The global economic outlook after Brexit

Dirk Schumacher
Senior European Economist

dirk.schumacher@gs.com
+49(69)7532-1210
Goldman Sachs AG

July 2016

Investors should consider this research as only a single factor in making investment decisions. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to www.gs.com/research/hedge.html.
Brexit implications are now the main risk for the short-term outlook.

### Real GDP Growth

<table>
<thead>
<tr>
<th>Percent Change yoy</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016 (f)</th>
<th>2017 (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GS</td>
<td>Revision</td>
<td>GS</td>
<td>Revision</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>2.5</td>
<td>1.6</td>
<td>2.2</td>
<td>1.5</td>
<td>2.4</td>
<td>2.4</td>
<td>1.9</td>
<td>-0.1</td>
</tr>
<tr>
<td>Japan</td>
<td>4.7</td>
<td>-0.5</td>
<td>1.7</td>
<td>1.4</td>
<td>0.0</td>
<td>0.5</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Euro Area</td>
<td>2.0</td>
<td>1.6</td>
<td>-0.8</td>
<td>-0.2</td>
<td>0.9</td>
<td>1.5</td>
<td>1.3</td>
<td>-0.2</td>
</tr>
<tr>
<td>UK</td>
<td>1.5</td>
<td>2.0</td>
<td>1.2</td>
<td>2.2</td>
<td>2.9</td>
<td>2.3</td>
<td>1.5</td>
<td>-0.5</td>
</tr>
<tr>
<td>Sweden</td>
<td>5.7</td>
<td>2.7</td>
<td>0.1</td>
<td>1.2</td>
<td>2.4</td>
<td>3.9</td>
<td>3.4</td>
<td>-0.2</td>
</tr>
<tr>
<td>Norway</td>
<td>1.8</td>
<td>1.9</td>
<td>3.6</td>
<td>2.3</td>
<td>2.3</td>
<td>1.0</td>
<td>0.9</td>
<td>-0.2</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2.9</td>
<td>1.9</td>
<td>1.1</td>
<td>1.8</td>
<td>1.9</td>
<td>1.5</td>
<td>1.5</td>
<td>0.0</td>
</tr>
<tr>
<td>China</td>
<td>10.6</td>
<td>9.5</td>
<td>7.7</td>
<td>7.7</td>
<td>7.3</td>
<td>6.9</td>
<td>6.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>7.5</td>
<td>3.9</td>
<td>1.9</td>
<td>3.0</td>
<td>0.1</td>
<td>-3.8</td>
<td>-3.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Russia</td>
<td>4.5</td>
<td>4.0</td>
<td>3.5</td>
<td>1.3</td>
<td>0.7</td>
<td>-3.7</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Developed Markets</td>
<td>3.0</td>
<td>1.8</td>
<td>1.2</td>
<td>1.2</td>
<td>1.9</td>
<td>2.0</td>
<td>1.7</td>
<td>-0.1</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>8.2</td>
<td>7.0</td>
<td>5.4</td>
<td>5.3</td>
<td>4.9</td>
<td>4.2</td>
<td>4.7</td>
<td>0.0</td>
</tr>
<tr>
<td>World</td>
<td>5.4</td>
<td>4.2</td>
<td>3.2</td>
<td>3.2</td>
<td>3.4</td>
<td>3.1</td>
<td>3.1</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

Source: Goldman Sachs Global Investment Research.
Most studies suggest a significant adverse impact on UK growth.

The chart illustrates the peak impact on GDP level, with different scenarios and sources. The peak impact year is 2018, and ** indicates other. The chart includes sources: Haver, Goldman Sachs Global Investment Research.
Trade channel is rather small

Exports to UK as a % of GDP

Source: Haver Analytics, Goldman Sachs Global Investment Research
Uncertainty and FCI changes to be the main transmission channels

