
## Wipeout Buffer at Lows vs Duration at Highs

Wipeout Buffer - Basis Point Move to Wipe Out 1 Year of Carry in corporate US Baa



Source: Algebris Investments, FRED. Data as of May 2021  
Note: Assume an average duration of 10 years

Modified Duration For Selected Fixed Income Markets

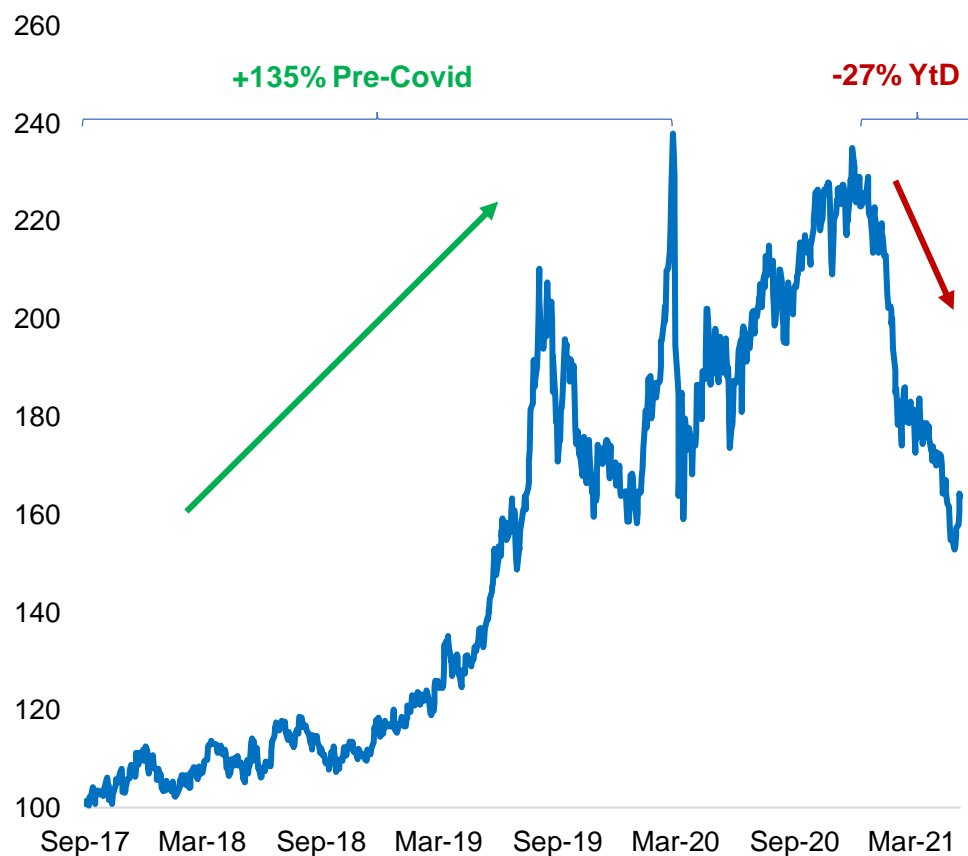


Source: Algebris Investments, Bloomberg. Data as of 04.06.21  
Note: Dotted line represents linear interpolation for a 10-month period with no data

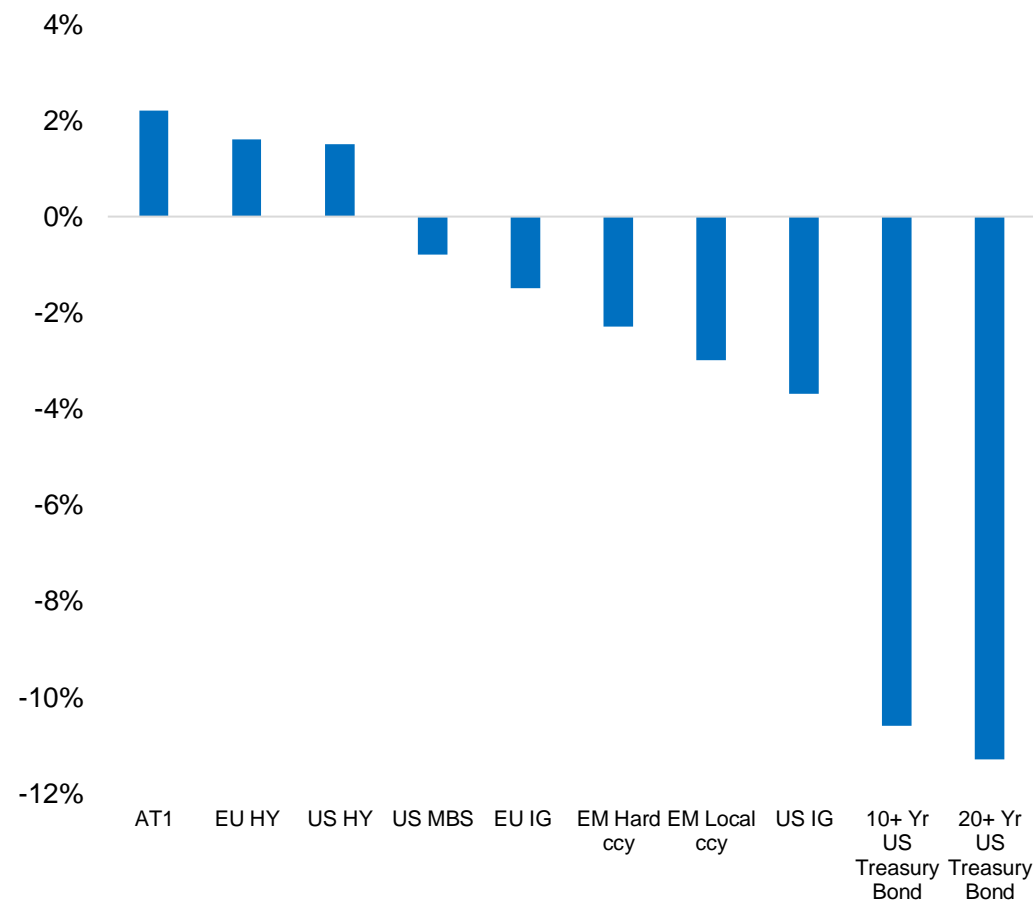
# The New Investment Environment

## Safe, But Not From Capital Losses

Austrian 100-year Government Bond



YtD Performance: Credit and Fixed Income Markets



Source: Algebris Investments, Bloomberg. Data as of 27.05.2021

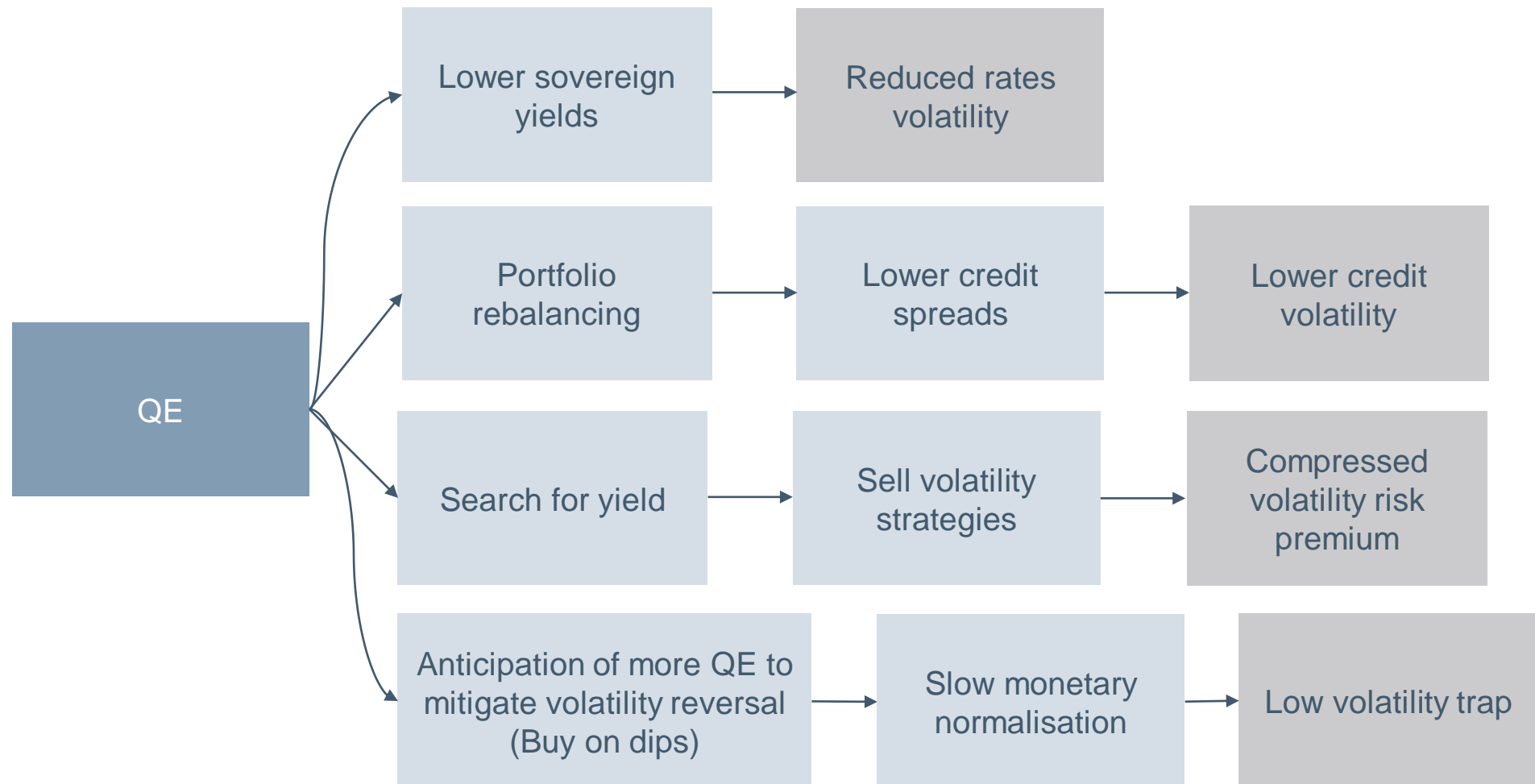
Note: AT1 LN Equity – AT1 ETF; EMB US Equity – EM Hard currency; JNK US Equity – US High Yield; IHYG LN Equity – EUR High Yield; SEML IM Equity – EM Local currency; MBB US Equity – US MBS; IBCX LN Equity – EU IG; LQD US Equity – US IG; LUTR LN Equity – 10+ Yr Treasury Bond; TLT US Equity – 20+ Yr US Treasury Bond

