Escaping the QE Infinity Trap

The Economics of Financial Crises and How to Build a More Resilient Financial System

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Bocconi University
December 2016
The Debt Supercycle:
Excess Credit and Financial Crises
The Debt Supercycle
Government Subsidies and Deregulation Encouraged Credit Growth

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

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The Debt Supercycle
Interest Rates: We Are at All-time Low

Source: Homer and Sylla (1991), Heim and Mirowski (1997), Weiller and Mirowski (1987), Hills, Thomas and Dimsdale (2015 forthcoming), Bank of England, Historical Statistics of the United States Millennial Edition, Volume 3 and Federal Reserve Economic Database. Notes: the intervals on the x-axis change through time up to 1715. From 1715 onwards the intervals are every twenty years. Prior to the C18th the rates reflect the country with the lowest rate reported for each type of credit: 3000BC to 6th century BC - Babylonian empire; 6th century BC to 2nd century BC - Greece; 2nd century BC to 5th century AD - Roman Empire; 6th century BC to 10th century AD - Byzantium (legal limit); 12th century AD to 13th century AD - Netherlands; 13th century AD to 16th century AD - Italian states. From the C18th the interest rates are of an annual frequency and reflect those of the most dominant money market: 1694 to 1918 this is assumed to be the UK; from 1919-2015 this is assumed to be the US. Rates used are as follows: Short rates: 1694-1717 - Bank of England Discount rate; 1717-1823 rate on 6 month East India bonds; 1824-1919 rate on 3 month prime or first class bills; 1919-1996 rate on 4-6 month prime US commercial paper; 1997-2014 rate on 3-month AA US commercial paper to nonfinancials. Long rates: 1702-1919 - rate on long-term government UK annuities and consols; 1919-1953, yield on long-term US government bond yields; 1954-2014 yield on 10 year US treasuries.
Money Creation in the 21st Century
Banks Issue Loans to Firms, Firms Make Deposits, and Banks Make More Money

Before loans are made

Commercial banks

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
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<tbody>
<tr>
<td>Reserves</td>
<td>Deposits</td>
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<tr>
<td>Currency</td>
<td>Currency</td>
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After loans are made

<table>
<thead>
<tr>
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</tr>
</thead>
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</tr>
<tr>
<td>Currency</td>
<td>Currency</td>
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New deposits

Broad money

Before loans are made

Consumers

<table>
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<tr>
<th>Assets</th>
<th>Liabilities</th>
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<tbody>
<tr>
<td>Deposits</td>
<td>Non-Money</td>
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<td>Currency</td>
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After loans are made

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<td>Currency</td>
<td>Currency</td>
</tr>
</tbody>
</table>

Source: Algebris Investments (UK), BoE
Public and Private Debt Overhangs Are Still Standing

Total non-financial debt by segment of the economy, % GDP

Source: Algebris Investments (UK) LLP, BIS
Policy Responses:
Band-aid Solutions and Addictive Anaesthetic
# Policy Responses, Limitations and Collateral Effects

## Central Bank Policy Rates: Racing to the Bottom

### Annual average policy rate, %

<table>
<thead>
<tr>
<th>Year</th>
<th>Australia</th>
<th>Canada</th>
<th>Denmark</th>
<th>Eurozone</th>
<th>New Zealand</th>
<th>Japan</th>
<th>Sweden</th>
<th>Switzerland</th>
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<th>US</th>
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<td>1.7</td>
<td>2.6</td>
<td>2.8</td>
<td>5.5</td>
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</table>

**Source:** S. Krogstrup (2016), Central bank websites, Bloomberg, Algebris Investments (UK) LLP. *Annual average policy rate, yellow = below or equal to 2%, pink = below or equal to 1%, red = below or equal to 0%.*
Policy Responses, Limitations and Collateral Effects

QE Is Distorting Bond Markets

ECB QE and € bond markets (€trn)

Fed QE and $ bond markets ($trn)

Source: National Bureau of Statistics, International Monetary Fund (IMF), Bloomberg

Source: European Central Bank

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Policy Responses, Limitations and Collateral Effects
Global Central Bank Balance Sheets Keep Growing

Central banks are growing faster than the economies
Central bank balance sheet size, % nominal GDP

Stock markets rise in tandem with central bank QE
Stock indices normalised vs central bank balance sheet size
Key milestones at the Fed

1995: All changes in monetary policy would be announced immediately

1999: Statement released after every meeting, specifying the fed funds “target”

2002: Dissenting votes published immediately

2003: Forward guidance on policy (“policy accommodation maintained for a considerable period”)

2008: Time-contingent forward guidance (“for an extended period” changed to “at least through mid-2013”)

2012: Data-contingent forward guidance (“appropriate at least as long as the unemployment rate remains above 6 ½ percent...”)

