Global Risk Outlook
May 2016

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About Oxford Economics

- **Oxford Economics** is a world leader in global forecasting and quantitative analysis. Our worldwide client base comprises over 1,000 international corporations, financial institutions, government organizations and universities.

- **Founded in 1981** as a joint venture with Oxford University, Oxford Economics is now a leading independent economic consultancy.

- **Headquartered in Oxford,** with offices around the world, we employ 250 people, including 150 economists, and a network of 500 contributing researchers.

- The rigor of our analysis, caliber of staff and links with other leading research groups make us a trusted resource for decision makers.
Markets have rebounded... but stress is palpable

World: Stock markets
Index August 1 2014=100

US: Market volatility
CBOE Market Volatility Index, VIX

Source: Oxford Economics/Haver Analytics
Source: Haver Analytics
Economic news less disappointing

World: Economic surprise indices

Source: Oxford Economics/Haver Analytics
Eurozone is fastest growing advanced economy??

**US: Real GDP growth**

- **Real GDP, US** (red bars)
- **Real GDP, Eurozone** (blue bars)

% annualized rate

*Only in Q1s!*

Source: Oxford Economics/Haver Analytics

**Eurozone: Wages and unemployment**

- **Unemployment (RHS)**
- **Negotiated wages (LHS)**

% year

Source: Haver Analytics
Inflation to rebound but ECB closely monitoring

**Eurozone: CPI Inflation (Bottom-up forecast model)**

- **% y/y / contribution**
  - Core
  - Energy
  - Food alcohol and tobacco
  - Headline

**Forecast**

![Graph showing CPI Inflation contribution from Core, Energy, Food alcohol and tobacco, and Headline from 2010 to 2017.](source: Oxford Economics/Haver Analytics)

**Eurozone: Exchange rate and swap rates**

- Eurozone - US two-year swap rate (LHS)
- $/€ (RHS)

![Graph showing exchange rate and swap rates from Jan 2014 to Jan 2016.](source: Oxford Economics/Bloomberg)
The end of 2015 slowdown is proving to be “sticky”

US: OE's Economic Momentum Indicator

% annual rate

-2.0  -1.0  0.0  1.0  2.0  3.0  4.0  5.0  6.0

2012Q1  2013Q1  2014Q1  2015Q1  2016Q1

Source: Oxford Economics

March 2016

Real GDP
EMI
Usual culprits behind slowdown

**Culprits:**
- Strong US dollar
- Weak global growth
- Depressed oil and gas activity
- Modest consumer spending
Employment growth is robust
Business investment to remain sluggish in 2016

US: NFIB Small Business Optimism Index

- NFIB headline index - 3mo avg (LHS)
- % of firms planning to raise capex in 3-6 months (RHS)

Source: Oxford Economics/Haver Analytics
2% growth miss is likely

US: Real GDP growth

% annualized

Source: Oxford Economics
Global headwinds are restraining net exports

**US: The 'emerging markets' threat**

Percentage points contribution to US merchandise export growth

- 2010: 22.5%
- 2011: 13.5%
- 2012: 5.0%
- 2013: 1.5%
- 2014: 1.0%
- 2015: 1.0%

Source: Oxford Economics
Leading indicators suggest EM weakness

BRICs: Manufacturing Purchasing Managers’ Index

Index, breakeven level=50

Source: PMI/Markit/China NBS/Haver Analytics
Who are the out/underperformers within EMs?

Emerging markets: GDP growth (2016)

- India: 7.4%
- China: 6.5%
- Indonesia: 5.1%
- Peru: 3.6%
- EMs: 3.4%
- Turkey: 3.3%
- Nigeria: 2.8%
- Colombia: 2.7%
- Mexico: 2.6%
- World: 2.3%
- Chile: 2.0%
- S. Africa: 0.7%
- Argentina: 0.3%
- Russia: -2.1%
- Brazil: -4.4%

Source: Oxford Economics
Risks remain skewed to downside...

What probability do you place on a global downturn or recession over the next two years?