Source: Algebris Investments, Bloomberg. Data as of 27.05.2021

# The New Investment Environment

## From QE to Markets

How Loose Monetary Policy Has Reduced Risk Premia and Volatility



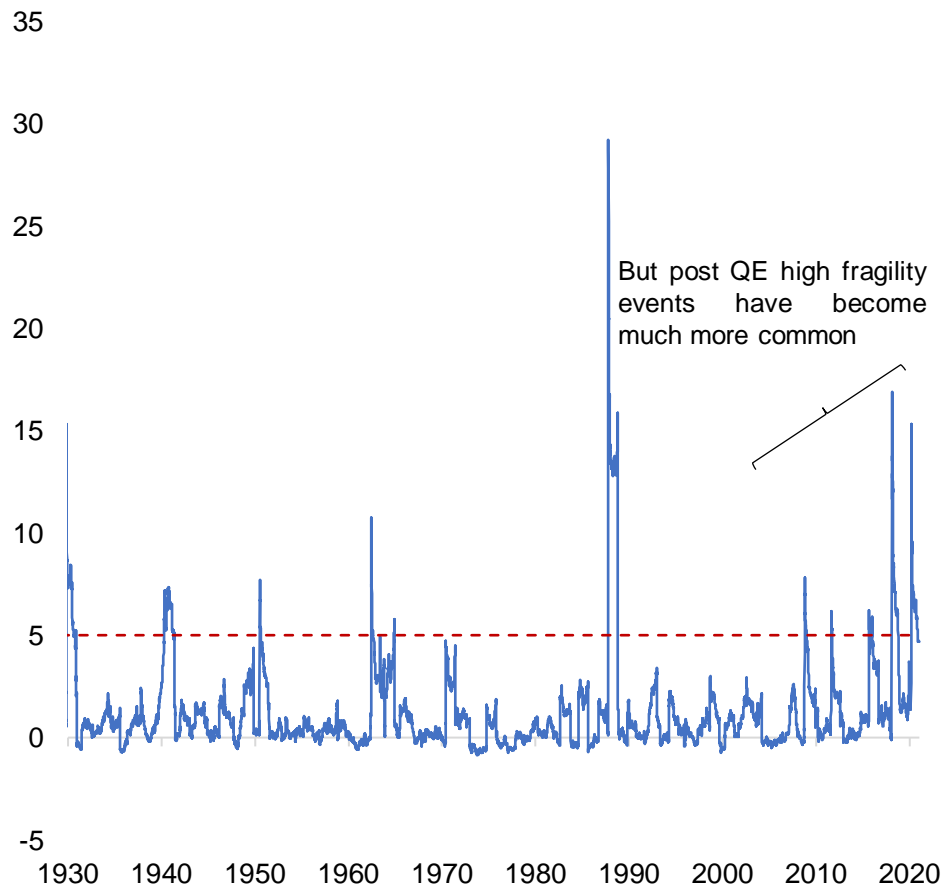
Source: Algebris Investments

# The New Investment Environment

## Volatility Pre and Post QE

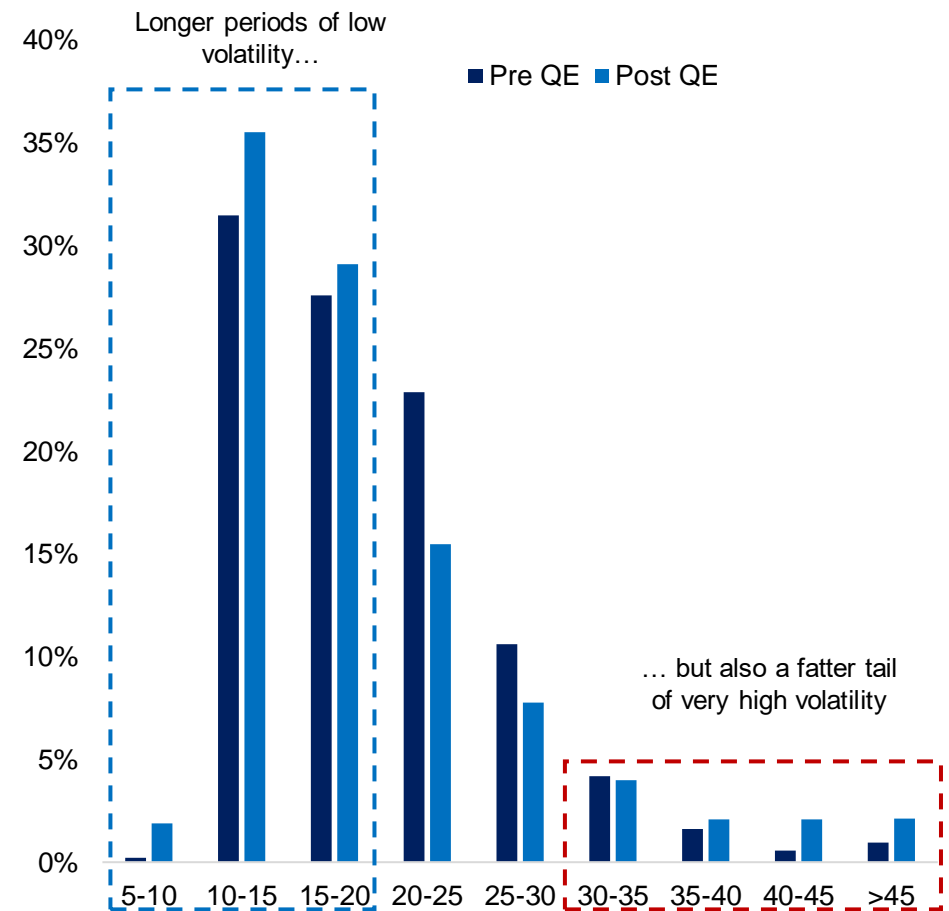
Covid Shock was the 4<sup>th</sup> Largest since 1928

*Rolling 1Y Kurtosis of weekly S&P Returns*



Source: Algebris Investments, Bloomberg  
Note: Daily data from Dec-1927 to Jan 2021. Fragility = propensity of the S&P 500 to exhibit rare but relatively sharp shocks, measured by rolling 1Yr Kurtosis of weekly S&P returns.

Proportion of Days When VIX Falls in the Range

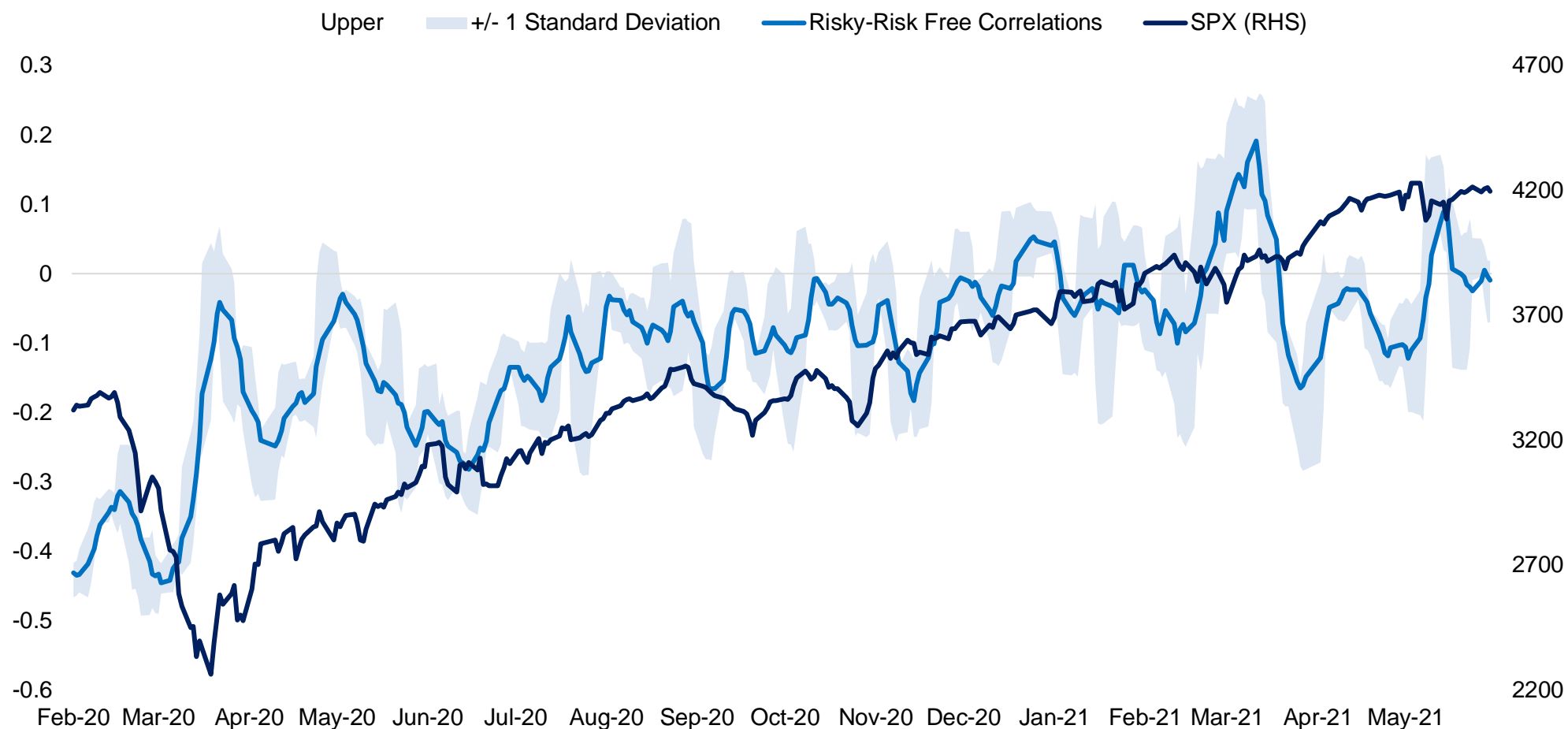


Source: Algebris Investments, Bloomberg. Data as of 04.06.2021  
Note: Pre QE – 1990 -2008, Post QE – 2008 – present.