2015: Market-contingent forward guidance? (“an abrupt tightening would risk disrupting financial markets and perhaps even inadvertently push the economy into recession”)
**Policy Responses, Limitations and Collateral Effects**

The Credit Transmission Channel of QE Is Impaired

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**Inflation expectations continue to fall, despite rising M3**

**Bank deleveraging has stabilised, but lending is weak**

Monthly decline in total loans to Eurozone non-financial corporations
Jan 2009 – Oct 2016 (€bn)

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Source: Algebris Investments (UK) LLP, European Central Bank

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Policy Responses, Limitations and Collateral Effects
Investment Is Still 12% Below the Peak in the Eurozone

Gross fixed capital formation, Q1 2000 = 100

- Euro area
- Germany
- Ireland
- Greece
- Spain
- France
- Italy
- Portugal

Source: Algebris Investments (UK) LLP, Eurostat
## Impact of QE on Growth, Labour Markets and Wealth Distribution

### Policy Responses, Limitations and Collateral Effects

#### Change between 2007 and now*

<table>
<thead>
<tr>
<th></th>
<th>Real GDP</th>
<th>Bank assets</th>
<th>Unemployment</th>
<th>Youth unemployment</th>
<th>Gini coefficient**</th>
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<tbody>
<tr>
<td>US</td>
<td>+10%</td>
<td>+44%</td>
<td>4.6%</td>
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<td></td>
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<td>5.0%</td>
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<td>+0.4pp</td>
<td>+1.1pp</td>
<td>+0.012</td>
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<td>UK</td>
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<td>14.2%</td>
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<td>-0.3pp</td>
<td>+0.4pp</td>
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<td>Italy</td>
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<td>Spain</td>
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<td>-6%</td>
<td>8.2%</td>
<td>18.1%</td>
<td>0.306</td>
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<td>24.1%</td>
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<td>+24.6pp</td>
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<td>Iceland</td>
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<td>1.0%</td>
<td>7.2%</td>
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<td>+2.2pp</td>
<td>+1.6pp</td>
<td>-0.026</td>
</tr>
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Source: IMF, OECD, Central Bank of Iceland, Bank of England, ECB, Federal Reserve, Algebris Investments (UK) LLP. Note: * Now = end 2015 for Real GDP and youth unemployment, and Q1 2016 for the rest; ** 1 = complete inequality, 0 = complete equality.
Policy Responses, Limitations and Collateral Effects
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

Source: Algebris Investments (UK) LLP, World Wealth and Income Debate
Source: Algebris Investments (UK) LLP, FRED
Policy Responses, Limitations and Collateral Effects
Wealth Concentration

Median value of owned financial assets by age group, €000

Policy Responses, Limitations and Collateral Effects
Inequality and Income Polarisation Boost Populism

More waiters and CEOs, but not enough in between
US jobs created in 2009-2015, mn vs median wage, $000

Support for radical and populist politics is on the rise
Opinion polls for Eurosceptic parties/populists

Source: Algebris Investments (UK) LLP, BLS


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Policy Responses, Limitations and Collateral Effects
Unstable Political Environment

Source: Algebris Investments (UK) LLP. * Yellow = already took place

- UK referendum on EU membership
- Russia legislative election
- Puerto Rico elections
- Italian constitutional referendum
- Ecuador elections
- German federal elections
- Brexit: Article 50 to be triggered
- Norwegian elections
- Scottish elections
- Spanish elections
- Croatian elections
- Czech elections
- US elections
- Romanian elections
- Austrian presidential election
- Hong Kong Chief Executive election
- Norwegian elections
- Luxembourg elections
- US elections
- Puerto Rico elections
- Spanish elections
- Croatian elections
- Czech elections
- US elections
- Romanian elections
- Austrian presidential election
- Hong Kong Chief Executive election
- Norwegian elections
- Luxembourg elections

May 16
Aug 16
Nov 16
Feb 17
Jun 17
Sep 17

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“If every time a central bank starts moving towards normalcy, it says, ‘no, no, exchange rate appreciating, turmoil etc., we got to go back,’ we’re in it for a long time […] Then this is not QE2, 3, 4, it’s QE infinity, we keep doing it.”

Raghuram Rajan, Former Governor of the Reserve Bank of India, April 2016
Financial cycles and crises are becoming longer and deeper

Note: Orange and green bars indicate peaks and troughs of the combined cycle using the turning-point (TP) method. The frequency based cycle (blue line) is the average of the medium-term cycle in credit, the credit to GDP ratio and house prices (frequency based filters). The short terms GDP cycle (red line) is the cycle identified by the short-term frequency filter.