Changes in key macro variables

<table>
<thead>
<tr>
<th>Spillover Simulations</th>
<th>Dom. FCI (pp)</th>
<th>TWI (%)</th>
<th>FCI (pp)</th>
<th>GDP (%)</th>
<th>Core CPI (%)*</th>
<th>Policy Rate (pp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>0.12</td>
<td>1.28</td>
<td>0.22</td>
<td>-0.17</td>
<td>-0.04</td>
<td>-0.21</td>
</tr>
<tr>
<td>Euro Area</td>
<td>0.41</td>
<td>0.18</td>
<td>0.43</td>
<td>-0.45</td>
<td>-0.04</td>
<td>-0.43</td>
</tr>
<tr>
<td>Japan</td>
<td>0.37</td>
<td>5.25</td>
<td>0.78</td>
<td>-0.67</td>
<td>-0.14</td>
<td>-0.55</td>
</tr>
<tr>
<td>UK</td>
<td>0.59</td>
<td>-6.01</td>
<td>-0.46</td>
<td>-2.51</td>
<td>0.01</td>
<td>-2.68</td>
</tr>
<tr>
<td>EM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>DM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.43</td>
<td></td>
</tr>
<tr>
<td>World</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.20</td>
<td></td>
</tr>
</tbody>
</table>

* Average year-over-year inflation rate over the next 8 quarters.
Source: Goldman Sachs Global Investment Research.
Impact to be felt most in Japan via FCI tightening

Impact on real GDP relative to base line

Impact on core inflation relative to base line

* Average year-over-year inflation rate.

Source: Haver Analytics, Goldman Sachs Global Investment Research
Currency moves in uncertain times

Cumulative impact on trade-weighted G10 nominal exchange rate indices to one st. dev. “uncertainty shock”

Change in TWI G10 (%)

Source: Haver Analytics, Goldman Sachs Global Investment Research
Equities hit hard during the Brexit sell-off

Source: Haver Analytics, Goldman Sachs Global Investment Research
A permanent lower oil price is good news for the Euro area – but it implies some global re-balancing

Source: Haver Analytics, Goldman Sachs Global Investment Research
We expect the oil price to stay around the current level
Low commodity prices and China re-balancing imply lower EM FX reserves
Our Global Leading Indicator is showing — prior to Brexit — rising momentum

GLI momentum

Source: Goldman Sachs Global Investment Research

GLI components

- Baltic Dry Index
- Belgian and Netherlands Manufacturing Survey
- Consumer Confidence Aggregate
- Global New Orders Less Inventories
- Global PMI
- GS Australian and Canadian Dollar Trade Weighted Index
- Japan IP Inventory/Sales Ratio
- Korean Exports
- S&P GS Industrial Metals Index
- US Initial Jobless Claims
US: Financial conditions are rising again – postponing the next Fed hike

Source: Goldman Sachs Global Investment Research
US: Our Current Activity Indicator is easing again
US: The Fed risks missing out on its mandate

Source: Haver Analytics, Goldman Sachs Global Investment Research
China: CNY to disconnect from US

Trade-weighted exchange rates

Source: Haver Analytics, Goldman Sachs Global Investment Research
China: Growth keeps trending down

Source: Goldman Sachs Global Investment Research
China: A bumpy deceleration

Different measures of Chinese growth

Private consumption picking up

Source: Goldman Sachs Global Investment Research
China: Breakdown of demand for different commodities points to re-balancing

2015 demand growth of different commodities

- Kerosene
- Gasoline
- Zinc***
- Soybean*
- Aluminium
- Oil (total)
- Coffee*
- Nickel**
- Corn*
- Naptha
- Diesel
- Sugar*
- Copper
- Cotton*
- Wheat*
- Iron Ore
- Cement
- Met Coal
- Thermal Coal
- Steel

*Estimated 2015 annual consumption growth (no monthly data)
**calculated from apparent stainless steel demand
***calculated from zinc galv. production

Source: Goldman Sachs Global Investment Research
China: Short-term push through credit easing

Estimated growth impact of credit impulse

- Sequential credit growth stays at Q1 pace
- Credit growth decelerates to hit 13% target

Source: Haver Analytics, Goldman Sachs Global Investment Research
China: The level of debt looks worrying

Indebtedness of different sectors

<table>
<thead>
<tr>
<th>Year</th>
<th>% of GDP</th>
<th>Corporate leverage</th>
<th>LGFV leverage (loan, bond)</th>
<th>Govt. Leverage</th>
<th>Household Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Haver Analytics, Goldman Sachs Global Investment Research
Emerging Markets: Significant improvement of current accounts

![Graph showing EM avg current account balance (% GDP) over time. The graph indicates a significant improvement from the early 2000s until around 2013, followed by a decline until 2016. The 4 qtr MA line shows a smoother trend.]