# The New Investment Environment

## Risk Free Assets: No Longer Balancing Portfolios

7-Day Rolling Correlations, 10 Minute Intervals

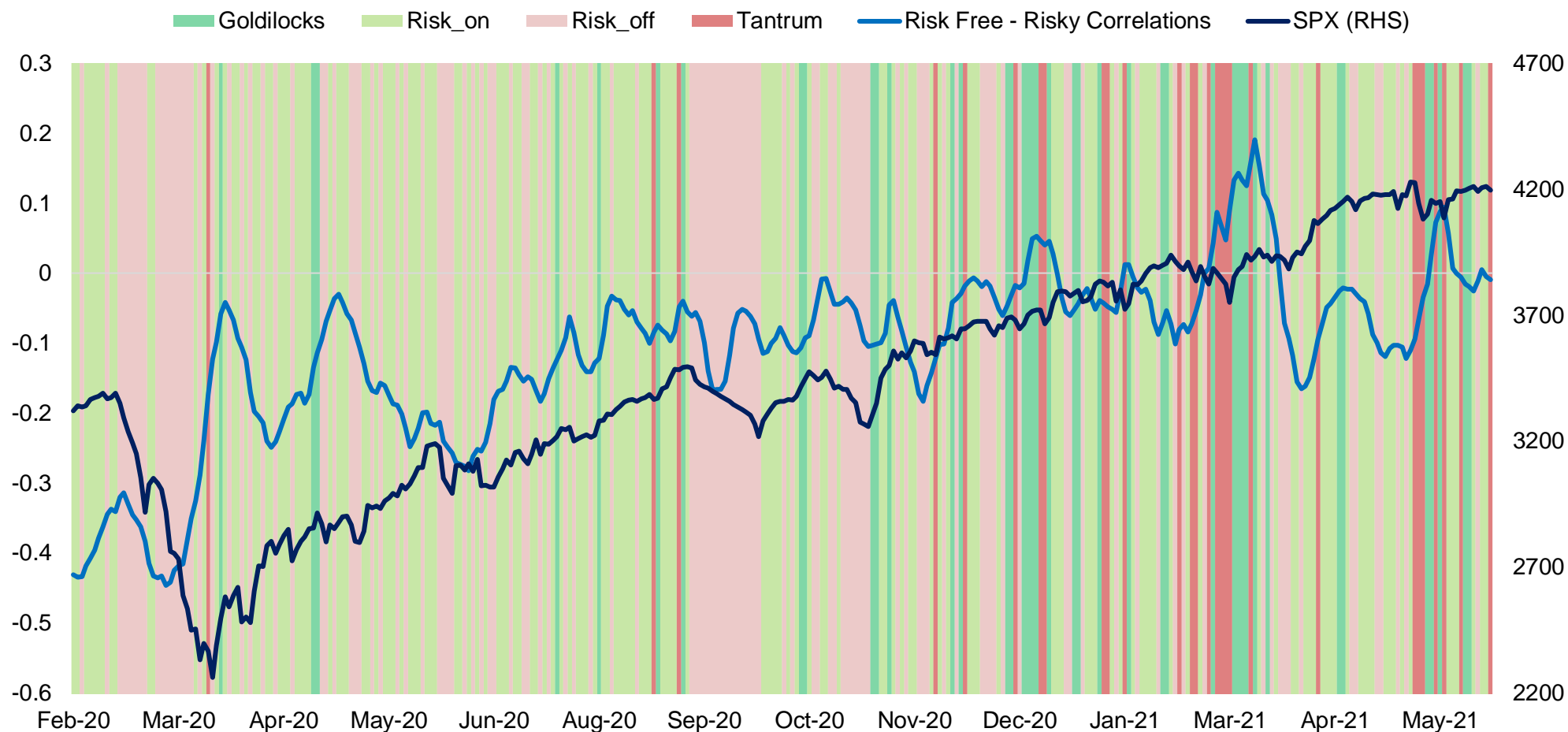


Data as of 06.04.2020  
Equities used: SX5E, SX7E, SPX, EEM, FTSEMIB, UKX and BKX; Rates used: OE1, RX1, TY1; Credit used: Xover, CDX HY, Senior Fin and EM local sovereign  
Source: Algebris Investments, Bloomberg LP

# The New Investment Environment

## Risk Free Assets Will No Longer Balance Your Portfolio

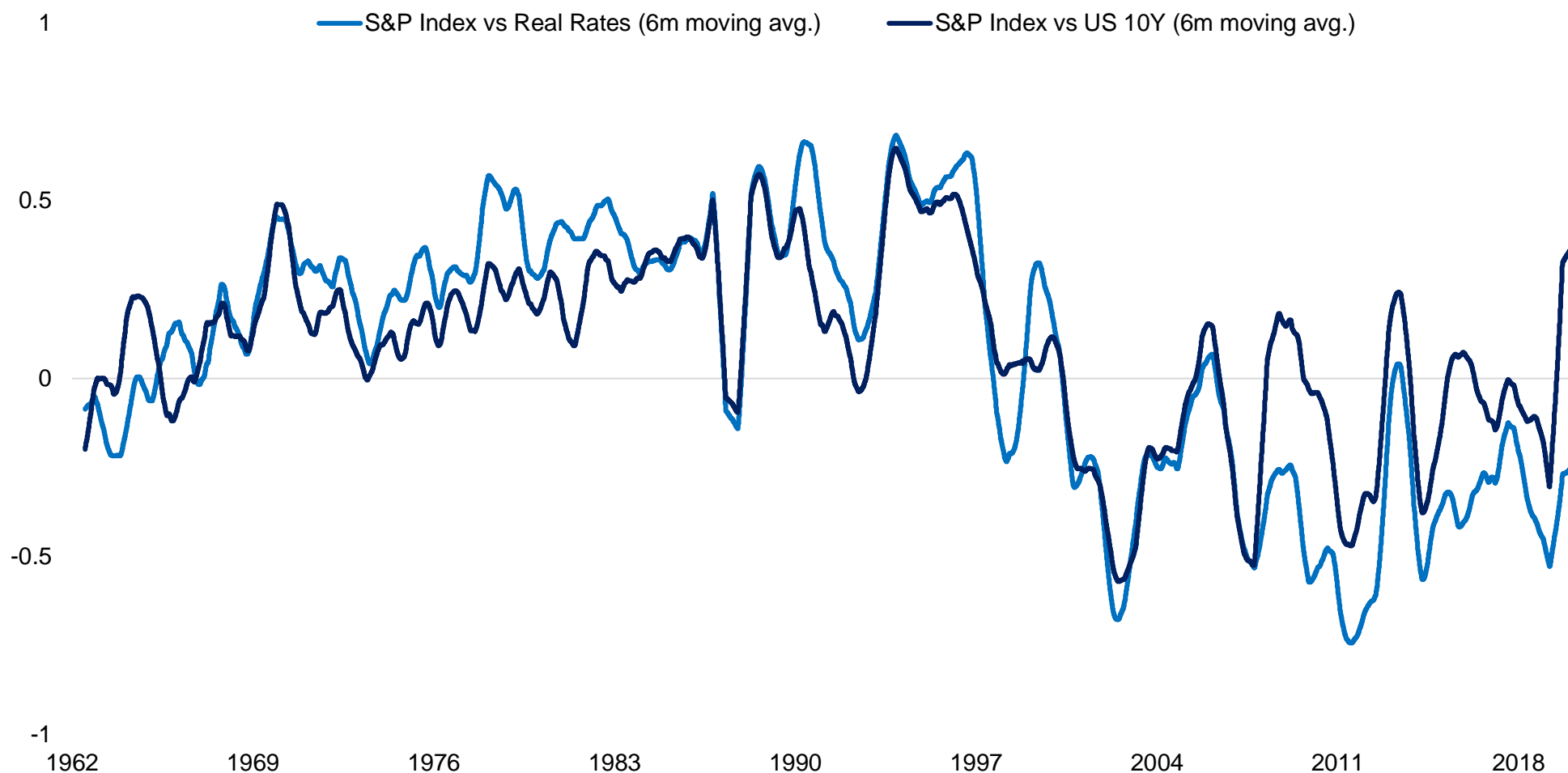
7-Day Rolling Correlations, 10 Minute Intervals With Regime Changes



Data as of 03.06.2020  
Equities used: SX5E, SX7E, SPX, EEM, FTSEMIB, UKX and BKX; Rates used: OE1, RX1, TY1; Credit used: Xover, CDX HY,  
Senior Fin and EM local sovereign  
Source: Algebris Investments, Bloomberg LP

