

SCENARIOS,  
STRESS TESTS AND  
STRATEGIES FOR

SECOND QUARTER  
2016

SPECIAL EDITION

**The rise of populism:  
Impact on portfolio returns  
and allocations**



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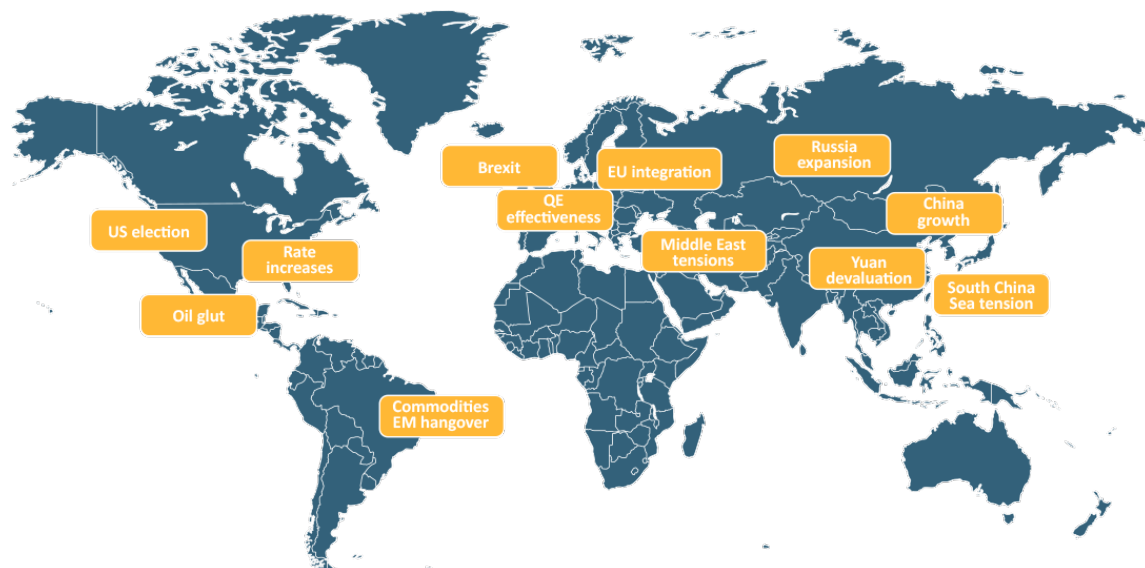


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MSCI believes that stress testing is most useful when carried out in the context of relevant forward-looking scenarios. This report discusses the possible impacts on portfolios of two scenarios.

- ⊙ A spillover from Brexit that leads to a breakup of the eurozone and impedes growth across the world
- ⊙ The possible consequences for portfolios of a rise in populism across advanced economies in Europe and the U.S.



# INTRODUCTION

- ⦿ The vote by the United Kingdom to leave the European Union highlights for investors the importance of factoring the consequences of popular discontent into their views of risk.
- ⦿ More broadly, the tide of populism that has emerged in Europe and the U.S. warrants attention because of the potential social and economic policies that may ensue, and their potential impact on the global economy, financial markets and portfolios.
- ⦿ In our view, analysis of forward-looking scenarios can help investors manage extreme events and, if appropriate, adjust their strategies accordingly. While some scenarios never materialize, others such as Brexit do.

## THIS REPORT

1

**Reviews major drivers of populism**

2

**Draws possible macroeconomic and market consequences of populist policies**

3

**Reviews the effects on portfolios of two scenarios:**

- An unfolding of Brexit that weakens economies across Europe and the west
- A rise in populism in the U.S. and Europe that leads to a surge in inflation and a falloff in growth

# INTRODUCTION (CONT'D.)

- ⦿ As with any scenario analysis, stress testing the impact of populism requires a consistent framework to address key modeling challenges, including identifying the drivers and evaluating the consequences of macroeconomic and market factors, as well as a system for transmitting shocks to portfolios across asset types. As there is uncertainty about the drivers and the evolution of macro and market risk, investors may benefit from assessing a range of scenarios.
- ⦿ This report evaluates two scenarios
  - The first scenario, [published in March](#), pictures Brexit fueling populist sentiment in Europe.
  - The second scenario envisions a growth in influence of populist policies, particularly in the areas of trade and government spending, on both sides of the Atlantic.
- ⦿ The report relies on research by MSCI and others, as well as analytical tools from MSCI, to assess possible impacts of both scenarios on multi-asset class portfolios.
- ⦿ Effects on portfolios could vary depending on the magnitude of the scenario and the composition of the portfolio.

These scenarios build on a framework for stress testing advanced by MSCI. Scenarios that MSCI has evaluated include:

[Brexit](#)

[The effects of low oil prices](#)

[A rate hike by the U.S. Federal Reserve](#)

[A hard landing in China](#)

## KEY TAKEAWAYS

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- ⊙ Populist sentiment has gained momentum in the U.S. and Europe, reflecting discontent with globalization and anger at established parties. Possible drivers of this tide include stagnant economic growth since the 2008 financial crisis and an increase in inequality. Low earners have experienced flat or falling wages and a persistent decline in income relative to the global average. In economies at the periphery of Europe, acute job insecurity has created conditions for angst and rebellion.
- ⊙ MSCI's review of economic policies that could emerge from populism points to two main areas of focus:
  1. Protectionism; and
  2. Government borrowing to support programs that extend benefits to the lower and middle classes.
- ⊙ History and academic research suggest that populist policies lead to stagflation, a portmanteau of low economic growth (driven by restrictions on trade) and inflation spurred by excessive public borrowing.

## KEY TAKEAWAYS (CONT'D.)

### WITH THE FOREGOING IN MIND, MSCI HAS EVALUATED POSSIBLE IMPACTS ON PORTFOLIOS OF TWO SCENARIOS

- ⊙ The first scenario assumes that Brexit fuels populism in Europe and affects growth in the U.K., Europe and developed market economies. The outcome has the potential to lower the value of a diversified, multi-asset class portfolio by 7.6%, with a falloff in equities of 13.4% and a 1.3% gain in global fixed income.
- ⊙ The second scenario envisions adoption of populist policies throughout the U.S. and Europe between now and 2018. Among the outcomes may be a reduction in global growth of 3% and a rise in inflation of 3% as such policies are adopted. The outcome has the potential to lower the value of a diversified, multi-asset class portfolio by 11.1%. Equities could lose 15.6%, while yields on a portfolio of fixed-income securities could fall by 4.6%.

#### Brexit with contagion



U.K. growth: -4.3%  
Global growth: -2.2%



Equities: -13.4%  
Fixed income: 1.3%



Diversified  
multi-asset class  
portfolio:  
-7.6%

#### Rise of populism in the U.S. & Europe



U.S., EU growth: -3%  
Inflation: 3%



Equities: -15.6%  
Fixed income: -4.6%



Diversified  
multi-asset class  
portfolio:  
-11.1%



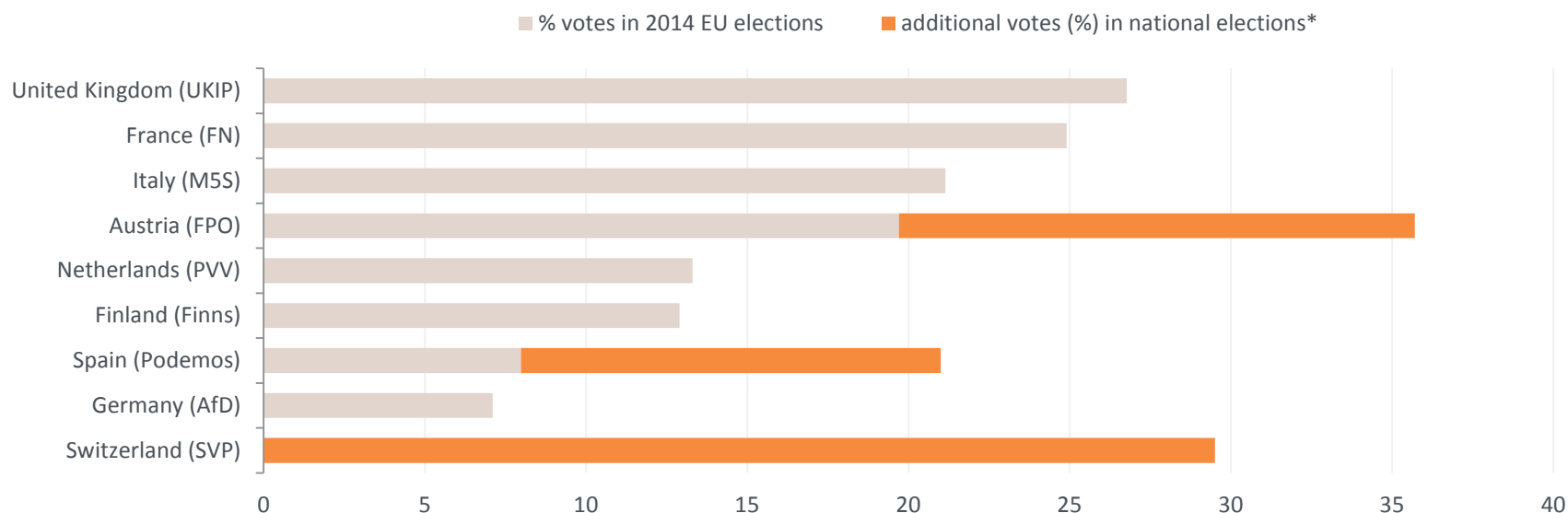
# DRIVERS OF POPULISM

Why is populism rising in western economies?



# POPULIST SENTIMENT GAINS MOMENTUM IN EUROPE...

## SHARE OF VOTES AMONG POPULIST PARTIES IN EUROPE (%)



**Populist sentiments – from both the political left and right – have gained momentum in Europe at the expense of established parties.**

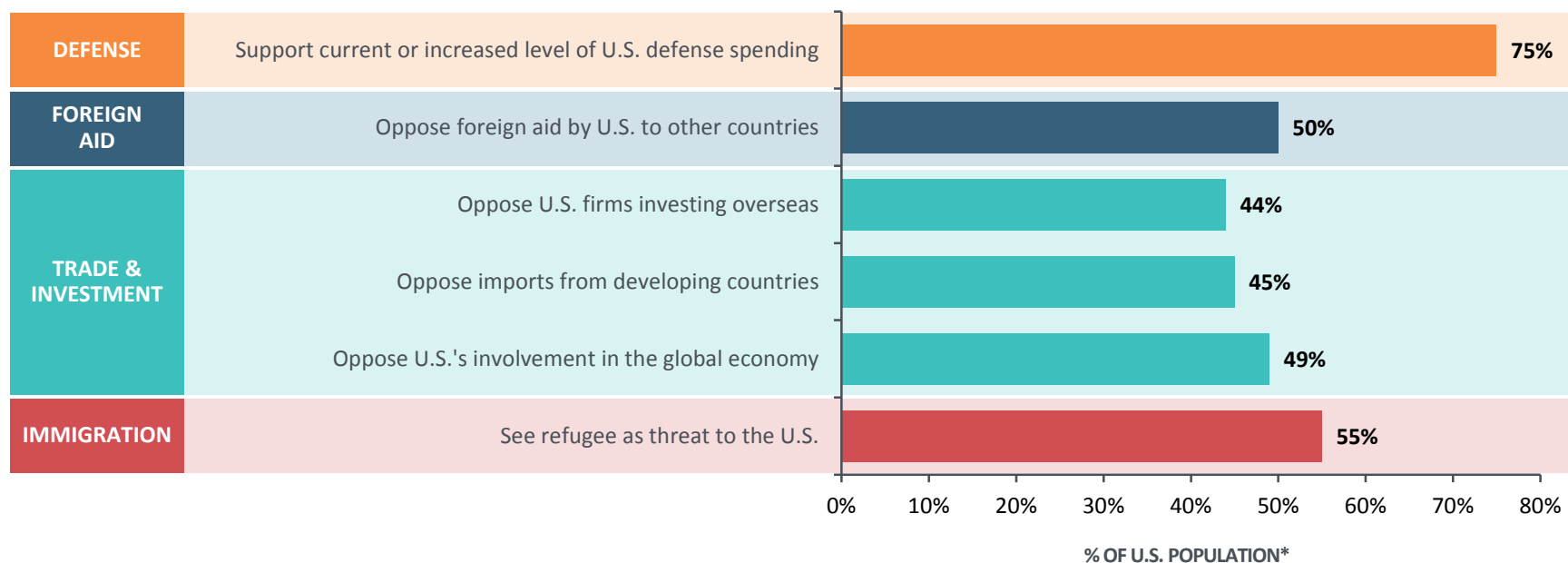
Source: [For 2014 EU elections data - European Parliament](#)

\* [Austria – FPO vote share in 1st round of 2016 presidential elections](#), [Spain – Podemos' vote share in 2016 general parliamentary election](#)

[Switzerland – SVP's vote share in 2015 Federal elections](#)

## ... AND IN THE U.S.

### POPULIST SENTIMENT IN THE U.S. (2016)



The U.S. presidential campaign has surfaced popular discontent with globalization and support for ‘outsiders’ who have campaigned against the political and financial establishment.