Percentage of respondents

- >90% (Q1 2016: 2%, Q2 2016: 4%)
- 80-90% (Q1 2016: 4%, Q2 2016: 7%)
- 70-80% (Q1 2016: 8%, Q2 2016: 11%)
- 60-70% (Q1 2016: 12%, Q2 2016: 15%)
- 50-60% (Q1 2016: 16%, Q2 2016: 20%)
- 40-50% (Q1 2016: 19%, Q2 2016: 24%)
- 30-40% (Q1 2016: 24%, Q2 2016: 28%)
- 20-30% (Q1 2016: 27%, Q2 2016: 30%)
- 10-20% (Q1 2016: 30%, Q2 2016: 30%)
- <10% (Q1 2016: 30%, Q2 2016: 30%)

Source: Oxford Economics
What do you see as the top three downside global economic risks over the next two years?

Percentage of respondents citing as a top 3 risk

- Currency wars
- Trump presidency weighs on US growth
- Continued US interest rate rises cause market turmoil
- Further weakness in oil and commodity prices
- BREXIT (ie UK votes to leave EU)
- Geopolitical tensions (eg Middle East or South China Sea)
- Unconventional policies, such as negative rates, undermine confidence
- Renewed challenges for Eurozone (eg GREXIT or as a result of migrant crisis)
- Emerging Market concerns trigger market turmoil
- More severe downturn in the Chinese economy

Source: Oxford Economics Global Risk Survey
Real growth slowed more than NBS data show

China: GDP growth estimates

% year

Source: Oxford Economics/Haver Analytics
China: Generous monetary and fiscal policy

Bank lending and total social financing

- Bank lending
- TSF

Source: Oxford Economics, CEIC Data

Fiscal policy

- Revenues
- Expenditures
- Balance (RHS)

Source: Oxford Economics, CEIC Data
Excess supply in real estate significant...

**China: Excess supply in the real estate sector**

- **Years of supply**
  - Ratio of property under construction to sales (lhs)
  - Vacant floor space (rhs)

**Average 2006 - 2010**

**Average from 2011**

Source: Oxford Economics/Haver Analytics
...and excess capacity in industry still on the rise

Production and capacity in industry

2007=100

Value added in industry

Production capacity in industry*

Excess capacity (RHS)

0 50 100 150 200 250
0 50 100 150 200 250
2001 2003 2005 2007 2009 2011 2013 2015
% Value added in industry
Production capacity in industry*
Excess capacity (RHS)

Source: Oxford Economics, CEIC Data
* From growth accounting
Our modelling expertise sets us apart

- Oxford Economics has developed the world’s leading globally integrated economic model, relied on by over 150 leading organisations around the world.
- Our model replicates the world economy by interlinking 46 countries, 6 regional blocs and the Eurozone. It is available with 5, 10 and 25-year forecasting horizon.
- 29 additional country models being added from May.
- The global economic model feeds into a series of industry, sub-regional and city models. So, you can quantify the impact of global events on a consistent basis down to your industry and local markets.
- Our team of 150 economists set underlying global assumptions and ensure that the data, forecasts and formulas in these models are fully up-to-date.
Chinese hard landing

China: GDP

% year


Baseline

Forecast

China hard landing

Source : Oxford Economics/Haver Analytics
Chinese hard landing

World: GDP

% year

Baseline

Forecast

China hard landing

Source: Oxford Economics/Haver Analytics
Chinese hard landing

World oil price

$/barrel


Baseline

Forecast

China hard landing

Source: Oxford Economics/Haver Analytics
Chinese hard landing

The domestic policy response

- Chinese authorities embark on a range of actions, including faster policy rate cuts and currency devaluation

Global impact and policy actions

- The slowdown weighs on world trade, commodity prices and other asset prices – and global monetary policy adjusts accordingly

- Global exchange rates adjust sharply in line with recent episodes of stronger RMB weakening

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**World: Exchange rates vs US$**

average % change relative to change in USDCNY *

- Japan
- Eurozone
- UK
- Singapore
- Thailand
- Philippines
- India
- Taiwan
- Indonesia
- Korea
- Brazil
- Chile
- Argentina
- Australia
- Turkey
- Malaysia
- S. Africa
- Mexico
- Russia

* between Aug 10 - Aug 25 and Dec 31 - Jan 8; values above 1 imply a stronger depreciation against US$ than that of the RMB

Source: Oxford Economics / Haver Analytics

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Asia and commodity producers hit hardest