Source: M. Drehmann, C. Borio and K. Tsatsaronis (2012), Characterising the financial cycle: don’t lose sight of the medium term!, BIS Working Papers No. 380
“Sometimes the criticism directed at our policies implicitly attributes responsibility for the low interest-rate environment to central bank policies. But the truth is precisely the opposite: central banks are simply reacting to and trying to correct a situation that they did not create.”

Vítor Constâncio, ECB Vice-President, 25 August 2015

Source: Algebris Investments (UK) LLP
Why Current Policies Do Not Work
Why Current Policies Do Not Work
Keynes vs Friedman vs Bernanke

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

“… it shows how unreliable interest rates can be seen as an indicator of appropriate monetary policy. […] Now, the Bank of Japan’s argument is, ‘Oh well, we’ve got the interest rate down to zero; what more can we do?’ It’s very simple. They can buy long-term government securities, and they can keep buying them and providing high-powered money until the high powered money starts getting the economy in an expansion. What Japan needs is a more expansive domestic monetary policy.”
Speech at the Bank of Canada, 2000

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

Source: Algebris Investments (UK) LLP
Why Current Policies Do Not Work
NIRP: Theory vs Practice

Theory
- Asset prices go up
- Positive wealth effect
- Earnings growth
- More spending

Practice
- Negative wealth effect
- Lower returns and income expectations (Consumers)
- Lower profitability (Banks)
- Credit contraction
- Less lending
- Less spending

Source: Algebris Investments (UK) LLP
Why Current Policies Do Not Work
Loan Demand vs Supply with Demand Shocks and Supply Constraints

Theory

Practice

Interest rate, %

Loan volume

Interest rate, %

Loan volume

Source: Algebris Investments (UK) LLP
Why Current Policies Do Not Work
IS-LM in QE Infinity

In theory
Impaired monetary transmission
We're here now

Source: Algebris Investments (UK) LLP
Why Current Policies Do Not Work
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 - 2016

Source: Algebris Investments (UK) LLP, BoE, ONS, ECB

Source: Algebris Investments (UK) LLP, Bloomberg
Why Current Policies Do Not Work
Debt Overhangs Have Only Declined Where Capital Markets Allowed Defaults

US private sector delevered, 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: 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
Why Current Policies Do Not Work
Europe Relies on Banks for Credit Intermediation, but Banks Are Still Too Large…

Bank asset size/GDP

Source: Algebris Investments (UK) LLP, ECB, FRED, BoE, BoJ

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Why Current Policies Do Not Work
... and Overcomplex

Source: Algebris Investments (UK) LLP, Bloomberg
Why Current Policies Do Not Work
Eurozone Banks vs Rest of the World

- Eurozone bank assets: €32.5tn
- Eurozone GDP: €10tn
- Value of world’s gold stock: €7tn
- US-Iraq war cost (2003-10): €2.7tn
- Global hedge fund industry: €1.6tn
- ESM: €0.5tn
- Kung Fu Panda 3: €0.0001tn

Source: Algebris Investments (UK), Bloomberg, Wikipedia
Why Current Policies Do Not Work
Too Big to Fail Has Not Gone Away

Bank asset size/GDP of parent country

Source: Algebris Investments (UK), Bloomberg, IMF
Why Current Policies Do Not Work
Productivity Growth Has Hit a Wall

Trend growth of labour productivity (output per hour) using HP filter, 1951 - 2015

Source: Algebris Investments (UK) LLP, The Conference Board Total Economy Database. *Trend growth rates are obtained using HP filter, assuming a lambda of 100.
"I am throwing the possibility out there that even "helicopter money" may not work for the same reason that so much fiscal spending has not elevated growth... So the nuclear option may not be as much of a panacea as some people think."

Raghuram Rajan, Former RBI Governor, 10 May 2016

“I have serious reservations about the extent of reliance on monetary policy around the world. It isn't that the central banks were wrong to do what they could, it is that what they could do was not enough, and never could be enough, fully to restore demand after a period of recession associated with a very substantial debt build-up. [...] The problem now is that there is a limit to how much we can expect to achieve by relying on already indebted entities taking on more debt.”

Glenn Stevens, Former RBA Governor, 10 August 2016

“In assessing the effectiveness of the negative interest rate policy, the potential impact on the financial intermediation due to its influence on the profits of financial institutions needs to be taken into account. Considering that the profits affect the soundness of financial institutions in a cumulative manner, the impact can vary depending on the duration of the policy. ”

Haruhiko Kuroda, BoJ Governor, 5 September 2016

“So they do reflect also the expectation that this extraordinary policy support will remain in place. But does it mean that it can stay in place forever? The answer is of course no. We want a convergence which is self-sustained, in other words, without the extraordinary policy support that is in place now.”