Source: <http://www.people-press.org/2016/05/05/public-uncertain-divided-over-americas-place-in-the-world/>

\* Based on a survey conducted by Pew Research Center on “America’s Place in the World” released on 5th May 2016

# WHAT IS POPULISM?

## POPULISM IS...

An ideology which pits a virtuous and homogeneous people against a set of elites and dangerous 'others' who are depicted as depriving (or attempting to deprive) the sovereign people of their rights, values, prosperity, identity and voice.

## POPULISM CAN TAKE SEVERAL FORMS



Source: Albertazzi, Daniele; McDonnell, Duncan (2008). "Twenty-First Century Populism," Palgrave MacMillan. p. 3.; Gidron and Bonikowski. [Varieties of Populism: Literature Review and Research Agenda](#)

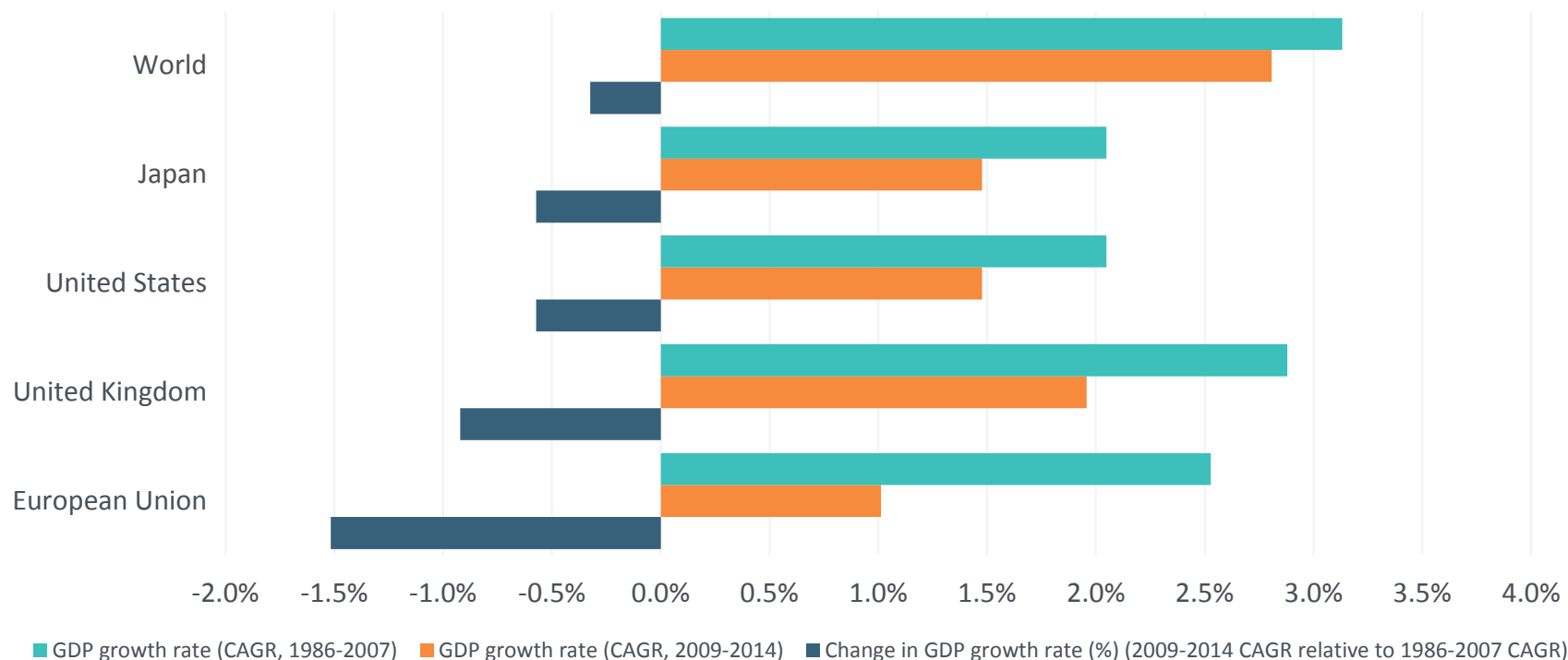
## MAJOR DRIVERS OF THE RECENT INCREASE IN POPULISM ACROSS EUROPE AND THE U.S. INCLUDE:

- 1 A long period of sluggish economic growth
- 2 An increase in income inequality, including a decline in middle-class incomes
- 3 A rise in immigration and increase in cultural and religious diversity

**Populist movements have appeal when the economic pie is not growing, it is being divided unevenly and there is a perception that outsiders are competing unfairly for what remains.**

## GROWTH HAS REMAINED STAGNANT SINCE 2008...

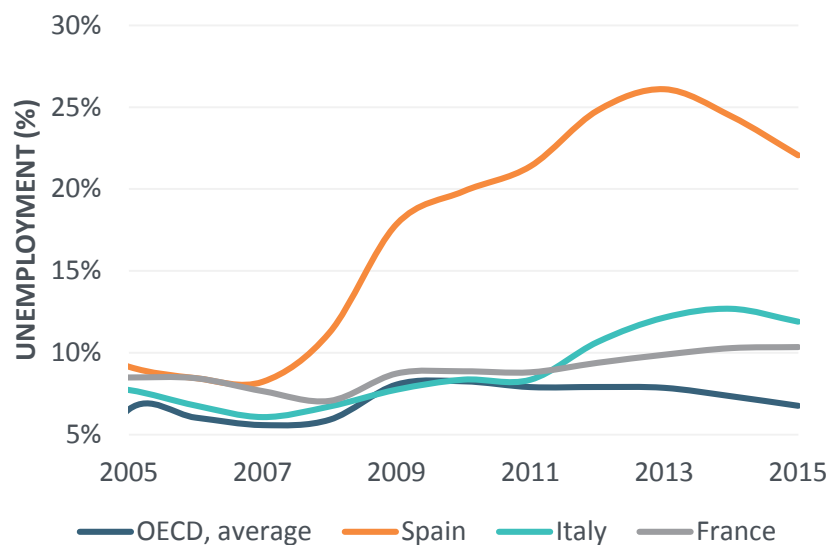
### GDP GROWTH RATE (%)



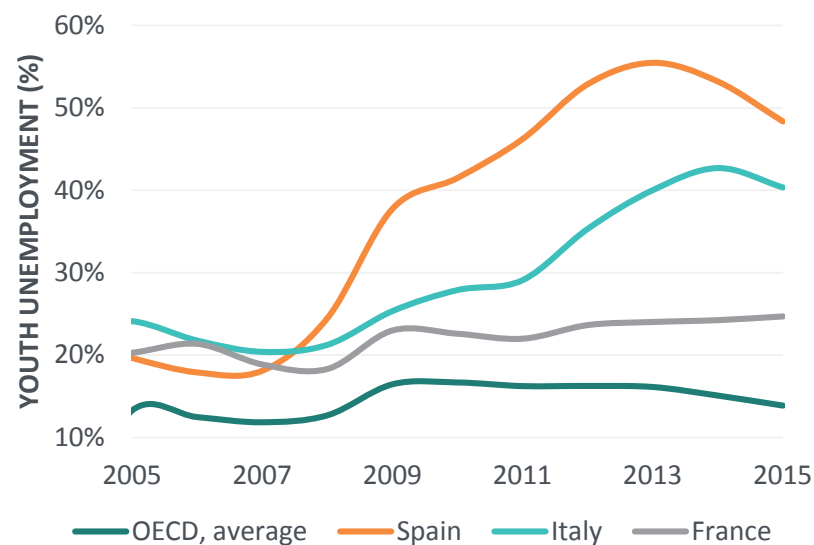
**The 2008 financial crisis had a major impact on the economies of the U.S., U.K. and EU. These regions have not recovered fully, with growth largely stagnant compared with the long-term average trend.**

## ...WITH JOB INSECURITY PLAGUING KEY EUROPEAN MARKETS

### UNEMPLOYMENT IN SPAIN, ITALY AND FRANCE EXCEEDS THE AVERAGE FOR ADVANCED ECONOMIES...



### ... PARTICULARLY AMONG YOUNG PEOPLE

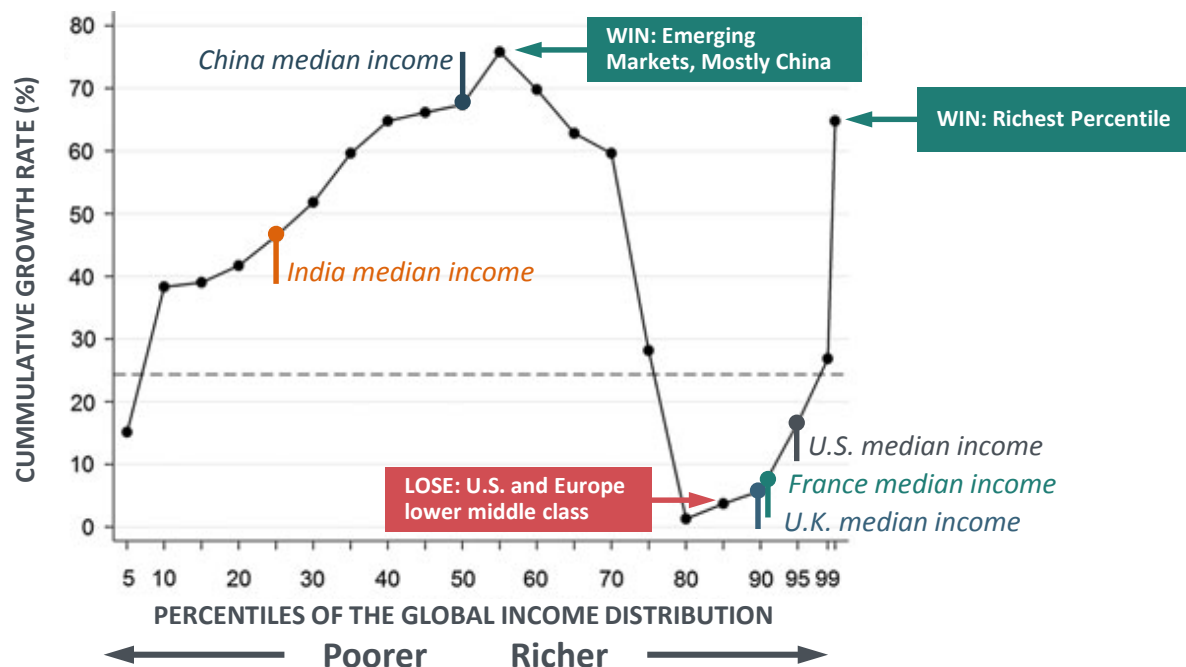


Unemployment rates in Spain, Italy and France have exceeded the OECD average. Slow economic growth and persistently high rates of unemployment have fueled discontent and rebellion against the political establishment.

In Spain and Italy, more than 40% of people between the ages of 15 and 24 are unemployed.