World: GDP in downside scenario

% difference in level of GDP versus baseline, 2017

Source: Oxford Economics
US Treasury yields fall below 2%

**US: Federal funds rate**

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2009</th>
<th>2011</th>
<th>2013</th>
<th>2015</th>
<th>2017</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>6.0%</td>
<td>5.0%</td>
<td>4.0%</td>
<td>3.0%</td>
<td>2.0%</td>
<td>1.0%</td>
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Baseline

**US: 10-year government bond yields**

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Baseline

Source: Oxford Economics/Haver Analytics

Forecast

China hard landing

Source: Oxford Economics/Haver Analytics
‘Remain’ enjoy a narrow lead in the polls

UK: Opinion polls on Brexit*

% of respondents

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Stay  Leave  Undecided

Dots denote individual polls; Lines show rolling average of latest polls from individual companies.

Source: Financial Times EU referendum poll of polls
Option prices imply 15% depreciation post-Brexit

UK: $/£ exchange rate

Source: Oxford Economics
Investor & corporate confidence would be hit
GDP impact: noticeable but not catastrophic

UK: GDP growth

% year

Source: Oxford Economics
Risks remain skewed to downside...

**Chinese hard landing (15%)**
Housing sales slump sharply, triggering renewed house price falls and a sharp fall in housing construction.
Domestic and external confidence is hit hard, resulting in lower FDI inflows, private investment and consumption
The shock to growth spills over to emerging economies and sparks major currency realignment

**Financial market contagion (10%)**
Amid signs of weakening growth, the current market gloom persists and weighs on global growth
Equity price falls generate negative wealth effects, consumer and business confidence fade, and credit conditions tighten
The Fed responds and reverses course; but some EMs are forced into rate hikes to defend their currencies

**Geopolitical tensions (2%)**
A dramatic worsening in Saudi-Iranian relations triggers a violent reversal of recent oil price declines
Crude oil prices rise back above $80 per barrel
While the disruption is relatively short-lived, the global impact is material and varies hugely across countries

**Commodity demand weakness (10%)**
Oil prices fall further as global demand weakness weighs on commodity markets
At current low oil prices, that drags modestly on global growth
The boost to energy importers is outweighed by strains placed on exporter sovereigns and the US shale industry
Emerging market commodity producers and the US are among those hit hardest
…with significant real economy implications

Global scenarios
Maximum impact on prices

- Financial market contagion
- Geopolitical tensions
- China hard landing
- Weak world commodity demand causes financial strains

Source: Oxford Economics
China the biggest concern

What do you see as the top three downside global economic risks over the next two years?

Percentage of respondents citing as a top 3 risk

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Source: Oxford Economics Global Risk Survey
Trump: trade protectionism

The risk of a global trade war would unfold, which would yield much more negative implications than our scenario illustrates.

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>Employment</th>
<th>Spending</th>
<th>Inflation *</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>-1.6</td>
<td>-0.9</td>
<td>-2.2</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Source: Oxford Economics

* Inflation rate under scenario (base case 2.3%)
Trump: tax

**US: Federal debt as share of GDP**

- Oxford Economics
- Trump tax plan

**US: Federal deficit as a share of GDP**

- Oxford Economics
- Trump tax plan

Source: Oxford Economics/Haver Analytics/Tax Policy Center
Financial market contagion
Financial market contagion

US: Equity
S&P 500 composite index, EOP

Source: Oxford Economics/Haver Analytics
Financial market contagion

Impact on GDP (% difference versus 2016-2017 baseline)

-3.8

-0.7

Financial market contagion scenario
Commodity demand weakness
Weak commodity demand causes financial strains

World: Oil price

$/barrel

Baseline

Forecast

Weak world commodity demand causes financial strains

Source: Oxford Economics/Haver Analytics
Weak commodity demand causes financial strains

Saudi Arabia: Government balance

% share of GDP

Baseline

Forecast

Source: Oxford Economics/Haver Analytics
Weak commodity demand causes financial strains

US: Total fixed investment

% year

Baseline

Forecast

Weak world commodity demand causes financial strains

Source: Oxford Economics/Haver Analytics
Weak commodity demand causes financial strains
Geopolitical tensions
Geopolitical tensions scenario

World: Oil price

$/barrel

Baseline

Geopolitical tensions

Forecast

Source: Oxford Economics/Haver Analytics
Global upturn
Global upturn

US: Wages and salaries

% year

Source: Oxford Economics/Haver Analytics
Global Risk Outlook
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EUROPE: BREXIT economic impacts

Fig: Implications of Brexit for the UK's economic sectors in 2030

Source: Oxford Economics
Markets reacted badly to the referendum

UK: Mentions of "Brexit" & $/£ exchange rate

Mentions of "Brexit" vs $/£ exchange rate over time, with a significant drop around 20th Feb when the referendum was announced.