Mario Draghi, ECB President, 20 October 2016
The Divided Kingdom:
Policy and Populism in the UK after Brexit
The UK’s Challenges Beyond Brexit

Twin Deficits

Current account deficit is rising
UK current account deficit, % GDP

Fiscal gap is still large at 5% GDP, and could widen again
As % of GDP

Source: Algebris Investments (UK) LLP, Office of National Statistics (ONS)

Source: Algebris Investments (UK) LLP, Office of Budgetary Responsibility (OBR)
The UK’s Challenges Beyond Brexit
Currency Depreciation, Higher Inflation

Pound depreciation will bring in import-led inflation

Importing goods and labour, exporting services

46% of the total food consumed is imported:
- Over 90% of bananas and coffee
- 81% of tomatoes
- 70% of cucumbers
- 60% of mushrooms
- 50% of cauliflower

58% of imported food is from the EU

10% of the workforce is foreign nationals:
- 31% of food manufacturers
- 23% of domestic help
- 16% of crop production / animal rearing
- 14% of NHS nurses

Source: Algebris Investments (UK) LLP, Bloomberg. GBP index used is Deutsche Bank GBP Trade Weighted Index Spot.

The UK’s Challenges Beyond Brexit
Lost Productivity

UK productivity has stalled post-crisis
Cumulative productivity growth since 2001, %

- UK productivity has lagged Europe
  - 1.5% productivity growth from 2008 to 2015 vs 13% from 2000 to 2006
  - 7% financial industry productivity growth led UK economy pre-crisis
  - 6x higher productivity growth in the EU than in the UK, post-crisis
  - 20% higher productivity levels in G7 countries than in the UK:
    - 31% higher in the US
    - 31% higher in Belgium
    - 27% higher in France
    - 24% higher in Germany
  - 30% higher productivity in London than the rest of the UK
  - 7 of 12 UK regions have lower productivity in 2014 than in 2007

Source: Algebris Investments (UK) LLP, OECD
Source: Algebris Investments (UK) LLP, "Productivity in the UK" (House of Commons Library), "Innovation, research and the UK's productivity crisis," (University of Sheffield)
The UK’s Challenges Beyond Brexit
Too Much Leverage, Again

UK household leverage is expected to continue rising

Household Debt to Income, %

“Bunching” of mortgage flows at LTI just below 4.5x

Distribution of mortgage flows by LTI

Source: Algebris Investments (UK) LLP, OBR

Source: Algebris Investments (UK) LLP, BoE
The UK’s Challenges Beyond Brexit
Consumers: Winter is Coming

Consumers spend less on discretionary items
Volume of Goods and Services Purchased, 2008 = 100

Where will consumers cut spending this time?
Change in total household expenditure, 2007-2009

Source: Algebris Investments (UK) LLP, ONS

Source: Algebris Investments (UK) LLP, ONS
The UK’s Challenges Beyond Brexit
Social and Geographical Imbalances Grow

There are great disparities between regions …
GVA per head 2014, £k vs unemployment % 2016

… and along socio-economic lines

6th highest income inequality amongst OECD members

7% privately educated Britons are:
- 71% of senior judges
- 55% of Permanent Secretaries
- 53% of Senior Diplomats
- 50% of Lords
- 44% of the Sunday Times’ ‘Rich List’
- 43% of Columnists
- 35% of the National Rugby Team

Top 1% of earners pay 27% of tax

45% of Britons from the top income quartile remain in this bracket

12% only of those in the lowest income quartile ever migrate to the highest quartile

Source: Algebris Investments (UK) LLP, ONS

Source: Algebris Investments (UK) LLP, “Elitist Britain?” UK Gov
The UK's Challenges Beyond Brexit
The UK is Over-dependent on London

The economy is over-dependent on London ....
% share of UK GVA, 2014

... which itself is very unequal

Source: Algebris Investments (UK) LLP, ONS

Source: Algebris Investments (UK) LLP, Google Images
The UK’s Challenges Beyond Brexit

The Housing Crisis

Over £100bn offshore-held property in London

Average home price in London: £600k

What £500k buys you in

London

Scotland

More leverage: loan-to-income ratio in London & the UK increased from around 2.3x in 1995 to 3.7x and 3.2x in 2015, respectively

Unaffordable: between 1994 and 2014, the average house price increased from around 6x earnings to over 16x
## Brexit means Brexit