## BENEFITS FROM GLOBALIZATION ARE DISTRIBUTED UNEVENLY

CHANGE IN INCOME FROM 1988 TO 2008 [REAL % CHANGE IN 2005 PPP TERMS]



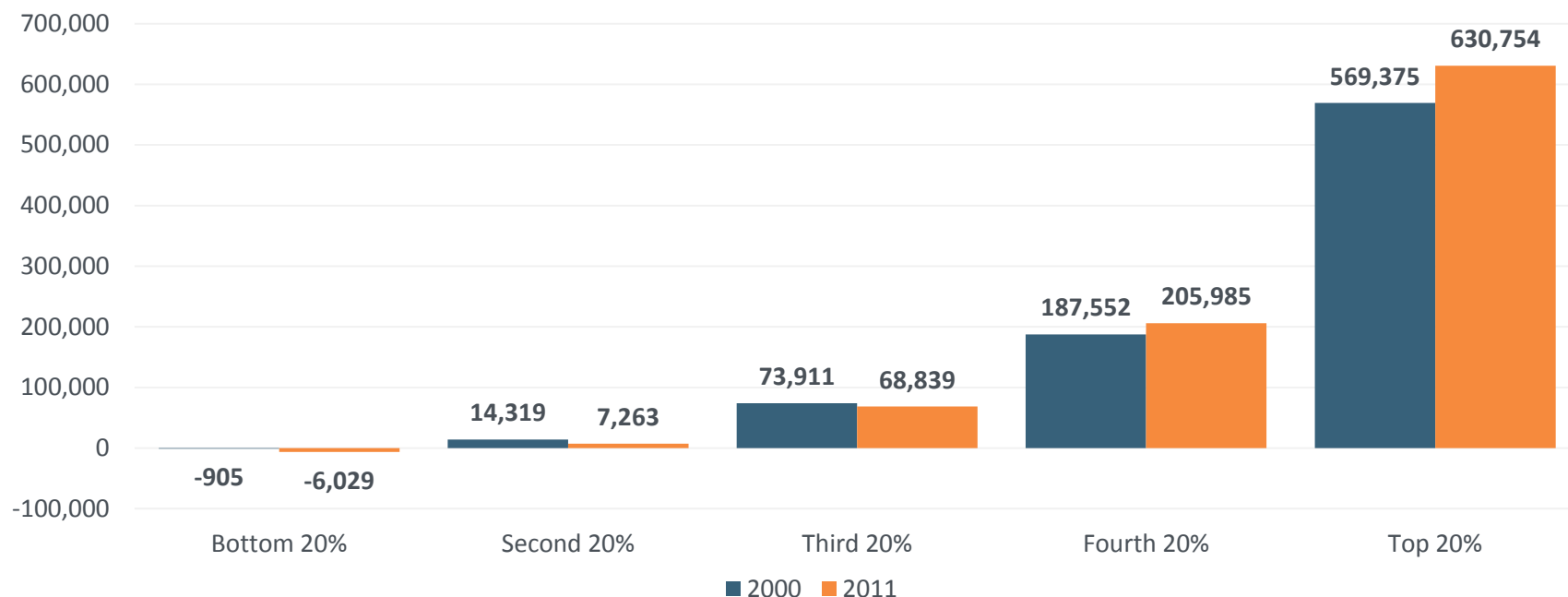
The benefits of globalization have accrued primarily to emerging markets and individuals in the top 1% of income distribution. Those in the bottom half of income distribution in U.S. and Europe have experienced below-average growth in income.

Source: Christoph Lakner and Branko Milanovic, "Global income distribution: from the fall of the Berlin Wall to the Great Recession", World Bank Economic Review, vol. 30, No. 2, pp. 203-232; MSCI ESG Research



# THE DISPARITY IN WEALTH IN THE U.S. IS INCREASING

## MEDIAN NET WORTH OF HOUSEHOLDS (IN 2011 USD)

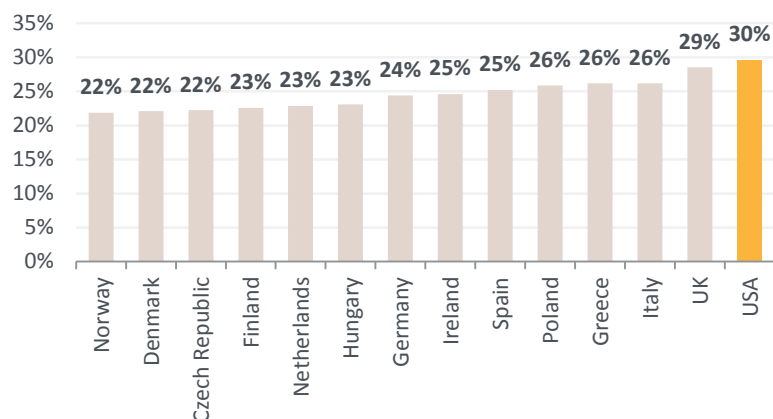


An increase in income inequality is accompanied by unevenness in the distribution of wealth. In the U.S., while wealth held by the top 40% has increased between 2000 and 2011, it has decreased for middle- and low-income populations. Indebtedness of the bottom 20% has increased by a multiple of five during this period.

Source: [Distribution of Household Wealth in the U.S.: 2000 to 2011, U.S. Census Bureau, August 2014](#)

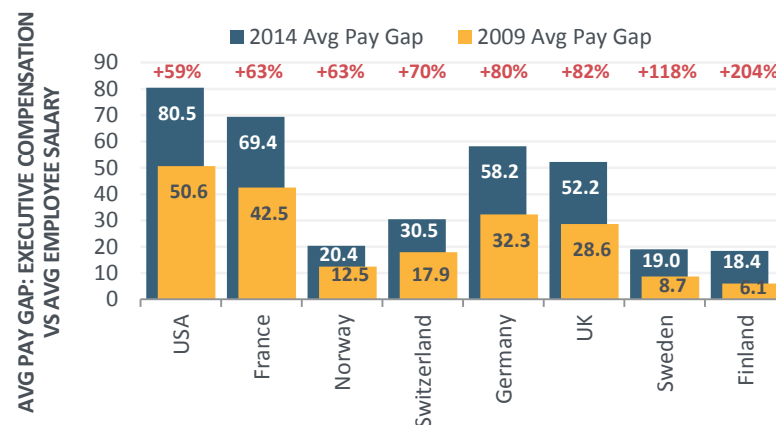
## INCOME INEQUALITY IN EUROPE IS LOWER THAN U.S., BUT PAY AT THE VERY TOP HAS INCREASED

### INCOME SHARE HELD BY HIGHEST 10% (2014)



Source: World Bank

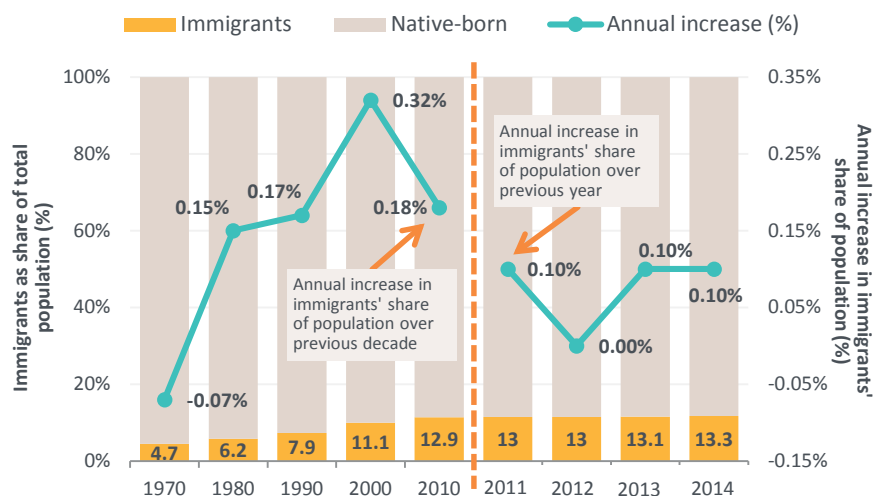
### A GROWING PAY GAP



Source: MSCI ESG Research, Worldscope; Based on 445 constituents of MSCI ACWI IMI that have disclosed both executive and labor compensation data each year from 2009 to 2014, for countries with more than 10 companies in the analytical set

Income inequality has tended to be lower in Europe compared with the U.S., with the top 10% holding less share of total income. However, compensation data disclosed by a sample of companies in the MSCI ACWI IMI Index indicates that while executive pay among Europe-domiciled companies grew an average of 22% annually between 2009 to 2014, salaries for the average worker have been relatively stagnant, growing at around 1% per year.

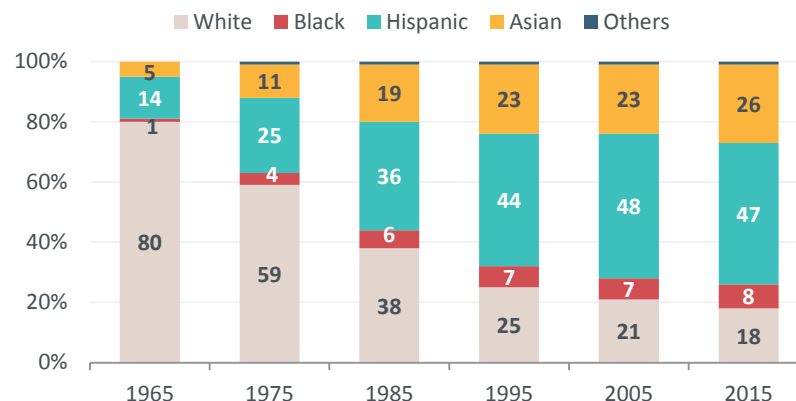
# IMMIGRANTS ARE CHANGING THE ETHNIC COMPOSITION OF THE U.S.



Source: [Migration Policy Institution](#), [U.S. Census Bureau](#), MSCI ESG Research

\* The term "immigrants" denotes naturalized citizens, lawful permanent immigrants, refugees and asylees, legal non-immigrants (including those on student, work, or other temporary visas), and persons residing in the U.S. without authorization.

## % OF NEW IMMIGRANT POPULATION ARRIVED IN U.S. IN A GIVEN YEAR

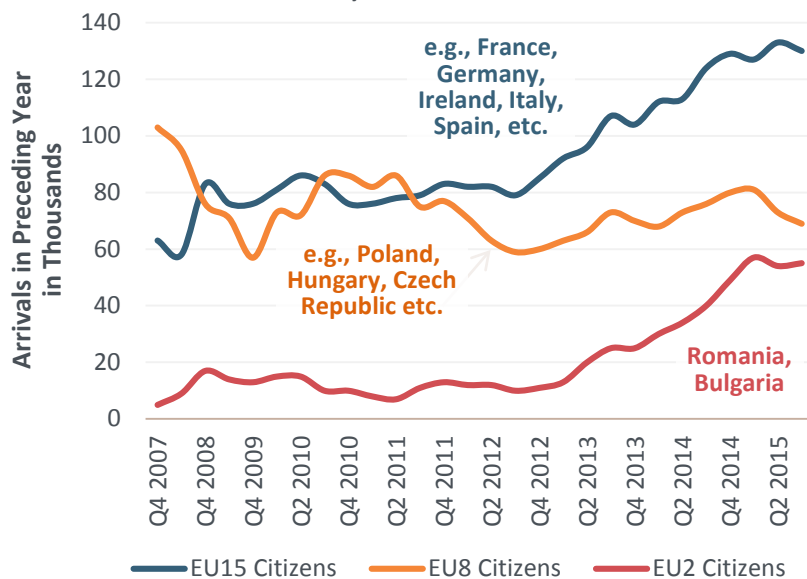


Source: [Pew Research Center](#)

While the rate of increase in immigrant share of the U.S. population has slowed since 2000, compared to 1970–2000, the large influx of Hispanic immigrants over several decades has changed the ethnic composition of the overall population. The U.S. Census Bureau projects that non-Hispanic whites will be a minority population by 2044, fueling concerns among traditional majority groups of losing political power and cultural identity.