Source: Oxford Economics/Bloomberg
We would expect gilt yields to move lower

UK: 10-year government bond yield

Would gilt yields rise?

- Modest increase in borrowing
- Ratings agencies likely to put UK on negative watch
- Short-term interest rates lower
- Any risk premia would soon fade if MPC demonstrated it was in control
- UK would remain a safe haven

Source: Oxford Economics
Uncertainty could dampen activity in short-term

UK: Economic policy uncertainty & business investment
Pre-2011 mean = 100, inverted

Source: Haver Analytics
A weaker £ would drive up inflation

...but exporters in price-sensitive sectors would benefit
Brexit would pose a dilemma for policymakers

Monetary policy

- Inflation moves above target by early-2017
- But MPC have been happy to look through temporary, sterling-generated, overshoots before
- Recent dovishness suggests rate cut is the most likely response given growth concerns

Fiscal policy

- OBR would judge government in breach of fiscal mandate & growth not weak enough to trigger escape clause
- Chancellor likely to plead extenuating circumstances
…with significant implications for financial markets

Exchange Rate: Eurozone

Source: Oxford Economics/Haver Analytics
…and significant implications for commodities

World oil price

$ per barrel

- China hard landing
- Financial market contagion
- Global upturn
- Weak world commodity demand causes financial strains
- Geopolitical tensions
- Baseline

Source: Oxford Economics/Haver Analytics
...and significant implications for policy

**US: Federal Funds rate**

- Baseline

Source: Oxford Economics/Haver Analytics
...and significant implications for policy

US: Federal Funds rate

- Baseline
- Market contagion
- Geopolitical tensions
- China Slowdown
- World upside
- Weak commodity demand

Source: Oxford Economics/Haver Analytics
...and significant implications for policy

Fed Funds rate projections

%  
3.5  
3.0  
2.5  
2.0  
1.5  
1.0  
0.5  
0.0  

- Market implied rate  
- FOMC point estimates

Source: Oxford Economics/Haver Analytics
...and significant implications for policy

Fed Funds rate projections

- Market implied rate
- FOMC point estimates
- Oxford Economics baseline

Source: Oxford Economics/Haver Analytics
...and significant implications for policy

Fed Funds rate projections

Source: Oxford Economics/Haver Analytics
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Fed Funds rate projections

- Market implied rate
- FOMC point estimates
- Oxford Economics baseline
- Oxford Economics mean scenario

Source: Oxford Economics/Haver Analytics
Global economy: Feeble, Fickle & Fragmented

- World GDP growth for 2016: 2.3% – slowest pace of global growth since 2009. Forecast for 2017 cut further to 2.7%.
- EMs economies expected to remain subpar.
- Strains in financial markets have abated but conditions still tighter conditions than end-2015, and global risks are still skewed to the downside.
- Slowdown in US is proving to be “sticky”, but fundamentals remain strong.
- Central banks increased use of unconventional policy tools lends support to near-term growth (Japan, EZ), but there are questions about marginal benefits.

Triple F: Feeble, Fickle and Fragmented

- Key risk: financial market strains:
  - confidence, wealth and credit shock
  - China & EMs
  - Geopolitical?

Ammunition?
Housing recovery remains very gradual...

Drivers:
• Income growth
• Low interest rates
• Modest home price inflation
• Pent-up demand
Labor market supporting domestic demand

**Eurozone: Consumer confidence**

- % balance

- **Consumer Confidence**
- **Consumption % y/y**

- Source: Oxford Economics/Haver Analytics

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**Eurozone: consumption and real income**

- % y/y

- **Consumption % y/y**
- **RPDI % y/y**

- Source: Oxford Economics/Haver Analytics
ISM manufacturing has rebounded

The spread has narrowed between the manufacturing and non-manufacturing sectors.
Oxford’s Global Economic Model is the world’s leading globally integrated macro model, used by over 140 clients around the world, including finance ministries, leading banks, and blue-chip companies.

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