### Expectations vs Reality

<table>
<thead>
<tr>
<th>Monetary Policy:</th>
<th>Monetary Policy:</th>
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<tbody>
<tr>
<td>“Because while monetary policy – with super-low interest rates and quantitative easing – provided the necessary emergency medicine after the financial crash, we have to acknowledge there have been some bad side effects.”</td>
<td>4% probability of 25bp rate hike by September 2018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fiscal Stimulus:</th>
<th>Fiscal Stimulus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>“[...] we need to do: take big, sometimes even controversial, decisions about our country’s infrastructure”</td>
<td>2nd highest fiscal deficit in Europe at 4.9% in 2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humanitarian Aid:</th>
<th>Humanitarian Aid:</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Providing humanitarian support for refugees in need.”</td>
<td>Accepted refugees: Germany 1m in 2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inequality:</th>
<th>Inequality:</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Advancement in today’s Britain is still too often determined by wealth or circumstance. By an accident of birth rather than talent. By privilege not merit.”</td>
<td>0.8% Oxbridge graduates are: 75% of Senior judges</td>
</tr>
</tbody>
</table>

4.9% of GDP net spending cuts by 2019

0.8% Oxbridge graduates are: 75% of Senior judges

38% of Lords

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# Brexit: The Road Ahead

## Potential Outcomes

To exit the EU, the UK parliament needs to trigger Article 50 under the Lisbon Treaty. Under Article 50, the UK has two years to renegotiate the terms of its relation with the EU. If negotiations have not been completed by this time, the UK will automatically be removed from the EU.

We see three scenarios ahead:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Chance</th>
<th>Impact on the UK economy</th>
<th>BoE response</th>
<th>Political spill over to Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hard Brexit</strong></td>
<td>60%</td>
<td>Recession. Loss of EU passporting rights. Job losses in finance-related sectors.</td>
<td>Rates cut to negative</td>
<td>EU breakup fears resurface</td>
</tr>
<tr>
<td><strong>Soft Brexit</strong></td>
<td>30%</td>
<td>Medium term weaker growth, until EEA or EFTA status is approved</td>
<td>One more cut to zero</td>
<td>Anti-EU protest parties gain ground</td>
</tr>
<tr>
<td><strong>Bremain</strong></td>
<td>10%</td>
<td>Article 50 not triggered. Parliamentary vote or new elections. Short term weaker growth</td>
<td>Lower for longer</td>
<td>Contained</td>
</tr>
</tbody>
</table>

Source: Algebris Investments (UK) LLP
Bringing The United Kingdom Back
Proposed Long-term Solutions

**Prevent another rise in household leverage**
- Bank of England could tighten lending standards
- Reduce housing subsidies, such as the Help to Buy scheme

**Reduce inequality through property / wealth taxes**
- Current policies penalise income earners and benefit asset holders:
  - 0% tax on primary residences vs 45% highest income tax
- A wealth or property tax could:
  - reduce inequality
  - reduce deficits

**Encourage investment in the real economy**
- Infrastructure spending
- Housing investment

**Monetary policy reforms**: increase macro-prudential regulation and credit controls

**Economic rebalancing**: diversify the financial system away from banks, and towards other funding source
Brexit: Market Implications
Lower FX, Higher Inflation, Higher Rates

Inflation expectations are rising
5y5y forward inflation, %

Gilt yields are rising, but remain below inflation expectations
Yield to maturity, %

Source: Algebris Investments (UK) LLP, Bloomberg
Italy: The Petrified Forest
Italy’s Constitutional Referendum: a Roadmap

The Italian Constitutional Referendum

Yes
- Renzi stays
- Next elections in spring 2018
  - Elections take place under revised electoral laws
    - Stable government
  - Potential fragmented outcome/hung parliament

No
- Renzi resigns
  - Caretaker government
  - Gridlock/weak government
  - New elections in 2017

Source: Algebris Investments (UK) LLP
Entrepreneurship vs. Bureaucracy

Population
65,110,000
60,666,000

Members of Parliament
1,459
950

Gender employment gap
9pp
20pp

Youth unemployment
13.1%
39.9%

Police force personnel
200,922
336,000

Number of days to enforce a contract
437
1,120

Corruption index
10th
61st

Shadow economy, % GDP
9.4%
20.8%

Global competitiveness ranking
10th/144
43rd/144

Source: ONS, Transparency International, Eurostat, national websites, WEF, WorldBank, Johannes Kepler University (Friedrich Schneider)
The Labour Market Needs More Reforms

Labour costs are finally coming down
 Labour cost index, Q1 2005 = 100

But productivity continues to stall
 Real labour productivity per person, Q1 2005 = 100

Source: Algebris Investments LLP, Eurostat
Italy’s Economy and Its Banking System

80% of Italian firms are SMEs
80% of new jobs are created by SMEs
80% of corporate funding comes from banks