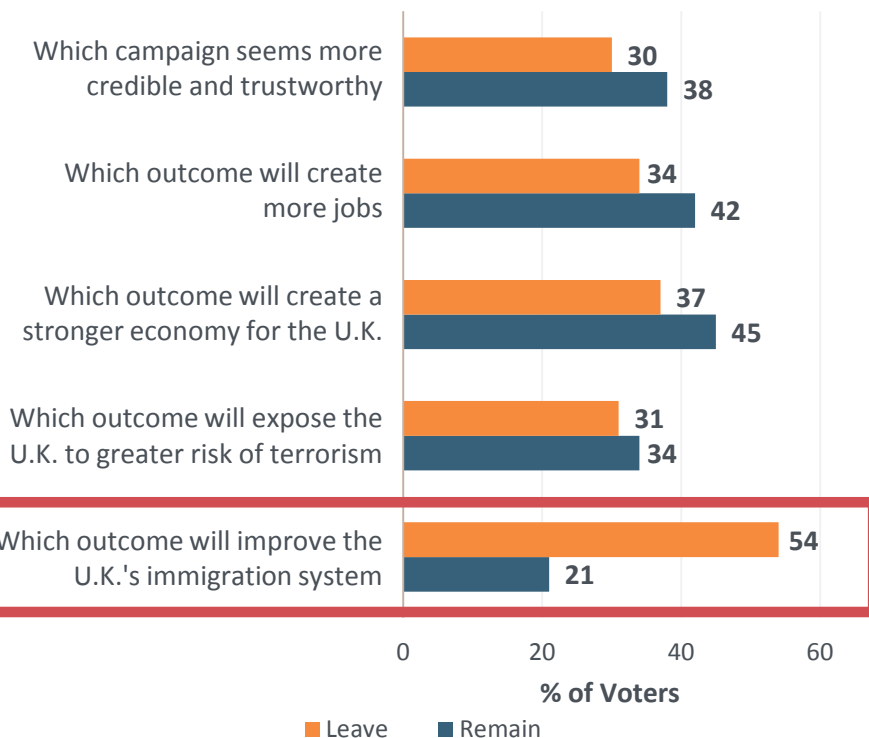
# MIGRATION RAISES SOCIAL TENSIONS

## IMMIGRATION TO U.K., 2007 TO 2015



- Migration has amplified social tensions in EU countries
- A stronger economic recovery in the U.K. has attracted migrants in search of employment from throughout Europe
- Immigrants are often perceived to require public services and support that come at the cost of serving the native-born population

## U.K. PUBLIC OPINION ON THE BREXIT REFERENDUM



Source: [International Passenger Survey \(IPS\) - Office for National Statistics](#)

Source: [Survey by ORB/Telegraph about voters' thinking on EU referendum \(June 6, 2016\)](#)

## KEY TAKEAWAYS

- ⦿ Populist sentiment has gained momentum in the U.S. and Europe
  - Political figures who espouse populist policies are gaining at the ballot box at the expense of established parties, reflecting widespread discontent and desire for major social and economic change
- ⦿ Drivers of the rise of populism in advanced economies include:

### STAGNANT ECONOMIC GROWTH

- ⦿ Slow growth since the financial crisis could be fueling rebellion against the political establishment in the U.S. and Europe

### INCREASE IN INCOME AND WEALTH INEQUALITY

- ⦿ Benefits of globalization have been distributed unevenly. At the losing end are people in Europe and the U.S. whose incomes rank them in the lower half of the income distribution. They have experienced a persistent falloff in wages relative to the average

### INCREASED MIGRATION AND CULTURAL DIVERSITY THREATEN TRADITIONAL MAJORITY

- ⦿ Immigrants are perceived to be competitors for scarce economic opportunities, an additional burden on stretched public finances, and a threat to traditional cultural values and identity

# MACROECONOMIC AND MARKET CONSEQUENCES OF POPULIST POLICIES

Some lessons from the past and a review of  
current proposals put forward across the  
political spectrum



# POPULISM HAS PROCEEDED IN PHASES HISTORICALLY...

## PHASE ONE FISCAL EXPANSION

- ⦿ Successful at restoring growth, employment, wages, restoring confidence in voters
- ⦿ Wealth redistribution financed by government borrowing, growing demand accommodated by increased imports and financed by current reserves
- ⦿ Price controls keep inflation in check

## PHASE TWO PRICE REALIGNMENTS AND PROTECTIONISM

- ⦿ As fiscal intervention reaches its limits, currency devaluations become the only option to sustain wage subsidies
- ⦿ Inflation picks up due to fiscal expansion, but wages keep up

## PHASE THREE HYPER-INFLATION AND CONTRACTION

- ⦿ Government out of control
- ⦿ Hyperinflation as budget deficit deteriorates and government spending becomes unsustainable
- ⦿ Unemployment increases
- ⦿ Wages fall, leading to recession
- ⦿ Capital flows out of country

## PHASE FOUR RECESSION, INSTABILITY, EXTERNAL INTERVENTION

- ⦿ External, radical intervention required to stabilize the country
- ⦿ Severe recession
- ⦿ Increased political instability
- ⦿ Increased inequality and poverty leaves country vulnerable to another wave of populism

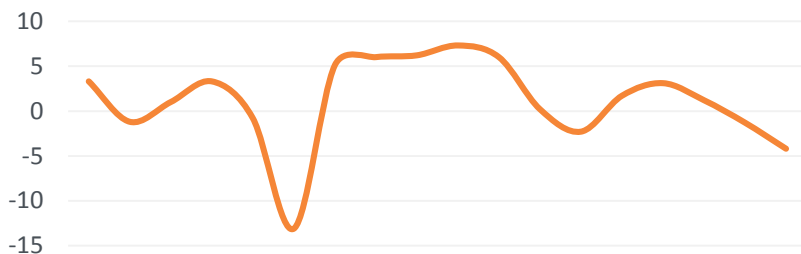
Source: "The Macroeconomics of Populism," Dornbusch and Edwards (1991)

## ... WITH HARSH CONSEQUENCES FOR ECONOMIC GROWTH AND INFLATION

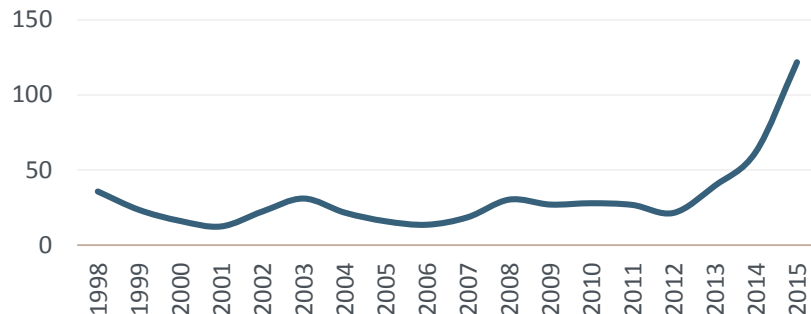
- Growth and inflation patterns during populist regimes in Venezuela and Argentina share similarities, mostly in line with the four phases. After growing in the early years and riding the global economic boom in the run-up to the 2008, both countries have struggled to recover from the financial crisis.
- Venezuela is still experiencing a severe recession possibly exacerbated by the decline in oil prices and a rate of inflation that exceeds 100% per year. Argentina has entered stagflation, with near zero growth and inflation of about 25% annually.

### VENEZUELA

ANNUAL REAL GDP GROWTH RATE (%)

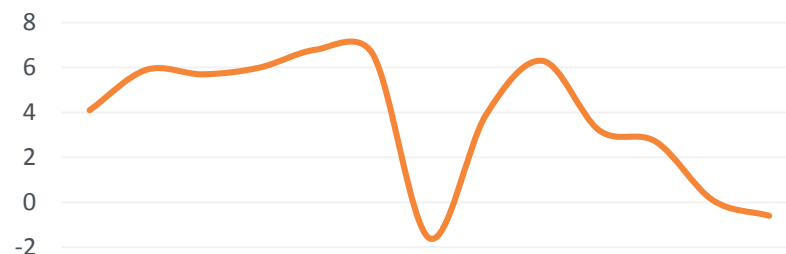


ANNUAL INFLATION (%)

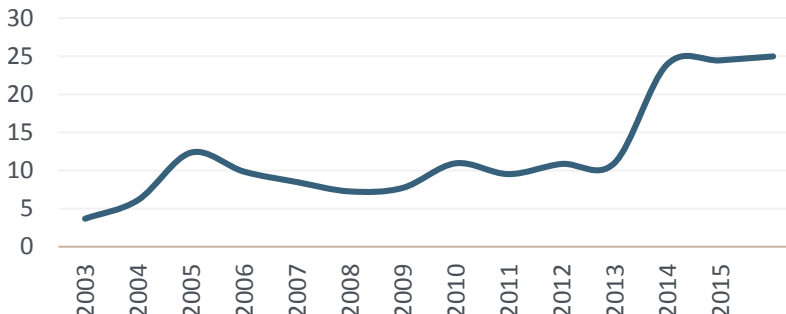


### ARGENTINA

ANNUAL REAL GDP GROWTH RATE (%)



ANNUAL INFLATION (%)



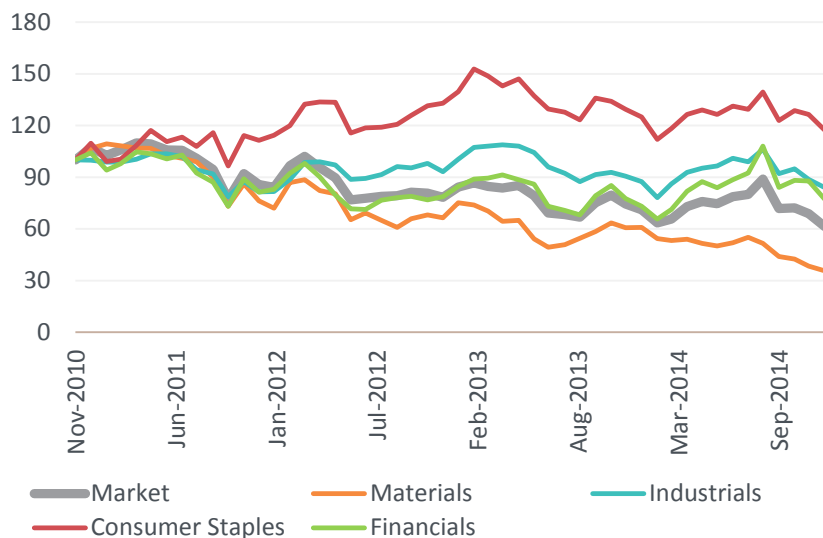
Source: Datastream



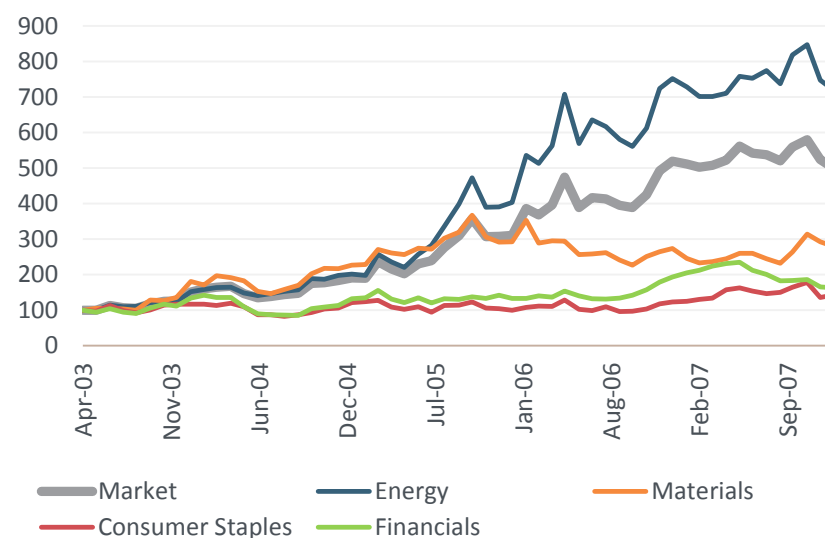
## POPULISM HAS HAD VARIED IMPLICATIONS FOR EQUITY SECTORS TRADITIONALLY

- Populist policies, which are associated with targeted increases in public spending, trade restrictions and government control, could impact some equity sectors more than others.
- The analysis of historical sector performance in Argentina (2003–2007) and Brazil (2010–2014) we conducted so far produced mixed results.
- Materials have suffered persistent losses relative to market in both Argentina and Brazil.
- Financials, a sector that could be hit as governments intensify control, have severely underperformed the market in Argentina, while nearly returning the same as market on average in Brazil.
- Industrials and consumer staples, two sectors that lend themselves to benefit from fiscal expansion policies, have outperformed over the period examined in Brazil but underperformed in Argentina.