# The New Investment Environment

## Equity-Bond Correlation: Back to Long-Term Normal?

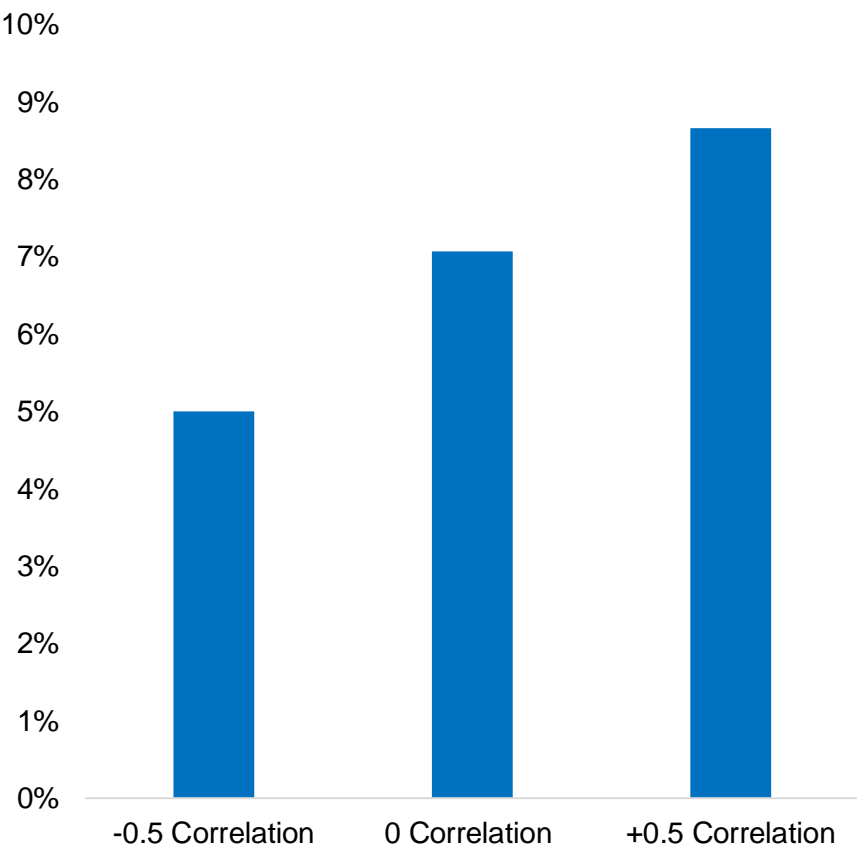


Data as of 04.06.2020  
Source: Algebris Investments, Bloomberg LP

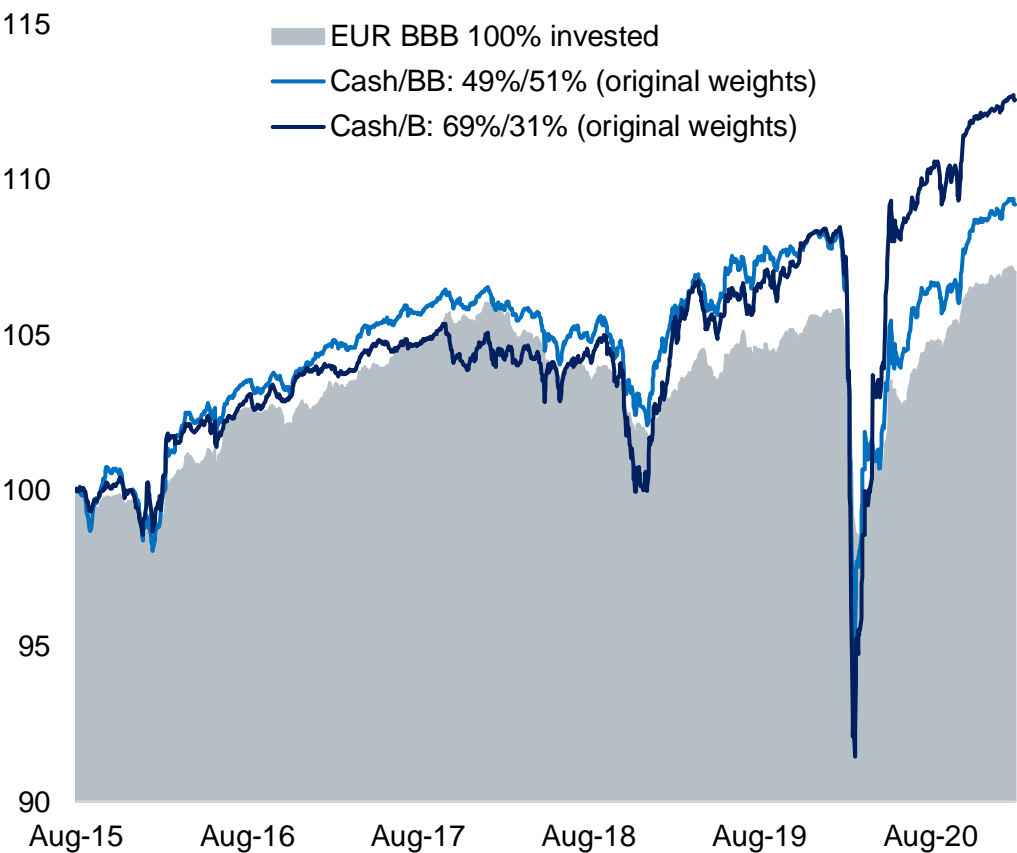
# The New Investment Environment

## Balanced Portfolios: What If Bonds No Longer Protect Returns?

Portfolio Volatility



Fully Invested Portfolio vs Risk Barbell Returns

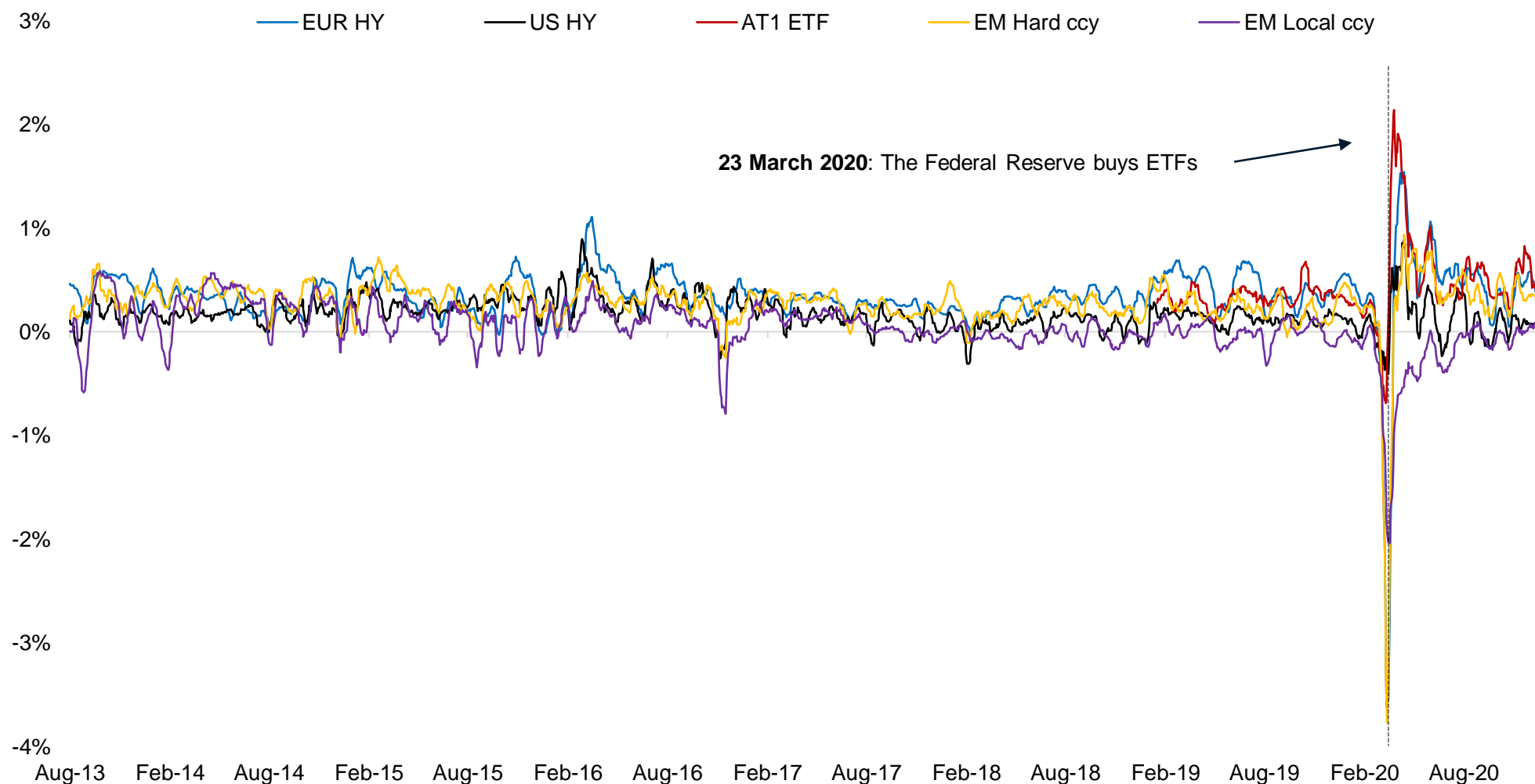


Source: Algebris Investments, Bloomberg, Macro Risk Advisors  
Note: We assume portfolio composed of 50% in stocks and 50% in bonds. We assume a volatility of 10% for both assets and three correlation levels between stocks and bonds; -50%, 0% and 50%.

Source: Algebris Investments, Bloomberg  
Note: For the barbell portfolios assume 50% of cash is deployed for every 1.2% drawdown from trailing high. The cash invested is bought back following a 1.2% recovery from drawdown levels.

# The New Investment Environment

## ETF Selloff During the Covid-19 Crisis: Fund Percentage Premium/Discount vs NAV



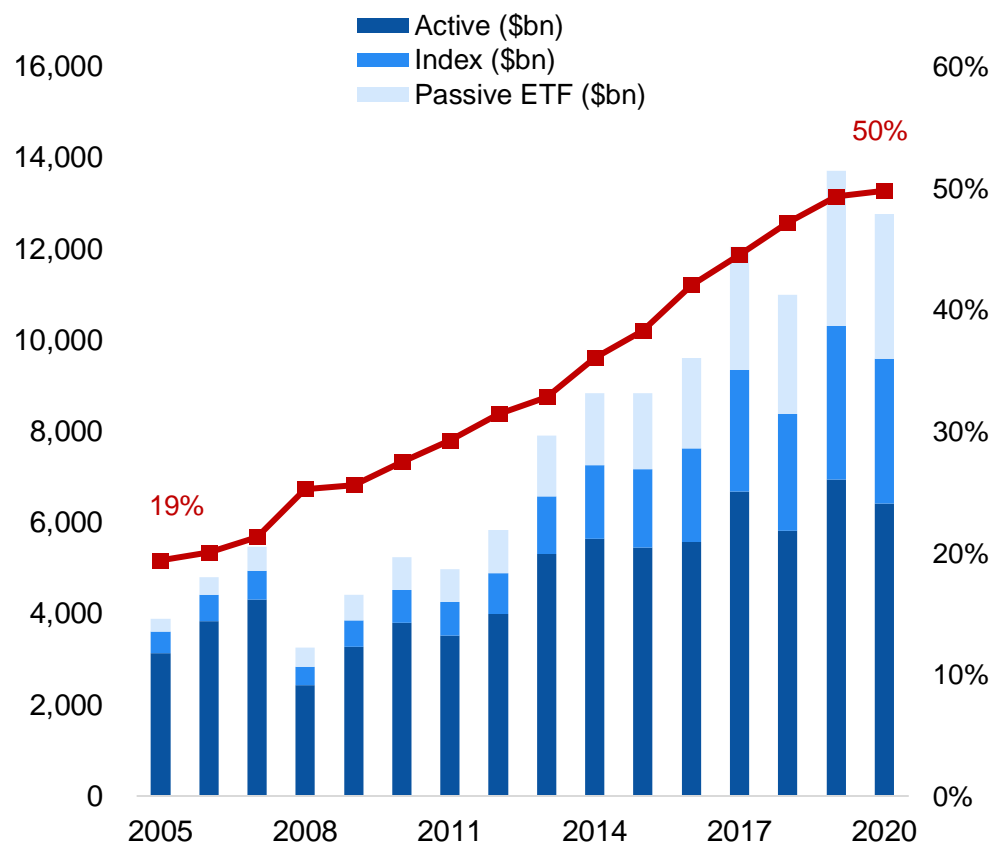
Source: Algebris Investments, Bloomberg. Data as of 07.01.21

Note: EMB US - iShares J.P. Morgan USD Emerging Markets Bond ETF (EM Hard ccy); JNK US - SPDR Bloomberg Barclays High Yield Bond ETF (US HY); AT1 LN - Invesco AT1 Capital Bond UCITS ETF (AT1 ETF); IHYG LN - iShares EUR High Yield Corp Bond UCITS ETF (EUR HY); SEML IM - iShares JP Morgan EM Local Government Bond UCITS ETF (EM Local ccy)

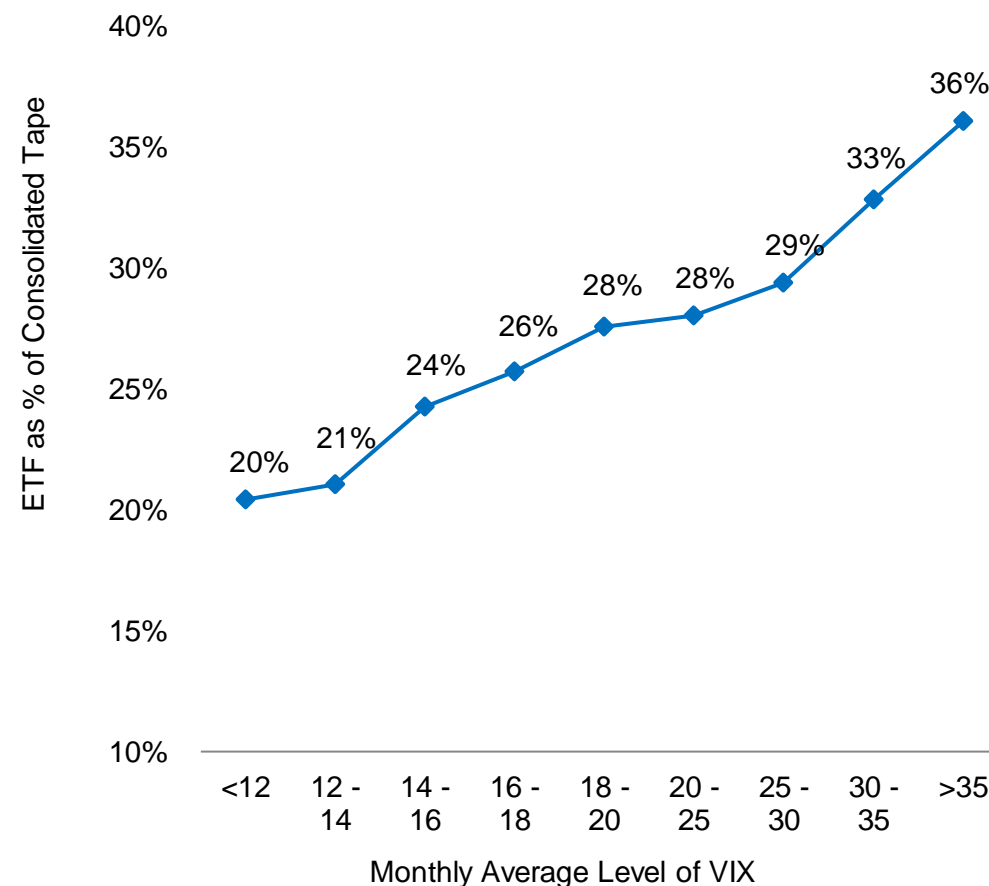
# The New Investment Environment

## The Passive Investing Feedback Loop

Passive & Index investing increased to 50% of the US Equity Market



ETF usage rises as market volatility increases  
(ETF Volumes as a % of the Total Tape, by Average Monthly VIX Levels)