- €100bn decline in corporate loans since 2009
700 banks in Italy
30% of bank revenues goes in fixed costs
0.1% average Return on Assets

€1tn of NPLs in the Eurozone (10% GDP)
€300bn of NPLs in Italy
16% average NPL ratio

44.7% average coverage ratio
7-10 years to recover insolvent credit vs 2-3 on average in other EU countries

Source: Algebris Investments (UK) LLP, Company reports, Progetto Atlante (bozza preliminare), European Central Bank, Eurostat

A mountain of non-performing loans
Non-performing loan volumes by country, €bn, Q2 2016

Source: Algebris Investments (UK) LLP, EBA

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Small Businesses Are at the Core of Italy’s Economy
80% of SMEs Funding Is Bank Loans

SMEs are a large part of Italy’s economy
Breakdown of companies by size, % of total companies

Italian firms depend on banks for credit
Firms’ most preferred types of external financing if needed

Source: Algebris Investments (UK) LLP, EC Observatory on SMEs (2015 Survey)
Bank Profitability Is Chronically Low
Lack of Profitability Is a Structural, Not a Cyclical Problem

Median 4-quarter moving average ROE, %

Average return on assets, 2007 – Q3 2015

Source: Algebris Investments (UK) LLP, Bloomberg. 2016 values are Bloomberg estimates.

Source: Algebris Investments (UK) LLP, ECB.
Too Many Bank Branches
Extensive Branch Network Imposes Heavy Costs on Italian Banks

Number per 100,000 people

Source: Algebris Investments (UK) LLP, World Bank, OECD, ISTAT, European Pharmacists Forum
Interconnectedness: Cross-holdings in Italy’s Banking System

Source: Merler S. (Bruegel)
A Web of Cross Board Memberships Slows Reform

Source: Algebris Investments (UK) LLP, FT, Bloomberg, Company reports
Reforming the Justice System Could Help Banks Clean up

It takes nearly 5 years to foreclose in Italy
Typical duration of a foreclosure procedure, years

Lengthy judicial process discourages investment
IRR decreases with longer foreclosure period

Source: Algebris Investments (UK) LLP, IRRs are calculated based on a hypothetical bad loan investment assuming €100m face value with 50% haircut for purchase price and 70% recovery rate. Data as of 2013

Source: Algebris Investments (UK) LLP, ECB data as at 2013
How to Improve the System

Changes needed to improve labour market flexibility

- Further simplify employment contracts to reduce complexity and duality in the labour markets
- Abolish or reduce the number of professional orders to open up professions to more new entrants and to increase flexibility in tariff setting
- Boost female participation in the workforce

How to improve the banking system

- Consolidation of mid-tier banks; reduce the number of branches and promote internet banking
- Reform of the justice system: speeding up foreclosures and bankruptcies
- Continuing to open up lending activity to non-bank entities (mutual funds, mini-bonds)
- Future tax incentives for the disposal of non-performing loans

How to improve the justice system

- Require performance measurement indicators for all courts and individual judges; encourage arbitration
- Outsource certain functions (credit recovery) to non-state authorised personnel
- Reduce the number of cases reaching the supreme court
- Clarify regulation on pledges over bank accounts
- Create a fast track enforcement procedure for systemic creditors (e.g. banks, for credits > €1m)
- Create a fast track procedure for labour disputes
- Increase the number of judges
- Simplify the tax system
- Reduce one level of judgement, e.g. cut one court of appeals
US: Make Inflation Great Again
## Fiscal Stimulus on the Way

<table>
<thead>
<tr>
<th></th>
<th>Trump</th>
<th>Republican Congress</th>
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<tbody>
<tr>
<td><strong>Taxes</strong></td>
<td>Lower taxes for everyone</td>
<td>Broadly support tax reform</td>
</tr>
<tr>
<td></td>
<td>Reduce dramatically the income tax, with a top rate of 33% vs 39.6% now</td>
<td>Budget blueprint approved by the House earlier this year seeks to reduce the deficit by $7tn over the next ten years</td>
</tr>
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<td></td>
<td>Lowering the top federal corporate tax rate to 15% from 35% now</td>
<td>House Ways and Means Committee: expects the tax reform to be &quot;revenue neutral&quot;</td>
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<td></td>
<td>Repatriation of corporate profits held overseas at a one-time 10% rate</td>
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<td></td>
<td>Tax dividends and capital gains at 20%</td>
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<td></td>
<td>Eliminate corporate alternative minimum tax</td>
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<tr>
<td></td>
<td>Center for a Responsible Federal Budget estimates his plans would increase fiscal deficit to $5.3tn over the next ten years</td>
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<tr>
<td><strong>Infrastructure</strong></td>
<td>Increase infrastructure spending by a substantial amount, “at least double” Clinton’s proposal ($275bn over five years)</td>
<td>Mixed views from Congressional Republicans: some support the use of tax proceeds on repatriated profits to pay for an infrastructure plan vs some prefer to use such proceeds to offset the budgetary effects of lower taxes</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>Would increase funding for scientific research and college education</td>
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</table>