**EQUITY MARKET PERFORMANCE: BRAZIL (2010–2014)**



**EQUITY MARKET PERFORMANCE: ARGENTINA (2003–2007)**

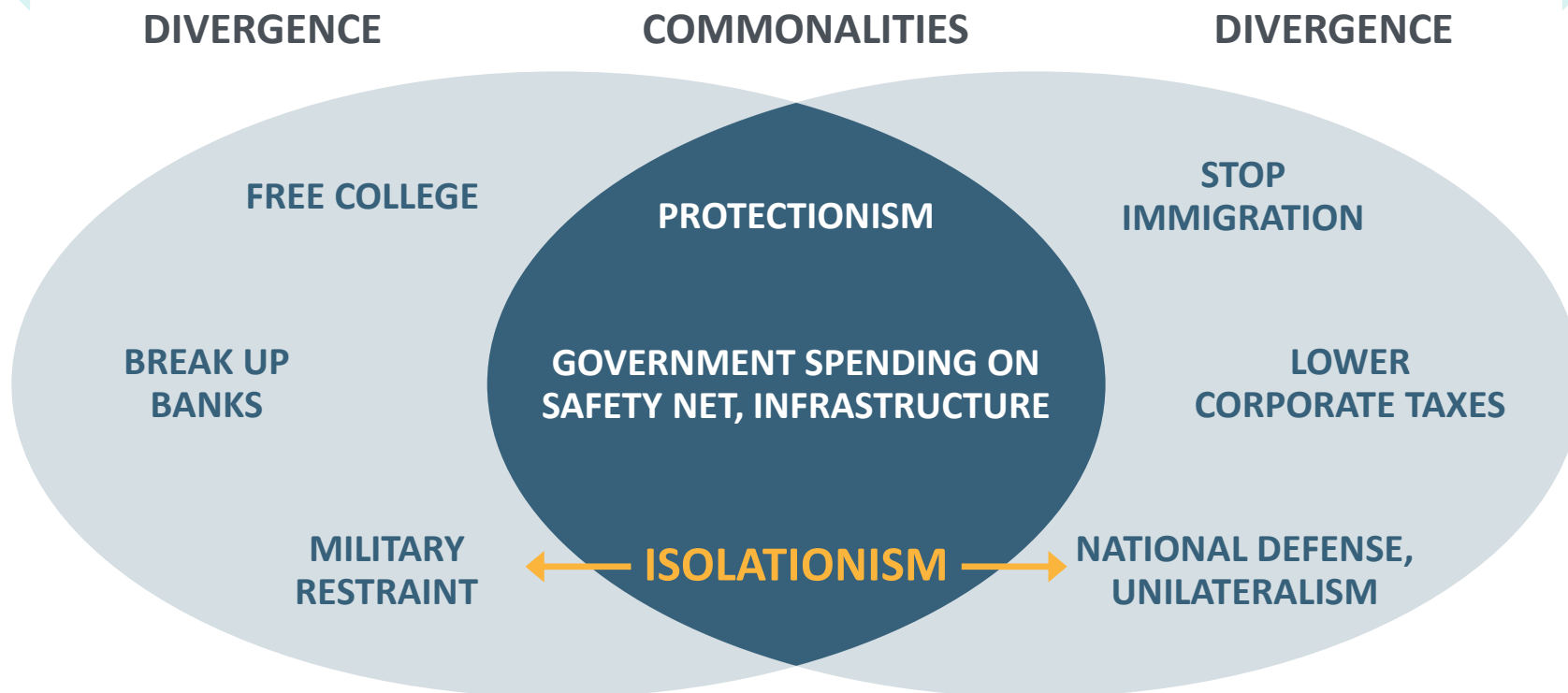


Source: MSCI Brazil and MSCI Argentina Sector Indexes

## REVIEW OF POLICY PROPOSALS IN THE U.S.

In the current U.S. presidential campaign, candidates at both ends of the political spectrum have emphasized policies characterized by protectionism, isolationism and deficit spending – key elements of populist movements.

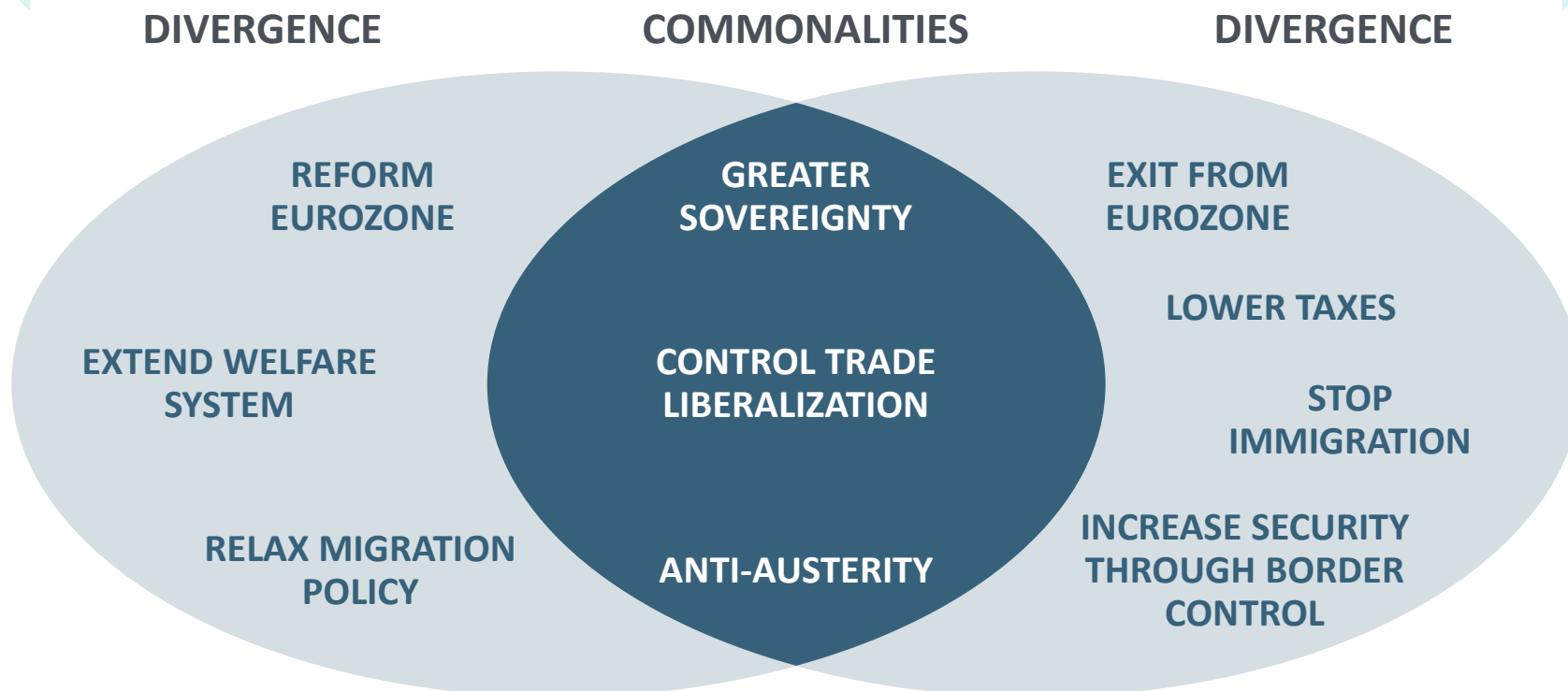
TWO ENDS OF POLITICAL SPECTRUM HIGHLIGHTING POLICIES WITH POPULIST APPEAL IN THE U.S.



## REVIEW OF POLICY PROPOSALS IN EUROPE

Despite divergent perspectives on migration, policies from both ends of the political spectrum emphasize greater control over regional or national issues, a rejection of fiscal austerity and a pullback from trade.

TWO ENDS OF POLITICAL SPECTRUM HIGHLIGHTING POLICIES WITH POPULIST APPEAL IN EUROPE



## TRADE TARIFFS AND BARRIERS COULD HURT ECONOMIC GROWTH

Liberalization and openness have fueled global trade and economic growth for the past two decades. Restrictions on trade and a move to isolationism could reverse the benefits of liberalization and lower growth.

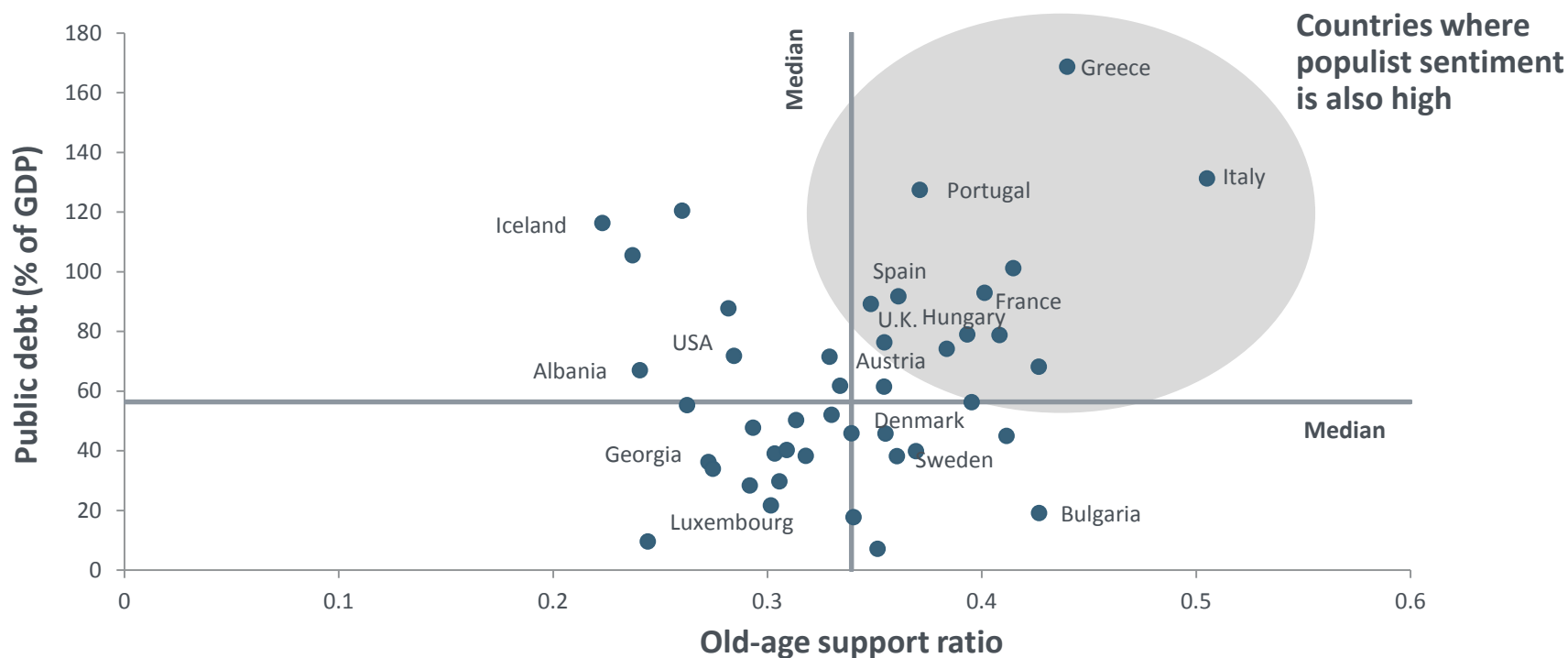
### CHANGE IN ANNUAL GROWTH (1994–2016)



Source: Datastream

## INCREASES IN PUBLIC SPENDING COULD SPUR INFLATION

An increase in government borrowing without a corresponding rise in revenue could spur inflation. Public debt is currently high in advanced economies, where population, particularly in countries that resist immigration, seems to be shrinking. That limits revenues in the future and raises concerns about countries' ability to finance their debt. At current low growth rates, inflation could surge.



This analysis is performed for countries in Europe and North America. Public debt: 3 year average (2012–14). Old age support ratio: the ratio of population (>65 years) in a country and its labor force

Source: MSCI ESG Research, World Development Indicators, World Bank

## KEY TAKEAWAYS

- ⦿ Candidates from both the right and left in the U.S. and Europe espouse protectionism, isolationism and government spending on social programs
- ⦿ Lessons from the past suggest that populism could have significant
  - Macroeconomic consequences
    - Stagflation: lower growth with higher inflation
  - Market consequences

# A RANGE OF SCENARIOS FOR POPULISM



## EVALUATING TWO SCENARIOS FOR POPULISM

### BREXIT WITH CONTAGION:

- ⊙ Brexit fuels populist sentiment on the Continent and disintegration of the eurozone

### RISE OF POPULISM IN THE U.S. AND EUROPE:

- ⊙ Populist policies are implemented concurrently throughout Europe and the U.S.