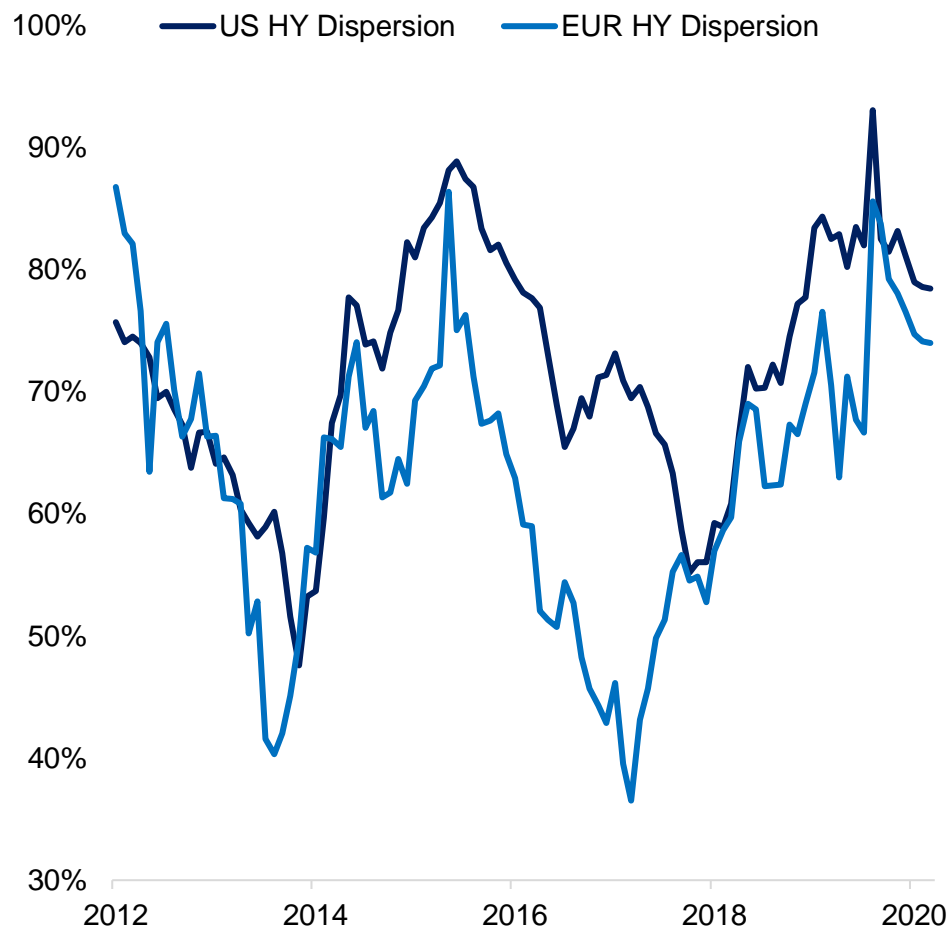


Source: Algebris Investments, GS Research. Data as of 30.06.2020

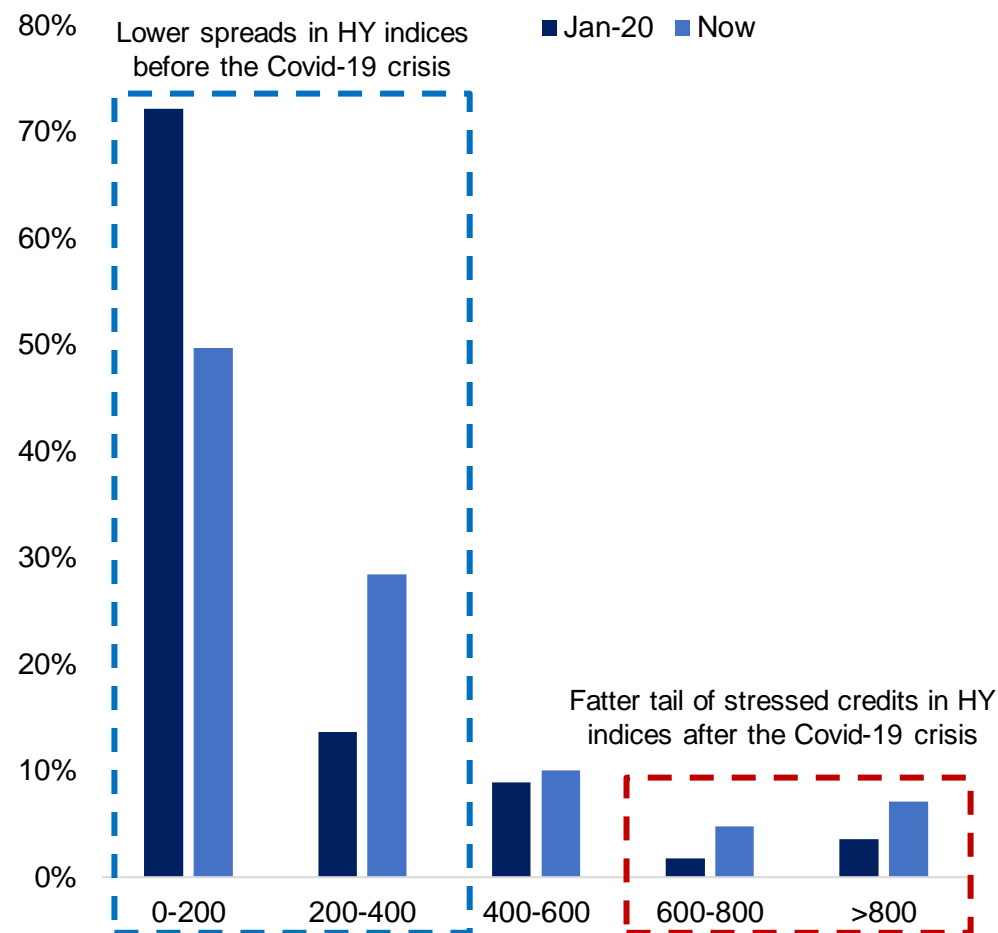
# The New Investment Environment

## High Dispersion Provides Fertile Ground for Alpha

### QE Keeps Markets Stable But no Longer Lifts All Boats



### Proportion of Names in the Range – iTraxx Xover & CDX HY



HY Dispersion is calculated as the proportion of face value in the DM USD and EUR HY index marked outside +/-100bps of overall index level  
Source: Algebris Investments, BofAML. Data as of 30.10.2020

Source: Algebris Investments, Bloomberg. Data as of 01.12.2020

# The New Investment Environment

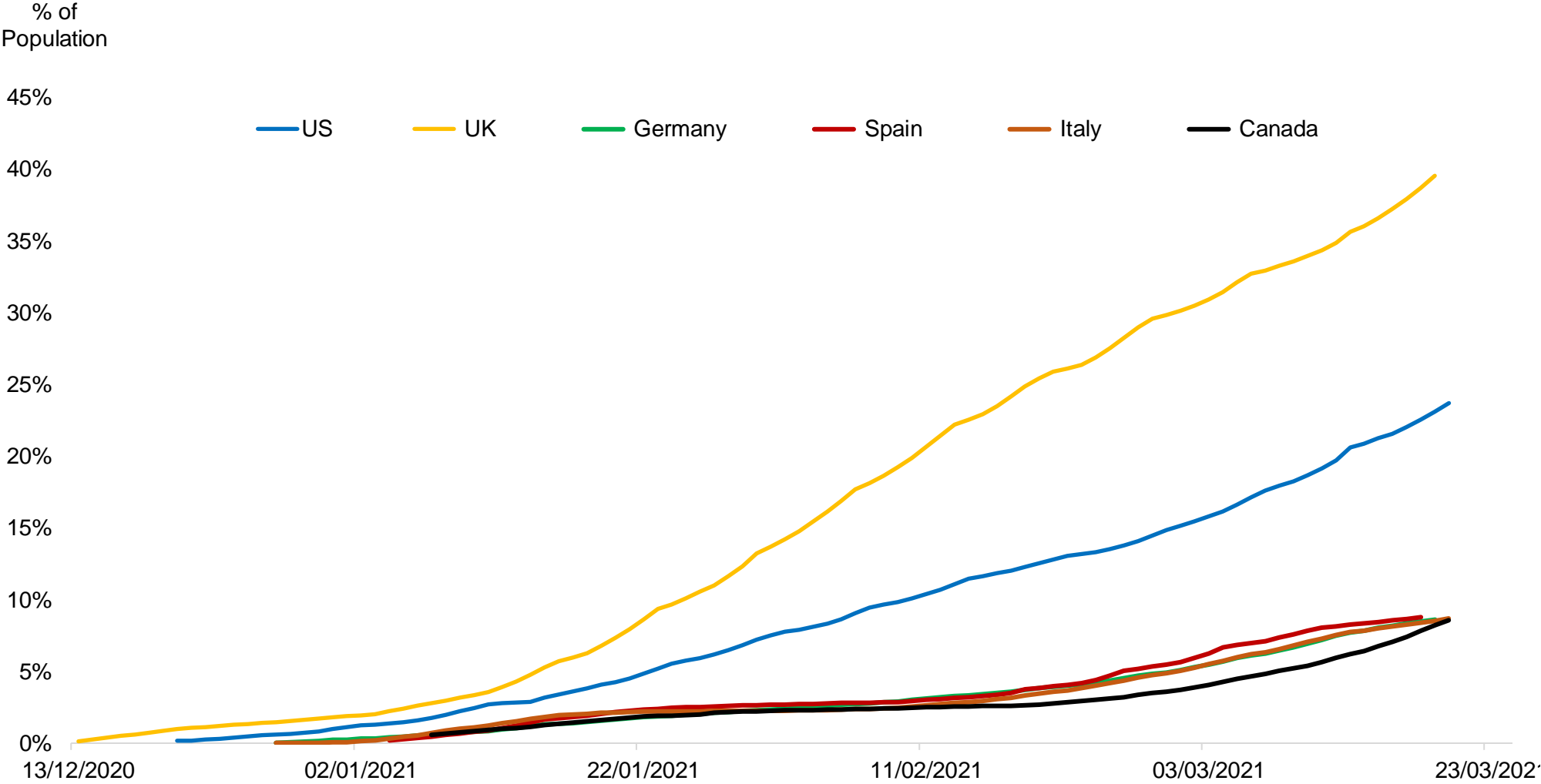
## Fragility is Common, Anti-Fragility is Rare

	<b>Fragile</b>	<b>Robust</b>	<b>Anti-Fragile</b>
<b>Medicine</b>	Anaesthesia	Vaccine	Mithridatism
<b>Pension System</b>	Defined Benefits	Defined Contributions	Social Shock Absorbers
<b>Technology</b>	Centralised Hard Drive	Underground Storage	Cloud Storage
<b>Mythology</b>	Damocles	Ulysses	Hydra
<b>Nature</b>	Dinosaurs	Land Turtle	Ant Colony/Bacteria
<b>Objects</b>	Tea Set	Anvil	Spring
<b>Financial Markets</b>	Passive Investing/Herding Financial Engineering/Complexity	Active Management	Tail Risk Strategies
<b>Monetary Policy</b>	Forward Guidance	Rule-Based Approach	Macro-prudential Policy
<b>Capital Structure</b>	Debt	Equity	AT1
<b>Sovereign Debt</b>	Hard Currency External Debt	Domestic Currency Debt	Growth-Linked Debt
<b>Economic Agents</b>	Politicians	Regulators	Long-Term/Contrarian Investors
<b>Government Structure</b>	Eurozone	Singapore	Switzerland