Stronger Fiscal Stimulus to Support Growth and Inflation

Core inflation is picking up, helped by wage growth
Wage vs Core CPI, YoY %

Rising minimum wage will be a tailwind to inflation
Minimum wage vs inflation

Source: Algebris Investments (UK) LLP, Bloomberg

Source: Algebris Investments (UK) LLP, FRED
Trumponomics: the Good vs the Bad

Source: Algebris Investments (UK) LLP
Emerging Markets:  
At the Centre of a Perfect Storm
China Growth is Slowing, Little Headroom for More Stimulus

China growth is slowing …

GNI per Capita (PPP, $k), 10-Year Average GDP Growth (%)

… and with limited spare room for stimulus

% GDP Over 3-Year Period

Source: Algebris Investments (UK) LLP, National Bureau of Statistics of China, International Monetary Fund (IMF), Bloomberg

Note: Singapore is excluded from the trend line as a city state

Source: Algebris Investments (UK) LLP, World Bank

Belgium

China

Diamond

Germany

Netherlands

Switzerland

Source: Algebris Investments (UK) LLP is authorised and regulated by the Financial Conduct Authority.
Oil: Middle East Countries are Vulnerable to Rising Deficits

Supply-Demand imbalances will continue through 2016
Mb/d

Policy dry powder may run out quickly to fund fiscal deficits
Policy Dry Powder vs 6-year Average Fiscal Deficit

Source: Algebris Investments (UK) LLP, IMF. Note: *Based on an estimated valuation of $2tn for Aramco. Deficit estimates are based on IMF deficit and GDP forecasts for 2016-2021.
Solutions:
QE with Limits, Fiscal Policy and Debt Restructuring
“Bank equity prices are of some significance for policymakers, because if they drop in the way they did, one would assume, if this is to stay, cost of capital would increase, and therefore the net return on lending would decrease and would suggest on the banking side a more conservative lending behaviour. That's why we do care about bank equity prices for the transmission of our monetary policy.”

Mario Draghi, ECB President, 21 July 2016
## Solutions

### Potential Policy Measures to Achieve Sustainability

<table>
<thead>
<tr>
<th></th>
<th>Solution</th>
<th>Action</th>
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<tbody>
<tr>
<td><strong>Public sector debt</strong></td>
<td>Flexible debt linked to growth</td>
<td>Restructuring with growth-linked bonds</td>
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<tr>
<td></td>
<td></td>
<td>Bail-inable sovereign bonds</td>
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<td></td>
<td></td>
<td>Blue-Red bonds</td>
</tr>
<tr>
<td><strong>Private sector debt</strong></td>
<td>Realise losses through defaults/restructuring</td>
<td>Speed up and standardise insolvency procedures</td>
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<td></td>
<td>Diversified funding</td>
<td>Deepen capital markets to spread losses more evenly</td>
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<tr>
<td></td>
<td></td>
<td>Bail-inable debt</td>
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<tr>
<td></td>
<td></td>
<td>Develop securitisation markets to share risk of loan lending</td>
</tr>
<tr>
<td><strong>Kick-start growth</strong></td>
<td>Combine monetary policy with fiscal stimulus to increase investment and boost productivity. Reduce inequality. Rebalance growth model.</td>
<td>Bank consolidation and restructuring of business models</td>
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<tr>
<td></td>
<td></td>
<td>Infrastructure spending</td>
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<td></td>
<td></td>
<td>Skill re-training for workers</td>
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<td></td>
<td></td>
<td>Improve access to education and funding for R&amp;D</td>
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<tr>
<td></td>
<td></td>
<td>Rebalance weight on income vs wealth tax</td>
</tr>
<tr>
<td><strong>Long term</strong></td>
<td>Monetary policy reform</td>
<td>Include financial stability in central banks’ mandate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central banks control quantity of credit created</td>
</tr>
</tbody>
</table>

Source: Algebris Investments (UK) LLP
Solutions

Growth-linked Bonds Pay Out More/Less If the Economy Does Better/Worse

Nominal GDP target vs Actual path of GDP

Higher interest payments

Lower interest payments

Source: Algebris Investments (UK) LLP
Conclusion:
Investing When the Tide Is Turning
Conclusions
Yields Do Not Protect Bondholders from Duration Risk

The chart illustrates the number of years of interest payments needed to cover for capital loss caused by a 1% increase in yield. The results show that for longer-term bonds, the required number of years is significantly higher, with the 30-year JGB requiring approximately 600 years to cover the capital loss.