- ⊙ Forward-looking scenarios reflect views about the evolution of macroeconomic, political and market risks. Uncertainty about the evolution and timing of these risk events means that different views could result in markedly different outcomes for portfolios, and investors could benefit from evaluating a range of scenarios.

#### Scenario one: Brexit with contagion effects

- ⊙ We review the scenario that we evaluated in March, in which Brexit fuels a wave of populism on the Continent that leads to a breakup of the eurozone. This scenario remains a concern in light of reaction by investors and news of a referendum slated for October in Italy that will test the government's ability to pass reforms that could improve competitiveness. Rejection of the referendum could result in populist and nationalist parties winning control of the government.

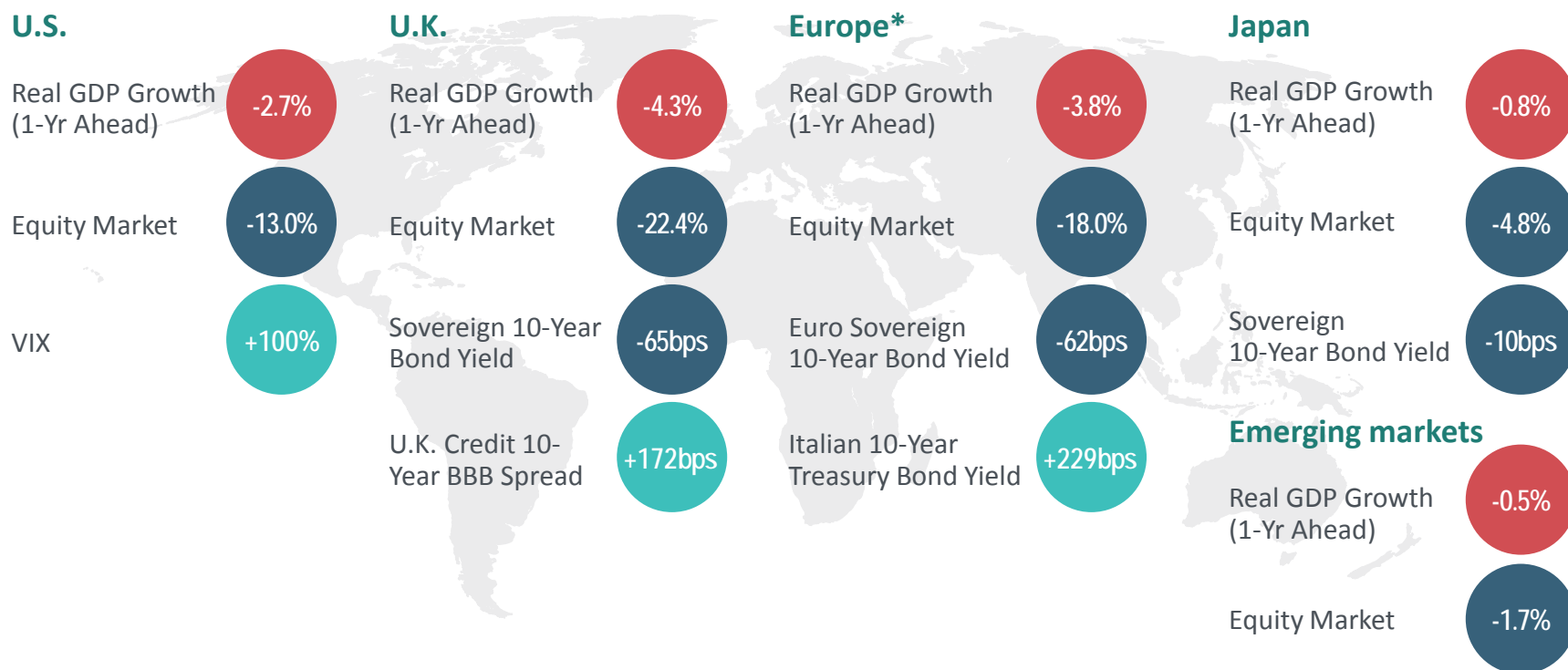
#### Scenario two: The rise of populism across Europe and the U.S.

- ⊙ The remainder of the report mainly focuses on our latest scenario, which assumes that populist policies are implemented concurrently throughout Europe and the U.S. We evaluate the impact of both scenarios and analyze the range of outcomes for portfolio values. While both scenarios are extreme, the implications could differ across asset types both in terms of the direction and magnitude of the changes in value.



# SCENARIO ONE: BREXIT TRIGGERS A POPULIST TIDE THAT BRINGS DOWN THE EUROZONE

- ⦿ The vote by the U.K. to leave the EU fuels populist sentiment on the Continent and the perception of disintegration of the eurozone.



\*This scenario was designed in March 2016. We continue to refine our assumptions as new political and macroeconomic risks emerge.

## SCENARIO TWO: A SCENARIO FOR POPULISM THAT LEADS TO STAGFLATION

- ⊙ Populist policies gain enough influence in the U.S. and Europe to reduce trade among countries, and increase government borrowing without a corresponding rise in revenue.
- ⊙ Protectionism pulls down economic growth in the U.S. and Europe.
- ⊙ Inflation surges as investors perceive the increase in government debt to be unsustainable. The eurozone unravels. The recession that ensues spreads to the rest of the world.

### U.S.

Real GDP Growth  
(1-Yr Ahead)

-3.0%

Industrials

-16.6%

Inflation  
(1-Yr Ahead)

+3.0%

Sovereign  
10-Year Bond  
Yield

+100bps

Equity Market

-17.7%

Credit 10-Year  
BBB Spread

+60bps

Financials

-19.8%

VIX

+20.0%

### Europe

Real GDP Growth  
(1-Yr Ahead)

-3.0%

Industrials

-18.4%

Inflation  
(1-Yr Ahead)

+3.0%

Sovereign  
10-Year Bond  
Yield

+30bps

Equity Market

-19.5%

Italian 10-Year  
Treasury  
Bond Yield

+146bps

Financials

-21.6%

### Emerging markets

Real GDP Growth  
(1-Yr Ahead)

-2.3%

Inflation  
(1-Yr Ahead)

+1.0%

Equity Market

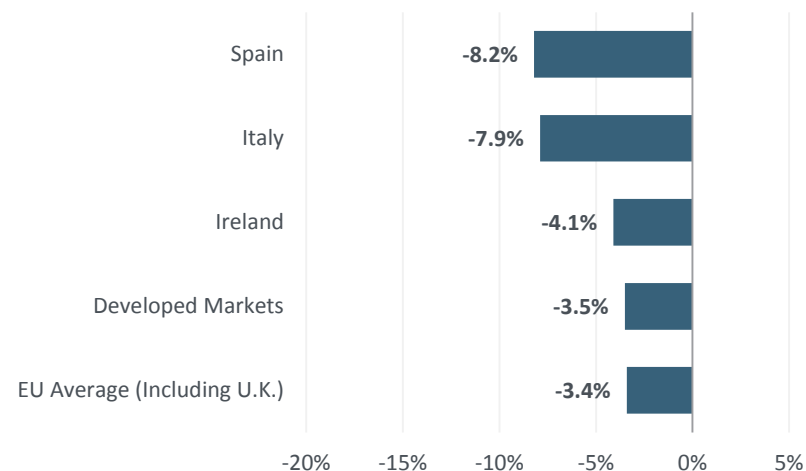
-9.5%

## POPULIST POLICIES COULD HAVE AN ACUTE IMPACT ON PERIPHERAL EUROPEAN BOND MARKETS...

- ⦿ In both scenarios, economies at the periphery of the EU could be impacted more severely, as investors fear governments will be unable to refinance their debt, which could push these economies out of both the EU and the eurozone. But the magnitudes differ by both scenario and asset type.
- ⦿ Losses on sovereign bonds are more pronounced in a Brexit with contagion, which impacts the U.K. and EU disproportionately, both in absolute terms and relative to developed markets.

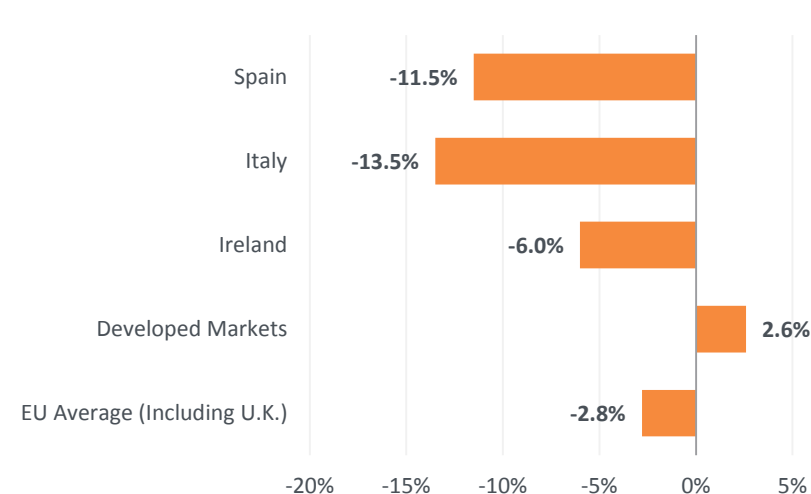
### RISE OF POPULISM IN U.S. AND EUROPE

#### CHANGE IN PORTFOLIO VALUE (%)



### BREXIT WITH CONTAGION

#### CHANGE IN PORTFOLIO VALUE (%)



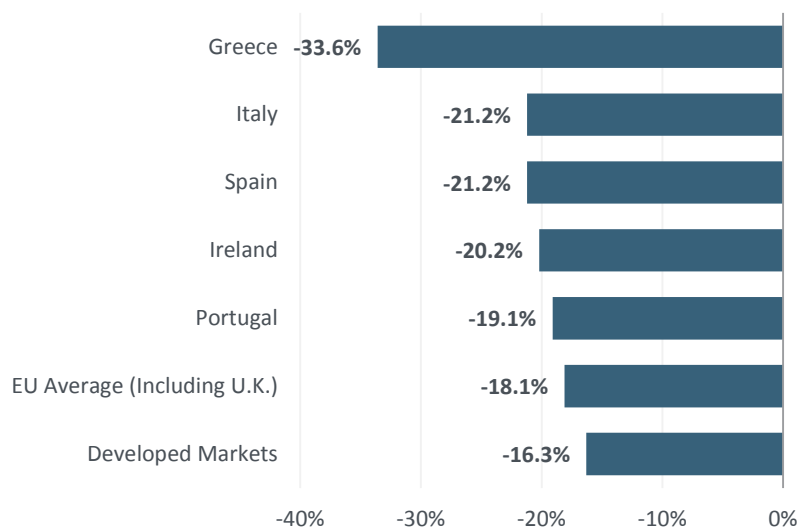
Source: MSCI Research, Bank of America Merrill Lynch indexed data used with permission, JP Morgan indexed data used with permission

## ... AND PERIPHERAL EUROPEAN EQUITY MARKETS...

- Losses on equities of peripheral European countries are greater in the populism scenario, which assumes a more severe decline in economic growth across the globe. However, on a relative basis, compared with developed markets overall, the two scenarios result in similar declines.