Source: Algebris Investments. With reference and inspiration from *Antifragile: Things that Gain from Disorder*, N. N. Taleb (2013)

# The New Investment Environment

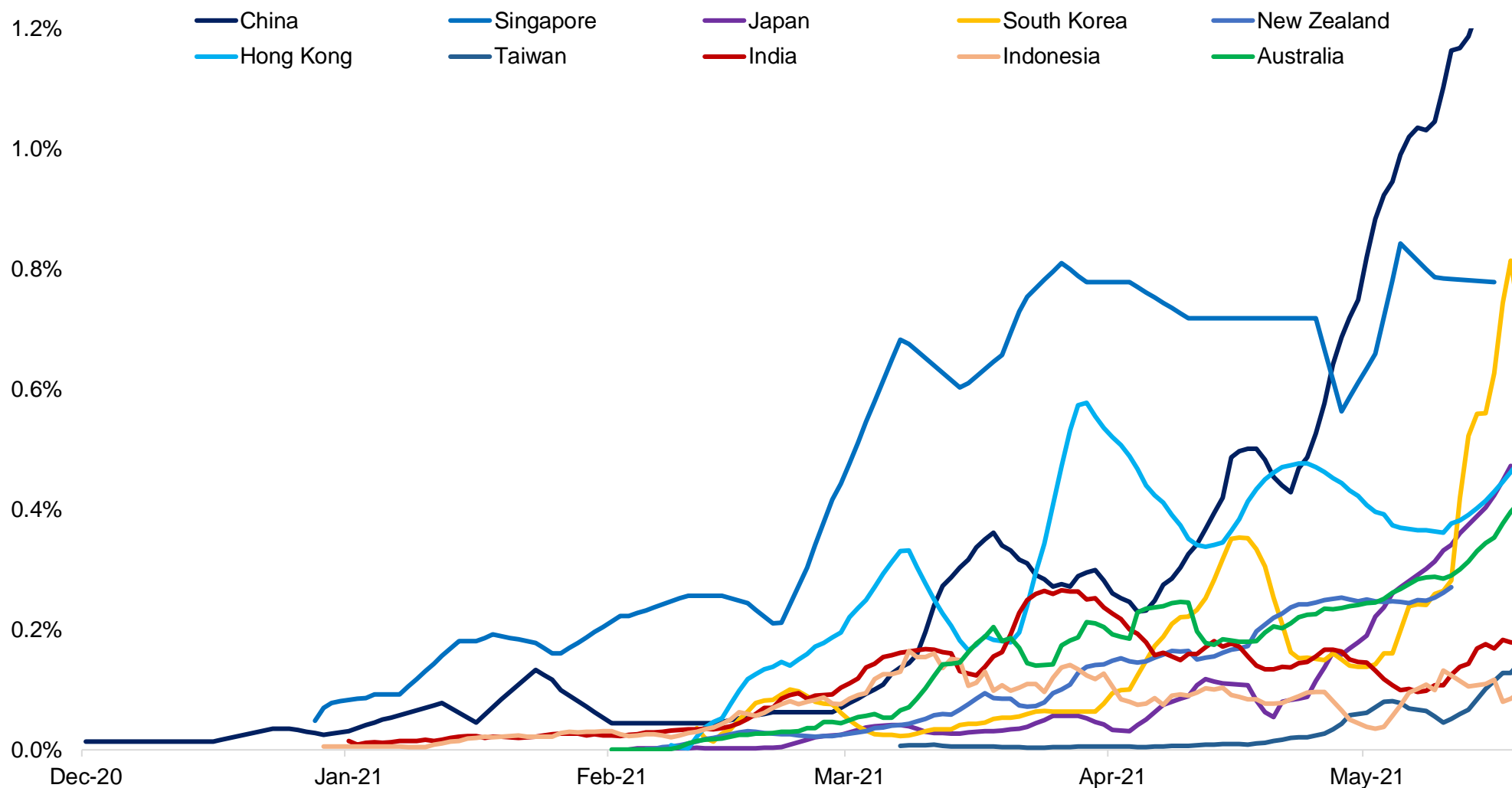
## COVID-19: % of Population Vaccinated



Latest data as of 20.03.2021  
Source: Algebris Investments, Our World In Data

# The New Investment Environment

## Vaccination Progress, APAC: Daily Rollouts as % Population



Source: Algebris Investments, Our World in Data. Data as of 03.06.21

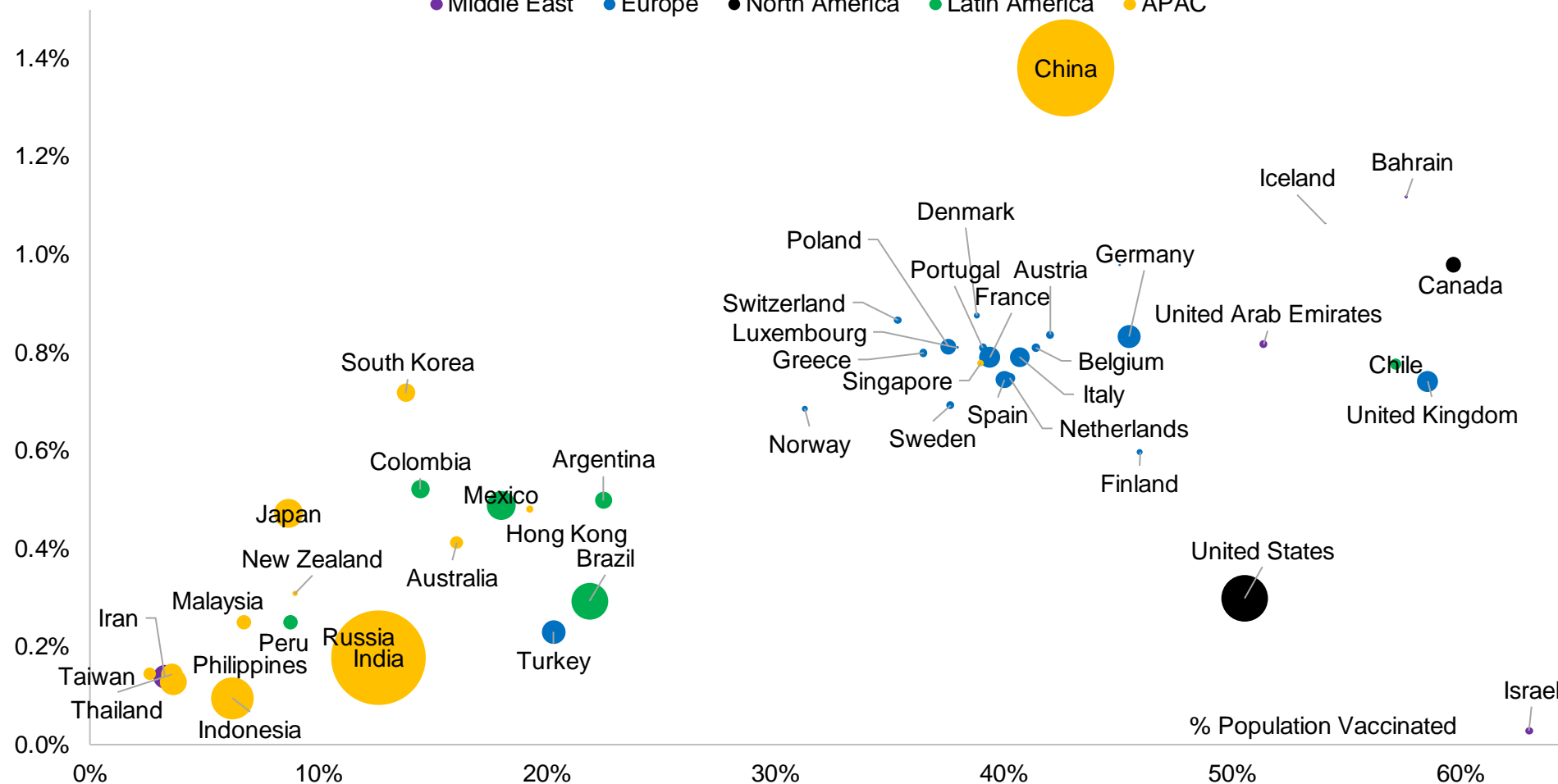
# The New Investment Environment

## Daily Vaccine Rollout vs % Population Vaccinated: LatAm and APAC Lagging

Daily Vaccine Rollout,  
% Population

\*Bubble Size = Population Size

● Middle East ● Europe ● North America ● Latin America ● APAC



Source: Algebris Investments, Our World in Data, Data as of 03.06.21

## 7. New Policy Instruments

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# New Policy Instruments

## An Overview of Central Bank New Policy Instruments

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### 1. Central Bank Policy Reviews

ECB Strategy Review is expected to be completed in the second half of 2021. The aim is to make sure monetary policy strategy is fit for purpose, both today and in the future.

The Fed completed it's first every Policy Strategy Review last summer



### 2. Average Inflation Targeting (AIT)

*"We are not tying ourselves to a particular mathematical formula that defines the average. Thus, our approach could be viewed as a flexible form of average inflation targeting"*

– Jerome Powell, Federal Reserve, 27 August 2020

*"From the point of view of economic and social welfare it makes sense to accept a certain period of [inflation] overshooting, while taking into account the history of undershooting"*

– Olli Rehn, European Central Bank, 9 May 2021



### 3. Green QE



### 4. Yield Curve Controls (YCC)



### 5. Central Bank Digital Currencies

*"In this context, **GovCoins will be policy dynamite in the central bankers' toolkit.** They will allow for the speeding up of electronic transactions and better track the flow of money across the economy. They may also introduce stimulus more effectively and targeted to individuals and businesses in real need."*