Source: Haver Analytics, Goldman Sachs Global Investment Research
Emerging Markets: Financial Conditions have eased again

Source: Haver Analytics, Goldman Sachs Global Investment Research
Emerging Markets: Consumer confidence has stabilised

Source: Haver Analytics, Goldman Sachs Global Investment Research
Euro area: A moderate, but broad based recovery
Euro area: Business sentiment remains consistent with solid growth during Q2 – our RETINA model has also rebounded.
Euro area: Less headwind from fiscal consolidation next year

Source: Haver Analytics, Goldman Sachs Global Investment Research

Fiscal drag

ppt

2012 2013 2014 2015 2016 2017 2018

Germany France Italy Spain EMU4

Source: Haver Analytics, Goldman Sachs Global Investment Research
Euro area: Bank lending rates in Spain and Italy have come down significantly.

Interest rates on business loans % up to €1 mil., of maturity 1-5 years

Source: Goldman Sachs Global Investment Research
Euro area: Corporates still in deleveraging mood

Net savings of Euro area non-financial corporates

Source: Haver Analytics, Goldman Sachs Global Investment Research
Euro area: Profits growth is supporting investment spending

![Graph showing the relationship between operating surplus (lhs) and fixed investment.](source: Haver Analytics, Goldman Sachs Global Investment Research)
Inflation to rise in H2:2016 as the oil price effect dissipates
Euro area: ECB purchases continue steadily

Source: Haver Analytics, Goldman Sachs Global Investment Research
Breakdown of ECB purchases

<table>
<thead>
<tr>
<th>(in Euro Bn)</th>
<th>Actual Mar'15-Mar'16</th>
<th>GS Estimates Apr-June'16</th>
<th>GS Estimates July'16 - Mar'17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Purchases</td>
<td>60</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Covered Bonds + ABS</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Corporate Bonds</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>PSPP</td>
<td>50.0</td>
<td>72</td>
<td>65</td>
</tr>
<tr>
<td>Supras</td>
<td>6.0</td>
<td>7.2</td>
<td>6.5</td>
</tr>
<tr>
<td>Gov/Agency/Laender</td>
<td>44.0</td>
<td>65</td>
<td>59</td>
</tr>
<tr>
<td>Germany (25.6%)</td>
<td>11.8</td>
<td>16.6</td>
<td>15.0</td>
</tr>
<tr>
<td>France (20.16%)</td>
<td>9.4</td>
<td>13.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Italy (17.5%)</td>
<td>8.1</td>
<td>11.3</td>
<td>10.2</td>
</tr>
<tr>
<td>Spain (12.6%)</td>
<td>5.8</td>
<td>8.2</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Notes: 1) The numbers in brackets represent the capital key contributions of the countries
2) In the Actuals Column, the numbers denote the average of the monthly purchases under each category

Source: Haver Analytics, Goldman Sachs Global Investment Research
ECB: Breakdown of Euro area corporate bond market

Source: Haver Analytics, Goldman Sachs Global Investment Research
ECB: Excess liquidity to rise to €1.4 trillion by the end of the year ...

Source: Goldman Sachs Global Investment Research, Bloomberg
... which is unevenly distributed

![Bar chart showing liquidity held at national central bank (Apr16) and purchases under PSPP (Apr16) for Germany, France, Italy, and Spain. The chart indicates that Germany has significantly more liquidity and purchases compared to the other countries.](source: Goldman Sachs Global Investment Research)
Italian export weakness not a new phenomenon – neither is low productivity growth
I, Dirk Schumacher, hereby certify that all of the views expressed in this report accurately reflect my personal views, which have not been influenced by considerations of the firm’s business or client relationships.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs’ Global Investment Research division.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce equity research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; in Canada by Goldman, Sachs & Co. regarding Canadian equities and by Goldman, Sachs & Co. (all other research); in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman, Sachs & Co. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, has approved this research in connection with its distribution in the European Union and United Kingdom; Goldman Sachs AG and Goldman Sachs International Zweigniederlassung Frankfurt, regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht, may also distribute research in Germany.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman, Sachs & Co., the United States broker dealer, is a member of SIPC (http://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analysts’ published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analysts’ fundamental equity rating for such stocks, which rating reflects a stock’s return potential relative to its coverage group as described herein.

We and our affiliates, officers, directors, and employees, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.
Disclaimer

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options disclosure documents which are available from Goldman Sachs sales representatives or at http://www.theocc.com/about/publications/character-risks.jsp. Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For all research, models or other data available on a particular security, please contact your sales representative or go to http://360.gs.com.

Disclosure information is also available at http://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.

© 2016 Goldman Sachs.

No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of The Goldman Sachs Group, Inc.