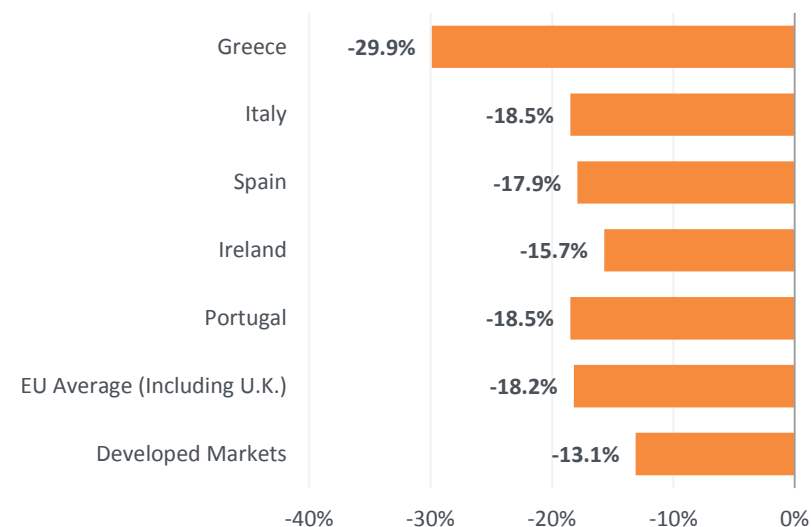
### RISE OF POPULISM IN U.S. AND EUROPE

CHANGE IN PORTFOLIO VALUE (%)



### BREXIT WITH CONTAGION

CHANGE IN PORTFOLIO VALUE (%)



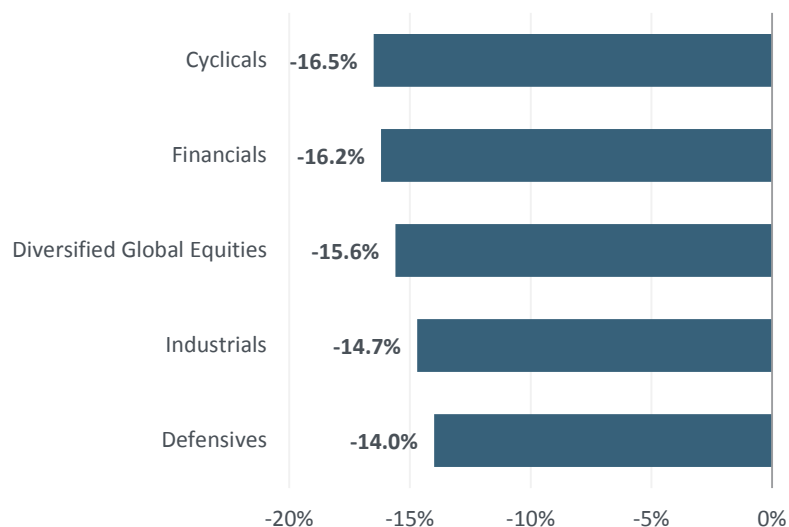
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## ... WITH MIXED IMPLICATIONS FOR SECTORS...

- Global equity sectors suffer greater losses overall amid a rise in populism as economic growth declines more worldwide. However, with the exception of industrials, losses are similar in both scenarios. Cyclical sectors that tie to growth could underperform relative to market, while defensive sectors could outperform. Industrials benefit from a rise in populism as governments favor defense and infrastructure.

### RISE OF POPULISM IN U.S. AND EUROPE

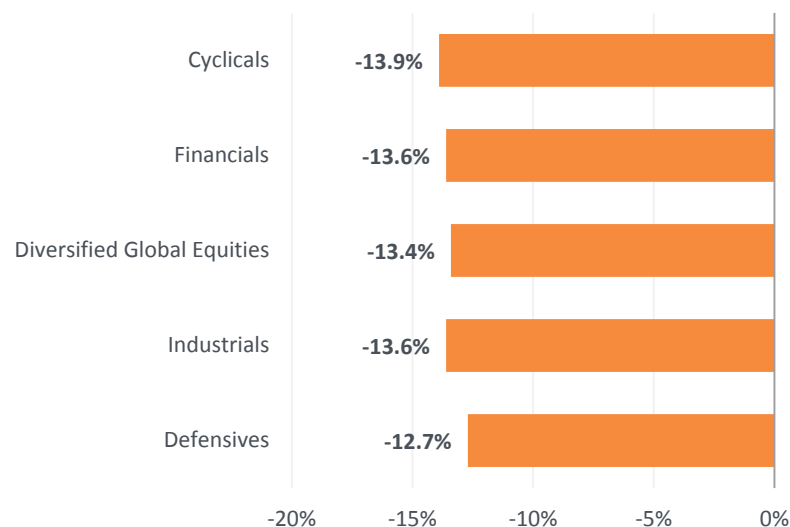
CHANGE IN PORTFOLIO VALUE (%)



Source: MSCI Research

### BREXIT WITH CONTAGION

CHANGE IN PORTFOLIO VALUE (%)



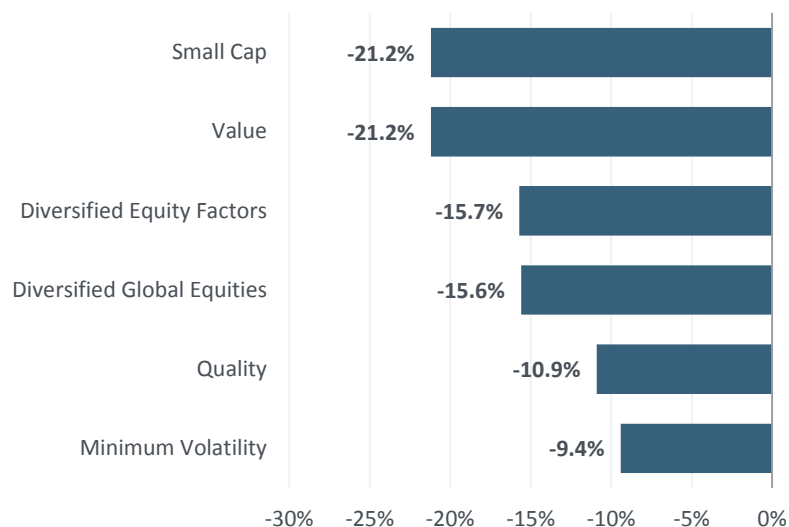
Source: MSCI Research

## ... AND STYLES

- Global equity styles could experience greater losses overall amid a rise in populism, which assumes a more adverse impact on global growth. On a relative basis, however, declines are similar in magnitude in both scenarios. Growth-sensitive factors such as small cap and value could underperform, while defensive factors such as quality and minimum volatility could outperform.

### RISE OF POPULISM IN U.S. AND EUROPE

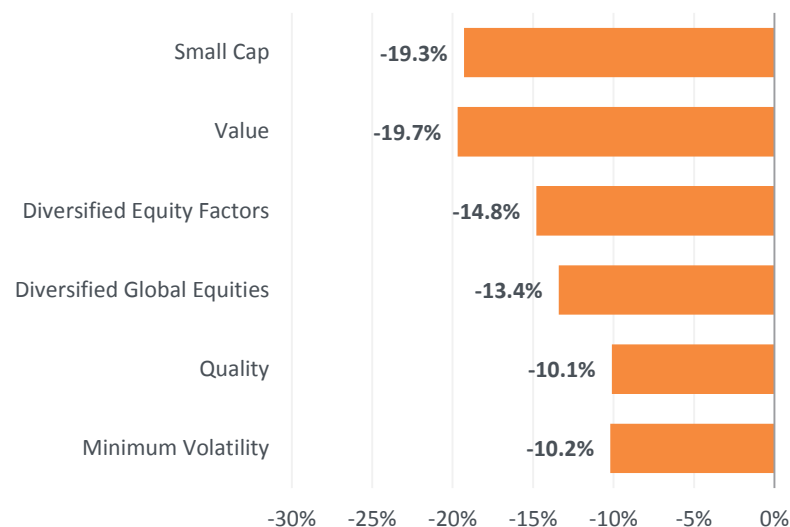
CHANGE IN PORTFOLIO VALUE (%)



Source: MSCI Research

### BREXIT WITH CONTAGION

CHANGE IN PORTFOLIO VALUE (%)

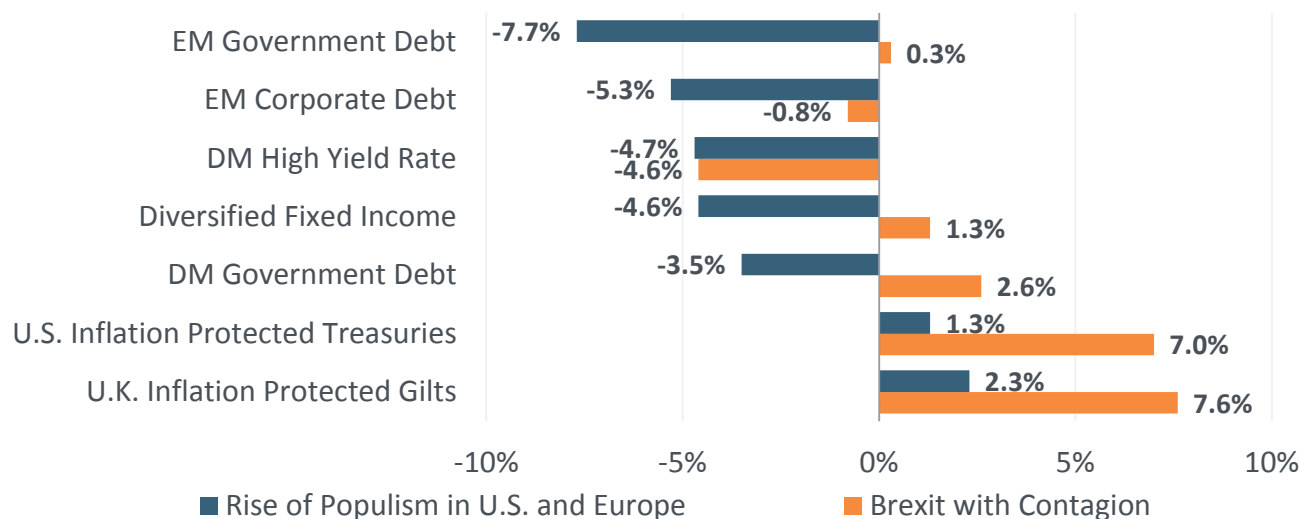


Source: MSCI Research

## OUTCOMES FOR FIXED INCOME PORTFOLIOS VARY WIDELY BY SCENARIO

- ⊙ In a Brexit with contagion, government bonds gain 2.6% in developed economies and 0.3% in emerging markets as investors seek protection from adverse growth prospects in the form of bonds. By contrast, a rise in populism could produce losses of 3.5% on developed market government bonds and 7.7% in emerging markets, and nominal bonds are sensitive to inflation that erodes their value in a stagflation environment. Inflation-protected securities may offer a hedge against stagflation.

### CHANGE IN PORTFOLIO VALUE (%)



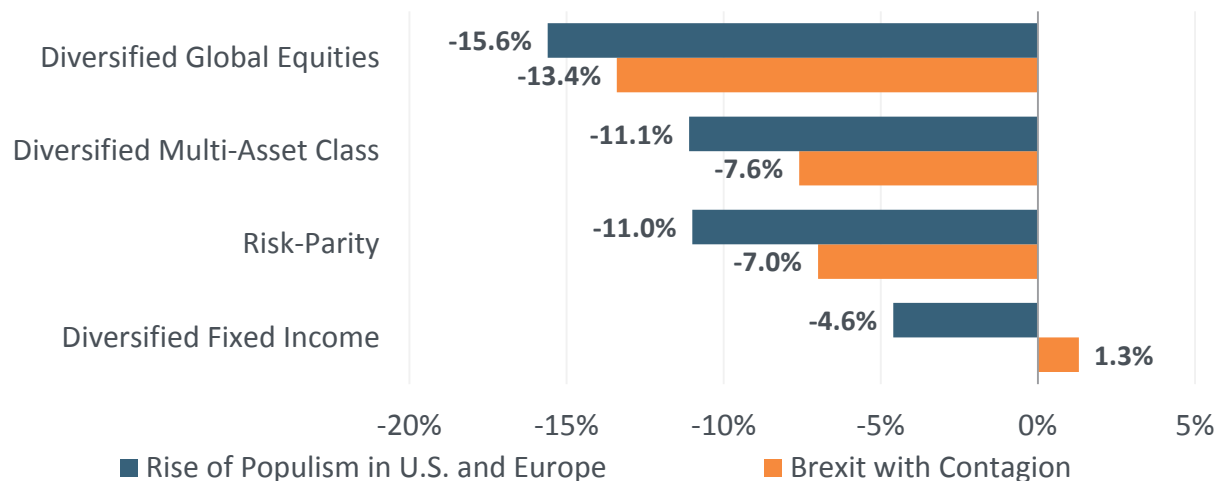
The diversified fixed income portfolio allocates 50% to DM government debt, 25% to global high yield debt, 12.5% to EM government debt, and 12.5% to EM corporate debt

Source: MSCI Research, Bank of America Merrill Lynch indexed data used with permission, JP Morgan indexed data used with permission

## OUTCOMES FOR MULTI-ASSET CLASS ALLOCATION STRATEGIES COULD VARY BY SCENARIO AND TYPE

- ⦿ In a Brexit with contagion, a diversified, global portfolio that allocates to equities and fixed income could lose as much as 7.6% of its value. A risk-parity portfolio could help limit losses, as its enhanced tilt to sovereign bonds helps hedge adverse shocks to growth.
- ⦿ By contrast, with losses spread across equity and fixed-income securities amid a rise in populism, both equities and fixed-income portfolios could fall about 11%. Risk-parity offers little hedge against rises in inflation.