– [Bloomberg Opinion](#), 25 May 2021

# New Policy Instruments

## G10 Hawk – Dove Spectrum

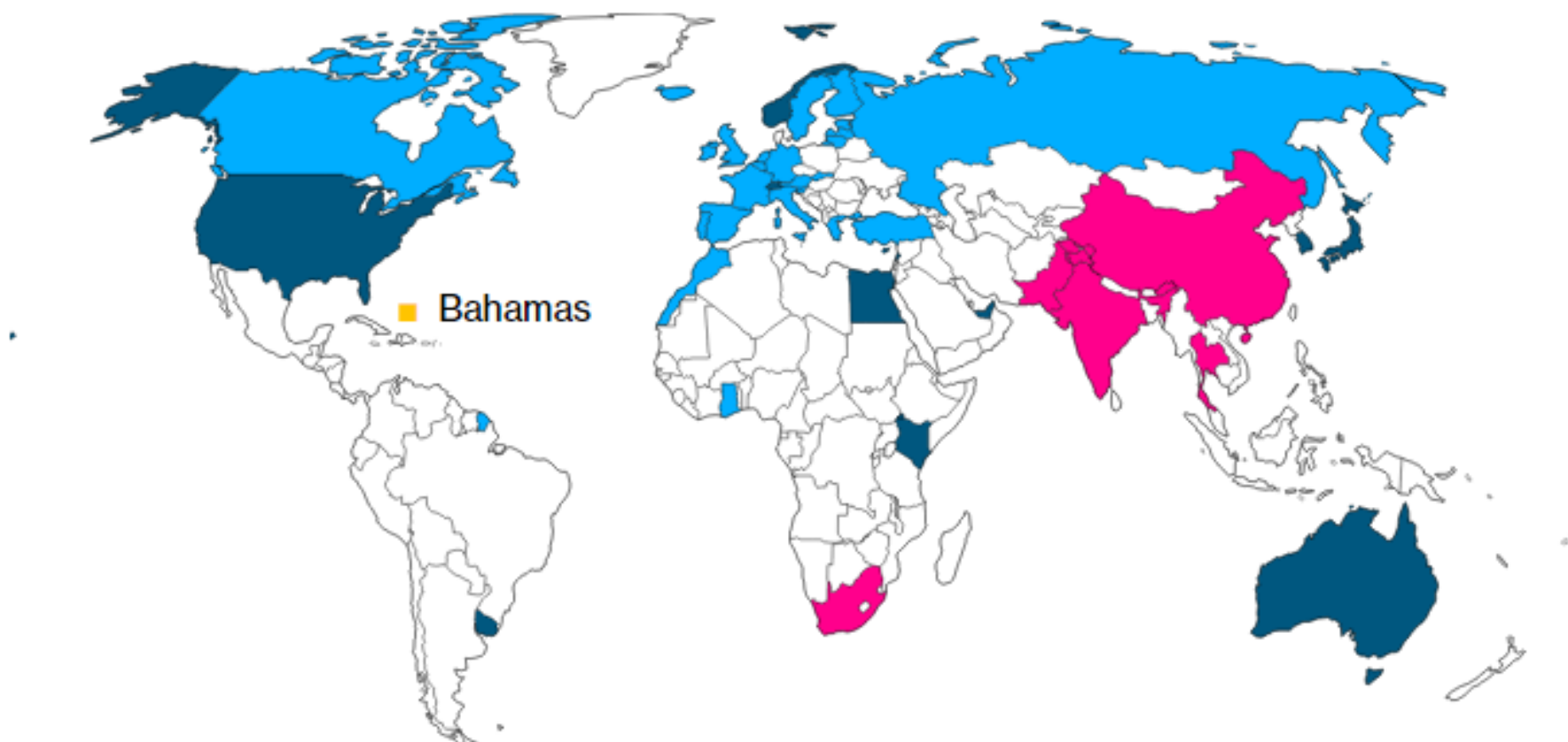
	Overall Policy Stance	Inflation targeting: overshoot, symmetric target or ceiling?	Policy focus: actual or expected inflation?	Bond purchase program: YCC, QE, etc.	Other asset purchases: scope & size	Forward guidance	Financial stability: lean against bubbles or policy "put"?
Dovish	BoJ	Fed	BoJ, Fed, RBA	BoJ	BoJ, SNB	BoJ, Fed, RBA, Riksbank, SNB	BoJ, Fed, RBA, Riksbank, SNB
	Fed	BoJ		RBA			
	RBA, Riksbank, SNB	RBA		Fed, Riksbank, RBNZ	Fed, ECB, Riksbank		BoE, BoC
	ECB, BoE	BoE, BoC, Riksbank, Norges Bank, RBNZ		ECB	RBA, RBNZ	ECB	Norges Bank
	RBNZ			BoE	BoC	BoE	ECB, RBNZ
	BoC	ECB, SNB	SNB	BoC, SNB	BoE	RBNZ	
Hawkish	Norges Bank		ECB, BoC, BoE, Riksbank, Norges Bank, RBNZ	Norges Bank	Norges Bank	BoC, Norges Bank	

Source: Algebris Investments, BofA Global Research, G10 Central Banks websites.

# New Policy Instruments

## Central Banks Are At Varying Stages of Developing Digital Currencies

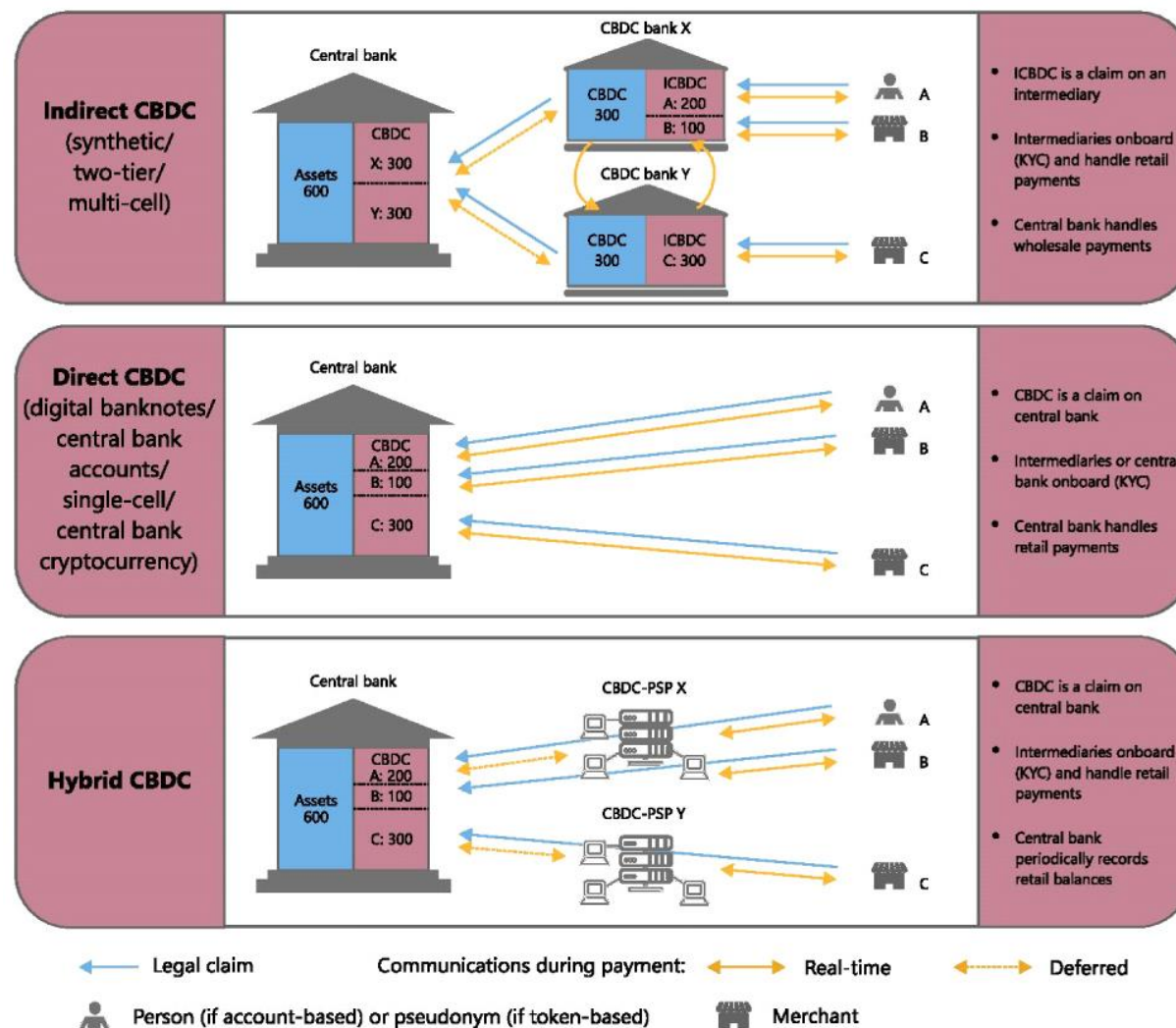
- CBDC already being issued
- Plans to issue CBDC
- Actively exploring CBDC feasibility
- Conducting research and/or experiments



Source: Bloomberg

# New Policy Instruments

## An Overview of Potential Retail CBDC Architectures



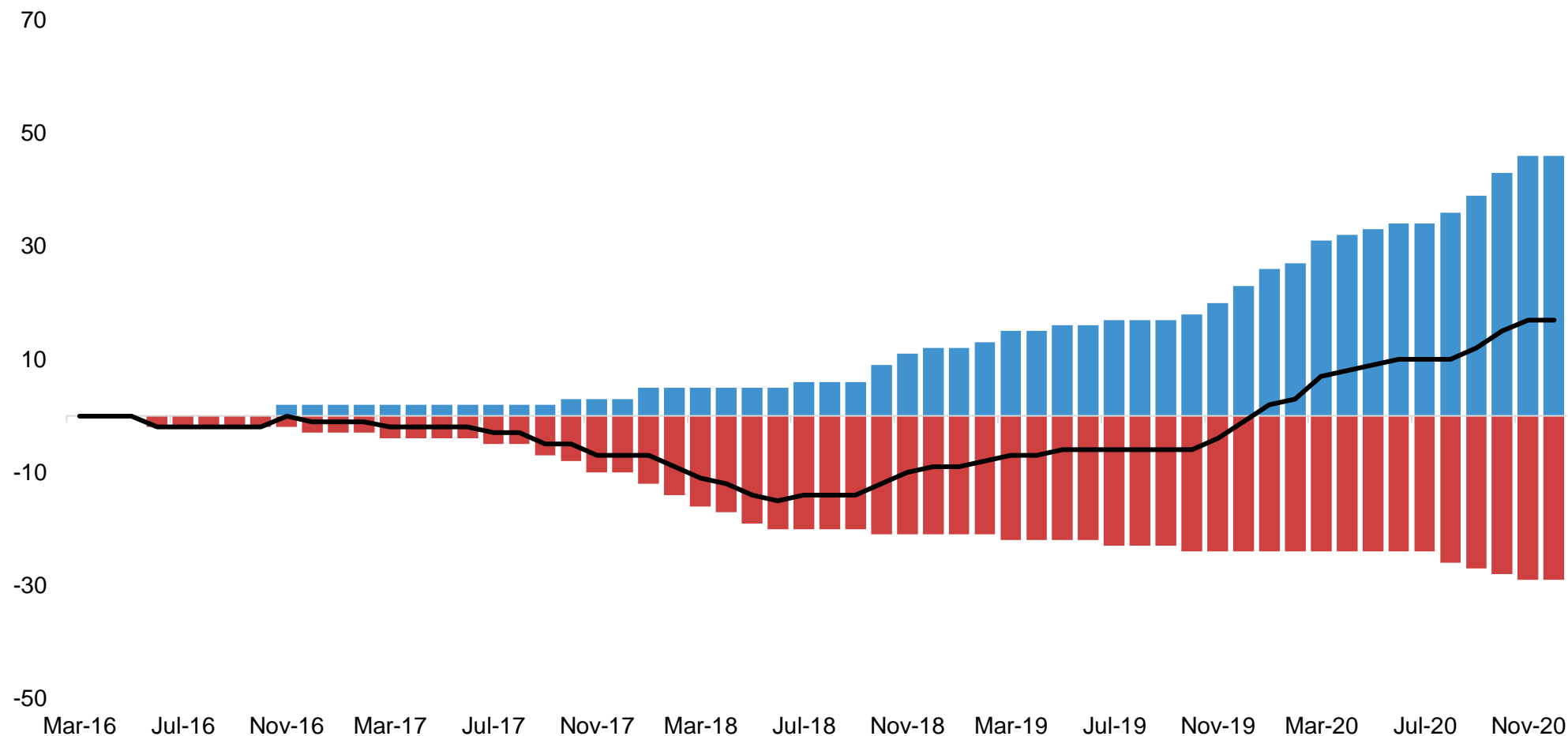
Source: Algebris Investments, BIS: The technology of retail central bank digital currency

# New Policy Instruments

## The Transition Towards Central Bank Digital Currencies?

Number of Speeches  
(cumulative)

Positive Stance Negative Stance Net (positive - negative)



Source: Algebris Investments, BIS Working Papers 880, centralbanking.com; Central bankers' speeches; central banks' websites; authors' calculations.