Source: Algebris Investments (UK) LLP, Bloomberg
Conclusions
Lack of Yield Pushes Investors to Crowded Passive Strategies

Earning enough to cover management fees is getting harder

Management fee as % yield vs Top 10 ETF AUM

Source: Algebris Investments (UK) LLP, Bloomberg. ETFs included are SPY, IVY, VTI, EFA, VOO, VWO, AGG, GLD, QQQ, VEA

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Conclusions
The Lower-for-Longer Trade Has Led to Increasing Herding

Long bonds: a crowded trade
Average yield vs duration

Cross-asset correlations have risen post-crisis
Correlation of major asset classes

Source: Algebris Investments (UK) LLP, IMF, BoAML, Bloomberg, Federal Reserve, JPMorgan
Conclusions
Deteriorating Liquidity and Herding Could Lead to Higher Volatility

Dealers deleveraging = higher market volatility
US Dealer-Broker Bond Inventory (US$, bn)

Investment funds own an increasing % of bond markets
Bond Holdings by Financial Institutions (% of total holdings)

A lower density of market makers, a broader range of smaller and more risky bonds, as well as larger mutual fund holdings, are all associated with higher vulnerability of liquidity to external shocks

Source: Algebris Investments (UK) LLP, Federal Reserve
Source: Algebris Investments (UK) LLP, Bloomberg, International Monetary Fund (IMF)

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Conclusions
Investing When the Monetary Tide Is Turning

QE has turned bond markets into a yield desert
Yield vs duration, bubble size indicates outstanding amount

Financial bonds have underperformed year to date
YTD total return

Source: Algebris Investments (UK) LLP, BoAML Indices
Conclusions
From QE Infinity to Sustainable Long-term Solutions

1. Keynes’ and Friedman’s theory worked well in a world with growing demographics and productivity

2. Fiscal policy needs to be sustainable and aimed at improving productivity. Lump-sum spending by governments overburdened by debt has proven to be ineffective, like in Japan

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, the transmission channel of monetary policy remains impaired

4. Central bankers have realised that prolonged QE and negative interest rates policy (NIRP) are ineffective and are shifting their focus to the transmission channel of monetary policy

5. This means caring about bank profitability and lending, and putting a floor on negative rates

6. Fiscal stimulus is likely to happen in the US and in the UK, in response to Brexit. Europe could implement a plan after German and French elections in 2017

7. The long term solutions are growing productivity and reducing debt burdens

8. The shift from QE Infinity to QE with limits is good for savers and firms which were hurt the most by NIRP - banks and insurers, and bad for the assets which performed best thanks to low rates, like utility stocks, long-dated investment grade bonds, and core government debt
2017: The Movie
The Main Drivers and Our Predictions for Next Year

“Always make the audience suffer as much as possible.” – Alfred Hitchcock

The Cast:

**Populism** – Protest politics will mean more fiscal stimulus, protectionism (trade tariffs, curbs to migration) and rising geopolitical risks.

**Fiscal stimulus** – The US, UK, Japan and to a lesser extent, the Eurozone will expand fiscal spending. In some cases, spending plans will boost the economy.

**Monetary policy** – It’s powers are gradually fading. The new mantra is now *less is more*: Central Banks have realised *QE infinity* is self-defeating in bank-centred financial systems, and are under pressure to normalise interest rates from savers, insurers and pension funds.

The (potential) Movies:

1. **Il Gattopardo (1963)** – the muddle-through scenario
   *Everything must change, so that everything stays the same.*

2. **Reservoir Dogs (1992)** – the worst case scenario
   *If you shoot this man, you die next.*

3. **The Big Lebowski (1998)** – the best case scenario
   *After thinking you’re entering a world of pain, there is a happy ending*

Our Base Case is a combination of the first two Movies. However, in all three, bond investors are worse off. Rising populism, fiscal expansion and fading monetary policy stimulus mean higher interest rates and inflation and higher volatility. This calls for more defensive strategies, able to monetise gains from a difficult investment environment.
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Algebris Investments (UK) LLP (“Algebris”) is a global investment manager with a historical focus on the financial sector across the capital structure.

Founded in 2006, Algebris has gradually expanded its expertise and entered the global credit space to capture a broader set of value opportunities.

18 Investment Professionals
150+ Years of Combined Experience

Diverse Strategies
Long Only and Hedged

10 Years
Successful Track Record in Financials

AUM
USD 5.5bn*
Active in UCITS since 2011

*Across nine funds and a number of managed accounts. Data as of 30.11.2016
Source: Algebris Investments (UK) LLP

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