CHANGE IN PORTFOLIO VALUE (%)



The Diversified Multi-Asset Class portfolio allocates 60% to diversified global equities and 40% to diversified fixed income. The risk-parity portfolio allocates 35% to diversified global equities and 65% to diversified global fixed income, with a leverage ratio of 1.3 to match the historical volatility of global equities. Source: MSCI Research, MSCI ACWI Index, Bank of America Merrill Lynch indexed data used with permission, JP Morgan indexed data used with permission.



## KEY TAKEAWAYS

- Investors could benefit from evaluating a range of scenarios, as there is considerable uncertainty about how economic, political and market risks may unfold over time.
- MSCI has evaluated a new scenario that envisions a rise of populism across Europe and the U.S. in which policies favor protectionism and fiscal expansion that lead to stagflation.

### LOSE

- Equity, sovereign and credit debt markets overall, with countries at the periphery of Europe enduring the greatest losses
- Growth-sensitive equity strategies, including value and small-cap, as well as financials and cyclicals sectors overall
- Even broadly diversified portfolios could lose 8% to 11%

### GAIN

- Industrials (relative to market), as government spending could favor defense and infrastructure
- Defensive equity sectors and factors (relative to market), including minimum volatility and quality
- Fixed-income portfolios with lower duration sovereign debt and credit, relative to market
- Inflation-protected government securities

# ASSUMPTIONS AND SETUP



# FROM SCENARIO TO PORTFOLIOS: MSCI'S FRAMEWORK FOR QUANTITATIVE STRESS TESTING

## I. DEFINE FORWARD-LOOKING SCENARIO

- ⦿ We define a forward-looking scenario based on a consistent narrative.  
We define a number of macroeconomic shocks.

**Populist policies such as trade protectionism and increased government borrowing lead to stagflation, resulting in a 3% drop in GDP growth and a 3% increase in inflation.**

# FROM SCENARIO TO PORTFOLIOS: MSCI'S FRAMEWORK FOR QUANTITATIVE STRESS TESTING

## II. SHOCK MACRO AND MARKET VARIABLES

- From the set of macroeconomic shocks we derive the market impact through the macroeconomic model. Additional market shocks, specific to the scenario, may be added.

### EQUITY PREDICTIVE STRESS TEST (FINANCIALS)

*Relative shocks in percentage*

MSCI World Financials	-18.4%
MSCI EM Financials	-11.6%

### EQUITY PREDICTIVE STRESS TEST (INDUSTRIALS)

*Relative shocks in percentage*

MSCI World Industrials	-15.2%
MSCI EM Industrials	-8.4%

### EQUITY PREDICTIVE STRESS TEST (OTHER)

*Relative shocks in percentage*

MSCI World	-16.3%
MSCI EM	-9.5%

### VOLATILITY PREDICTIVE STRESS TEST

*Relative shocks in percentage*

VIX	20%
-----	-----

### INTEREST RATES PREDICTIVE STRESS TEST

*Absolute shocks in basis points*

US 10Y Govt Rate	100bps
EUR 10Y Govt Rate	30bps
Japanese 10Y Govt Rate	0bps
Italian 10Y Govt Rate	146bps
USD, EUR, JPY Govt < 3M	No change

### BREAK-EVEN INFLATION PREDICTIVE STRESS TEST

*Absolute shocks in basis points*

U.S. 1Y break-even inflation	300bps
U.K. 1Y break-even inflation	300bps

### CREDIT SPREAD MODEL PARAMETER STRESS TEST

*Relative shock in percentage*

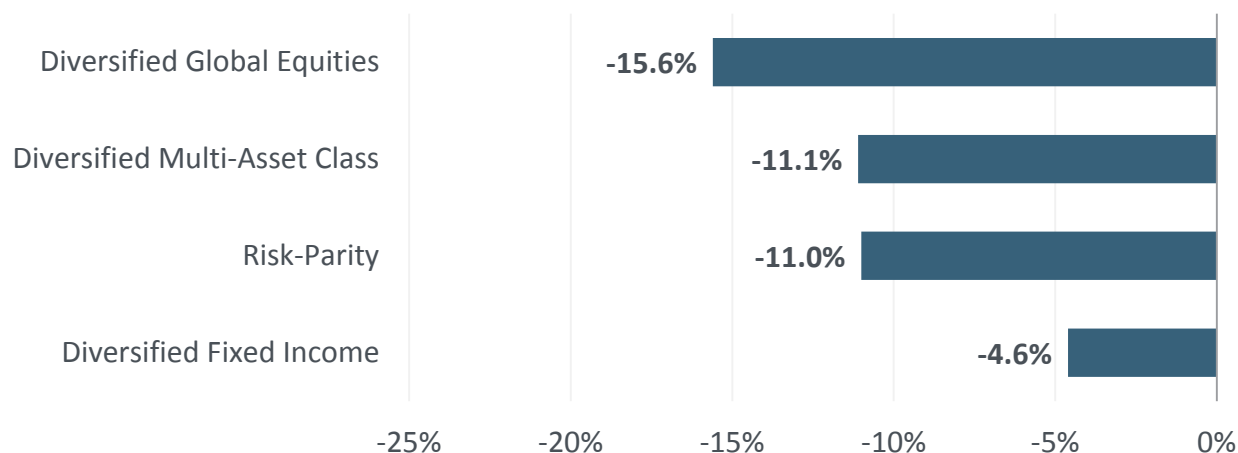
Uniform shock to all credit spreads	15%
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# FROM SCENARIO TO PORTFOLIOS: MSCI'S FRAMEWORK FOR QUANTITATIVE STRESS TESTING

## III. MEASURE IMPACT ON A DIVERSIFIED PORTFOLIO

- ⦿ The market shocks from the previous step are propagated to the entire portfolio. We assess the impact on different asset classes.

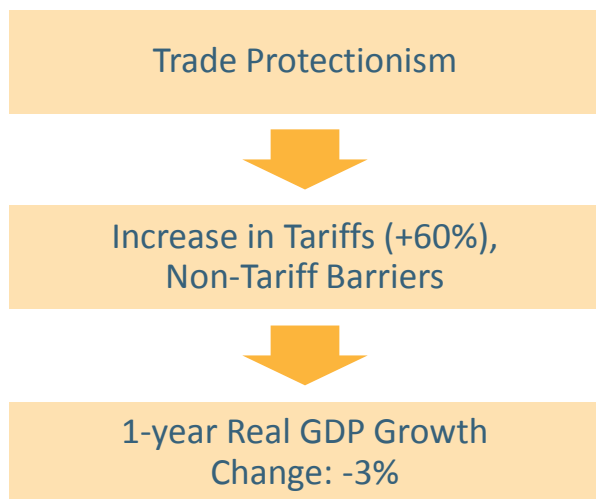
CHANGE IN PORTFOLIO VALUE (%)



## MACROECONOMIC SHOCKS

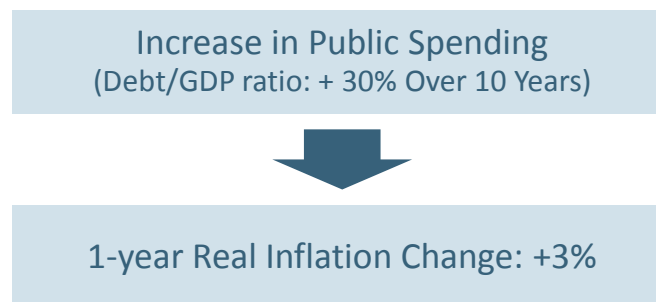
- Both scenarios assume a series of shocks that emanate from changes in the macroeconomic situation. Because the effects on growth and inflation of protectionism and government borrowing are difficult to measure, we have calibrated the effects by drawing from a series of academic studies.

### TRADE PROTECTIONISM LOWERS ECONOMIC GROWTH



Estimates based on Wacziarg and Welch (2008) "Trade Liberalization and Growth: New Evidence" World Bank Economic Review, Vol. 22, no.2, pp.187-231

### MORE PUBLIC SPENDING WITHOUT INCREASE IN REVENUE LEADS TO A SURGE IN INFLATION

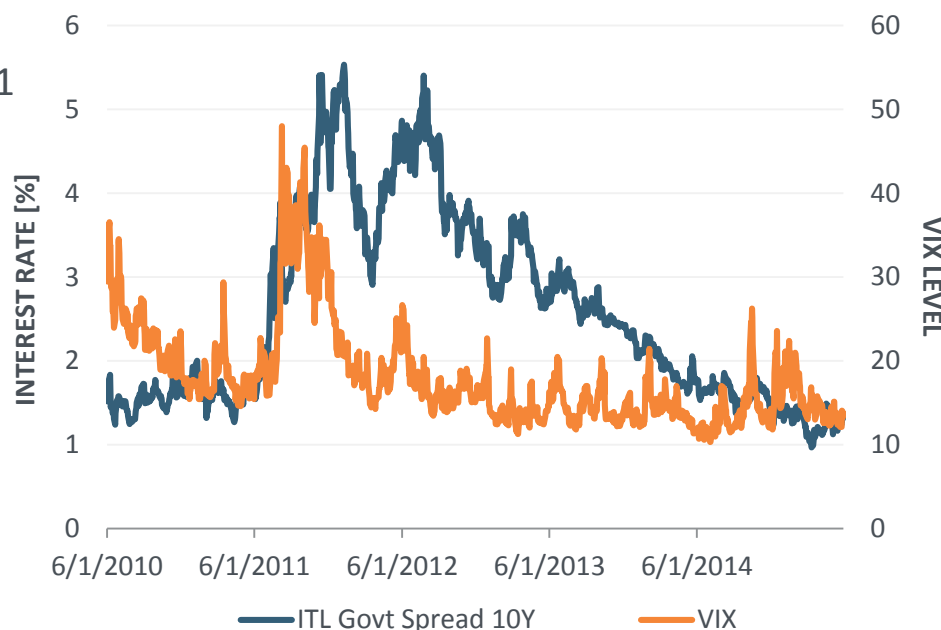


For the link between debt and inflation, see: John Cochrane (2011) "The Fiscal Theory of the Price Level and its Implications for Current Policy in the United States and Europe" Fiscal Policy and Fiscal Imbalance Conference, Becker Friedman Institute and Federal Reserve Bank of Chicago.

For calibration of changes to the debt/GDP ratio, see: Checherita and Roher (2010) "The Impact of High and Growing Debt on Economic Growth: An Empirical Investigation for the Euro Area" ECB Working Paper No 1237

## AN INCREASE IN INTEREST RATES AT THE PERIPHERY OF EUROPE AND AN INCREASE IN VOLATILITY

- ⦿ Fiscal expansion and protectionism in Europe could lead investors to fear a rise in refinancing risk for countries at the periphery of Europe
- ⦿ To model this risk, MSCI calibrated the change in yields to 10-year Treasuries in Italy and the experience of the VIX during the worst two-weeks of the Euro and Greek debt crisis in 2011
- ⦿ Worst two-week return in 2011–2012: ending on November 9, 2011
  - Italian 10 Year Bond spread over Euro 10 Year Bond Yield: +146 bps
  - VIX: +20%



## SPECIFIC EQUITY SECTOR SHOCKS

- ⊙ Some sectors within the equity market may gain relative to market during a populist regime while others may lose. The scenario assumes, based on the experience of Argentina, that financials could suffer as populist governments attempt to control banks. We further assume, based on the experience of Brazil, that industrials could gain as companies profit from public spending on infrastructure.
- ⊙ Specific shocks are as follows:
  - Financials
    - The scenario assumes a 2.2% negative decline relative to market, globally
  - Industrials
    - The scenario assumes a 1.1% positive change relative to market, globally



## SETUP OF STRESS TEST

- Having defined the relevant macroeconomic and market shocks, we apply these to portfolios using analytical tools from MSCI. In setting up the stress test, we follow a segmented stress test approach which limits propagation across risk types. We also apply different stresses to equities depending on the sector.

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