Note: Search on keywords "CBDC", "digital currency" and "digital money". The classification is based on the authors' judgment. The score takes a value of -1 if the speech stance was clearly negative or in case it was explicitly said that there was no specific plan at present to issue digital currencies. It takes a value of +1 if the speech stance was clearly positive or a project/pilot was launched or was in the pipeline. Other speeches (not displayed) have been classified as neutral.

# New Policy Instruments

## The Transition Towards Central Bank Digital Currencies?

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What are the advantages of a CBDC from a policy standpoint? ***“it’s not a policy discussion, but a political discussion. Are we satisfied if the daily functioning of the economy is a conversation between citizens and banks, or do we want the CB to be a part of it, who do you trust more? The answer is different in different places or corners of society”***

– Benoît Cœuré, Bloomberg Odd Lots Podcast, October 2020

Would CBDC strengthen the transition of monetary policy? ***“This is the elephant in the room, and it’s a question most central banks are working hard not to answer”***

– Benoît Cœuré, Bloomberg Odd Lots Podcast, October 2020

***“A key question for most central bankers to answer is; do you want to do CBDC for monetary policy reasons or do you want to make it as neutral as possible with respect to the way you implement your monetary policy?”***

– Benoît Cœuré, Bloomberg Odd Lots Podcast, October 2020

***“[A Digital Currency] is not something that is good for the elite or is good for the young or is good for some versus others. If it is well done and if it is well implemented, it would be of service to all citizens.”***

– Christine Lagarde, ECB Press Conference, January 2021

***“I want to downplay any expectations that [the digital euro] is about to come. It will take a number of years, it is a complicated issue, it’s one that has to be resolved without disrupting the current financial scene, nor jeopardising the monetary policy transmission that we have currently.***

– Christine Lagarde, ECB Press Conference, January 2021

***“If and when we have a digital euro, we will nonetheless always have banknotes. So, the two will coexist.”***

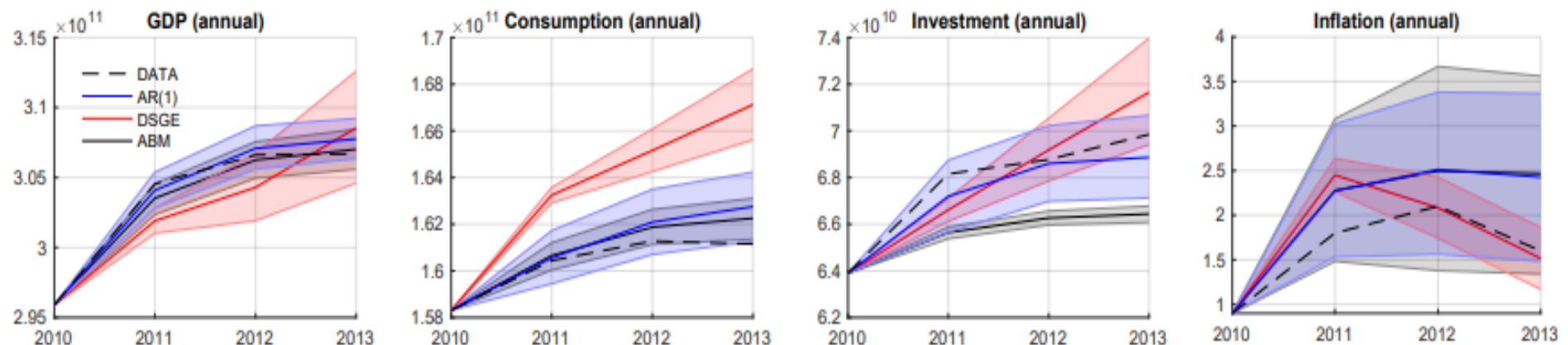
– Christine Lagarde, ECB Press Conference, January 2021

# New Policy Instruments

## Agent Based Models – New Forecasting Tools

### Economic Forecasting with an Agent-based Model, Sebastian Poledna, 24 February 2020

- The first agent-based model (ABM) that can compete with benchmark VAR and DSGE models in out-of-sample forecasting of macro variables.
- Moves from single-agent to simulation outcomes based on multiple agents.
- The detailed structure of the ABM allows for a breakdown into sector level forecasts.
- Potential applications of the model include stress-testing and predicting the effects of changes in monetary, fiscal, or other macroeconomic policies.



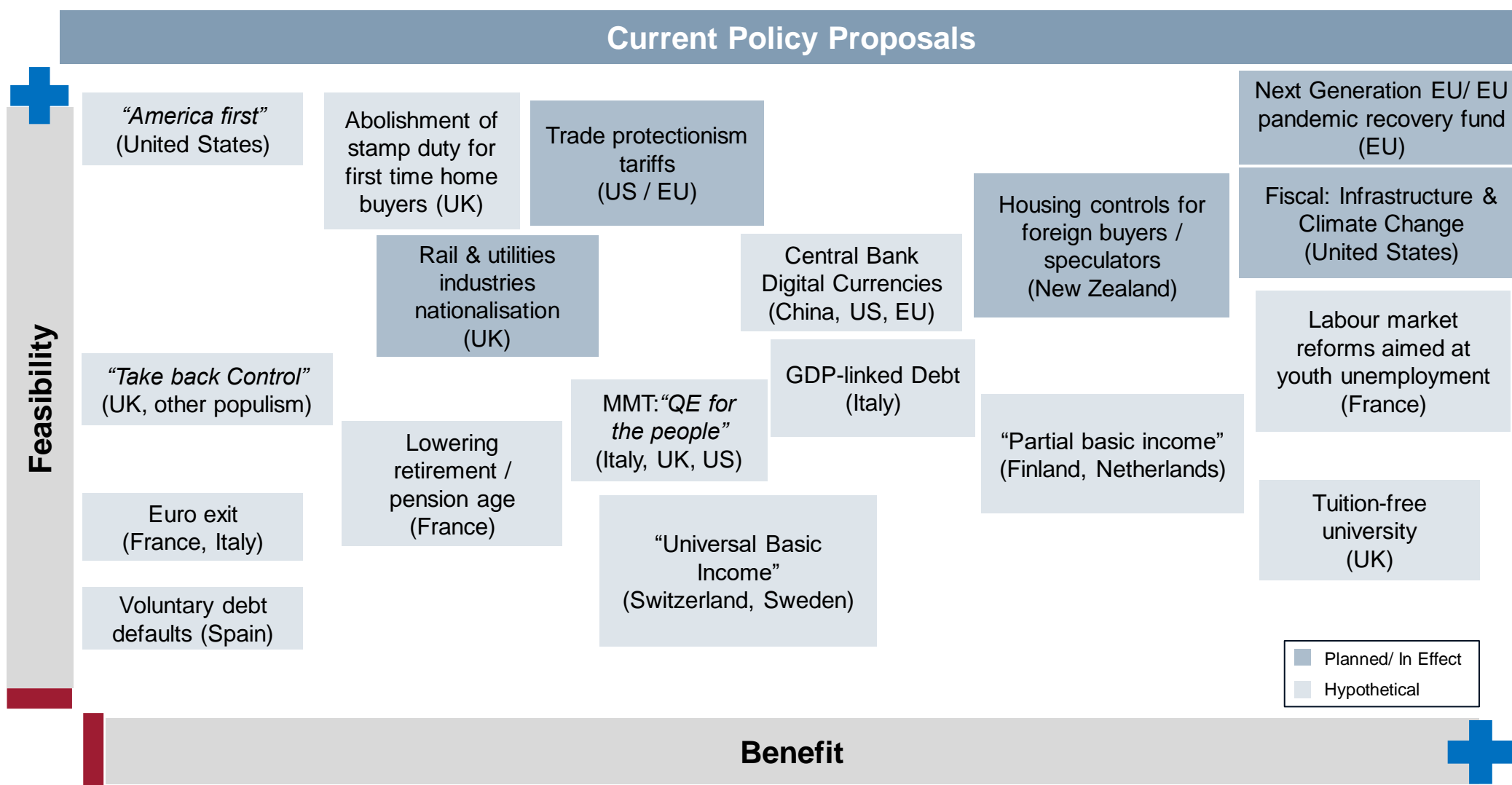
Source: Algebris Investments, BIS Working Papers 880, centralbanking.com; Central bankers' speeches; central banks' websites; Google Trends.

## 8. Conclusions: Long-term Incentives

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# Potential Solutions

## The Good, The Bad and The Ugly



Source: Algebris Investments .

- 
1. Neoliberal economic policy works well in a world with growing demographics and productivity – in developed markets (and increasingly in some EMs) – **we are no longer in that world**
  2. Fiscal policy needs to be sustainable and aimed at improving productivity. Lump-sum spending by governments overburdened by debt works in emergency situations, but isn't enough to raise output potential and inflation
  3. A monetary expansion strategy à la Friedman only works in financial systems able to outsource losses after a crisis, like in US bond markets. In **bank-centric economies** like Europe and Japan, monetary easing has failed to generate sustained inflation, as the **transmission channel of monetary policy remains impaired in a balance sheet recession**
  4. Many central banks (ECB, BoE, BoJ, RBA) have **missed the window** to normalise interest rates over the past few years of positive growth. This leaves them with limited ammunition in case of a future slowdown. The Fed/US have more powers to depreciate the Dollar, although this will gradually put its role as global reserve currency in question
  5. Escaping the QE infinity trap means boosting growth and productivity. It requires a reform of financial markets and banking systems, tax systems and new anti-trust regulation

# Conclusions

- 
6. This includes investing to improve productivity, while reducing the moral hazard of short-term sugar asset-focused policies like *“let them eat credit”*
  7. Fiscal stimulus is happening in the UK and in US – currently in the US it still aimed at emergency measures, however Biden’s upcoming infrastructure plan gives the US an unprecedented opportunity to reverse secular stagnation and raise inflation. European policymakers have deployed a recovery fund, which is a step in the right direction, but remains small
  8. Absent solutions to improve productivity and rebalance opportunity from monopolies of large firms to the broader economy, central banks may be unable to normalise policy and unable to support growth at the next crisis. We are likely to continue to see more non-standard expansionary policies, and in some cases outright **debt monetisation** (e.g. Modern Monetary Theory, QE for the people, etc.)
  9. This creates an environment of persistent negative real rates, i.e. an indirect tax also known as financial repression. Investors should approach this environment with a more nimble, **bar-belled portfolio construction approach**, maximising liquidity and optionality
  10. Fixing capitalism requires structural solutions. Opening up access to education, reforming tax systems, investing in infrastructure and training, breaking up monopolies which reduce productivity. Which way will governments go?
-

# Ulysses, the Sirens and Long-term Incentives

## Long-term Incentives, Skin in the Game vs Time Inconsistency



Source: Algebris Investments. "Ulysses and the Sirens", Painting by J. W. Waterhouse, oil on canvas, 1891.

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# Our Views and Insights

## The Silver Bullet

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- [The Silver Bullet | The New Bond Vigilantes](#), 02 December 2020
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- [The Silver Bullet | The Pandemic Revolution](#), 16 April 2020
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- [The Silver Bullet | The Art of the Trade Deal](#), 05 June 2019

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