Outline

• Overview of globalization

• Global outlook for real economic activity & inflation

• Risks to the outlook
  • Monetary policy divergence
  • Oil
  • Europe: BREXIT, Italian banks, Greece, migrant problem...
  • China
Globalization

- Globalization - defining phenomenon of our era
  - Comparable to industrial revolution, Reformation etc.
  - Not new – nineteenth century / pre WWI
  - Trade versus technological change as drivers of change

- Interconnectedness
  - Global value chains
  - International financial markets
  - Fragility versus robustness
Globalization of the U.S. economy

Share of international trade in U.S. GDP

- Deglobalization during Great Depression and WWII
- Postwar recovery
- Trade boom due to GATT & containerization
- Onset of Globalization 2.0: information
- Great Trade Collapse
- Chine joins WTO Dec. 11th, 2001
World Output Shares
Nominal GDP based in USD, share of world total

Percent

Advanced
Emerging

The world has changed!

GDP based on PPP, share of world total

Percent

Advanced
Emerging

U.S. & China World Output Shares
Nominal GDP based in USD, share of world total

Percent


U.S. China
The world has really changed!

GDP based on PPP, share of world total
Global economic growth

• Global growth upswing that began in mid-2016 continues
  • Global growth expected at 3.6% in 2017, which is up from 3.2% in 2016

• The current upswing is broader than others over the past decade
  • Includes about 75% of the global economy when measured by GDP at PPP
  • Accelerating growth in Europe, Japan, China and the U.S.

• Some emerging & commodity exporting countries continue to struggle
  • Oil prices have remained low reflecting stronger than anticipated supply
Global real GDP growth over the past decade
Real GDP growth picking up

Consensus Forecasts
(as of August 2017)

Percent, year/year

Emerging World (ex. U.S.)
U.S.
Advanced (ex. U.S.)

-6 -4 -2 0 2 4 6 8 10

Consensus Forecasts
(as of August 2017)
Global outlook has improved since mid-2016

- Foreign-Advanced PMI
- Emerging-Market PMI
U.S. exports picking up with stronger global growth and a weaker USD

Percent, 3MMA, year/year

- Advanced (ex. U.S.)
- World (ex. U.S.)
- Emerging
Global inflation outlook

- Inflation remains below target in most advanced economies
  - Leaves policy rates near zero in most advanced nations
  - Weak wage growth

- Effects of commodity price decline in recent months
CPI inflation dominated by swings in energy prices

Percent, year/year

Emerging (ex. VN)
World (ex. U.S., VN)
Advanced (ex. U.S.)
U.S.

Consensus Forecasts (as of September 2017)
Deflation at the producer price level is ending

Percent, year/year

Emerging World (ex. U.S.)
Advanced (ex. U.S.)
U.S.
U.S. import price inflation back in positive territory after lower energy prices & strong dollar

Percent, year/year

- Nominal broad trade weighted USD (% YoY)
- Import price index (ex. Petroleum, % YoY)
- Import price index (% YoY)

Central bank policy rates stuck at zero outside the U.S.
Central bank balance sheets: Still growing in euro area, Japan & U.K.
10-year government bond yields remain near record lows

Percent

-1.0 -0.0 1.0 2.0 3.0 4.0 5.0 6.0

Japan
Germany
U.S.
U.K.

Headwinds & tailwinds for U.S. economy

• Tailwinds
  • Lower oil prices

• Headwinds
  • Monetary policy normalization in the United States
    • Liftoff from zero occurred at end 2015
    • How well prepared is the rest of the world for the end of the zero interest rate policy era?
  • Europe
    • How disruptive will BREXIT be?
    • Unresolved issues in Greece
    • Weak European banks & non-performing loans
  • Potential for a slowdown in China
    • Excess capacity
    • Risks of potential stock market & real estate market bubbles
Euro area economic activity finally growing above its pre-crisis level

GDP, Trillions of 2010 €

Double dip recessions associated with Global Financial Crisis and euro zone Sovereign Debt Crisis
Great Depressions

Unemployment Rate

- Spain
- Greece
- Portugal
- Ireland
- U.S.

[Graph showing unemployment rates for Spain, Greece, Portugal, Ireland, and the U.S. over time.]
Impact of the BREXIT shock on U.K. growth and inflation in 2017

Consensus forecast as of June 23 referendum

Oct. 2017 IMF WEO:
1.7 percent GDP
2.6 percent CPI

2017 GDP growth
2017 CPI Inflation

Percent

Oct. 2017 IMF WEO:
1.7 percent GDP
2.6 percent CPI

2017 GDP growth
2017 CPI Inflation

Percent
China contributes *a lot* to global GDP growth
Credit to the nonfinancial sector (Percent of GDP)
Credit to the **private** nonfinancial sector

(Percent of GDP)
Chinese industrial output growth has slowed dramatically.
Chinese price inflation: end of deflation at the producer level

- CPI
- CPI ex. food and energy
- Average house price in 100 cities
- PPI

Percent, year/year

Conclusions

• Outlook is for continued improved growth in 2017
  • U.S. likely to continue to be one of the stronger performers
  • Signs of improvement in Europe, Japan, China & the U.S.

• Risks
  • Monetary policies of major central banks diverging
    • Fed: normalization began December 2015
  • Europe; BREXIT
  • China slowdown
  • Oil
## IMF growth outlook

**October 2017**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>Change from April 2017 forecast 2017</th>
<th>Change from April 2017 forecast 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>World output</strong></td>
<td>3.6</td>
<td>3.7</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Advanced economies</strong></td>
<td>2.2</td>
<td>2.0</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>United States</td>
<td>1.8</td>
<td>2.3</td>
<td>-0.1</td>
<td>-0.2</td>
</tr>
<tr>
<td>Euro area</td>
<td>2.1</td>
<td>1.9</td>
<td>-0.1</td>
<td>-0.2</td>
</tr>
<tr>
<td>Japan</td>
<td>1.5</td>
<td>0.7</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>UK</td>
<td>1.7</td>
<td>1.5</td>
<td>-0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Canada</td>
<td>3.0</td>
<td>2.1</td>
<td>1.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Emerging Market &amp; Developing Economies</strong></td>
<td>4.6</td>
<td>4.9</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>China</td>
<td>6.8</td>
<td>6.5</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>India</td>
<td>6.7</td>
<td>7.4</td>
<td>-0.5</td>
<td>-0.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.7</td>
<td>1.5</td>
<td>0.5</td>
<td>-0.2</td>
</tr>
<tr>
<td>Mexico</td>
<td>2.1</td>
<td>1.9</td>
<td>0.4</td>
<td>-0.1</td>
</tr>
<tr>
<td>Russia</td>
<td>1.8</td>
<td>1.6</td>
<td>0.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>
## IMF Inflation Outlook

**October 2017**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>Change from April 2017 forecast 2017</th>
<th>Change from April 2017 forecast 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3.2</td>
<td>3.2</td>
<td>-0.3</td>
<td>-0.1</td>
</tr>
<tr>
<td>Advanced economies</td>
<td>1.5</td>
<td>1.9</td>
<td>-0.4</td>
<td>-0.1</td>
</tr>
<tr>
<td>United States</td>
<td>1.8</td>
<td>2.3</td>
<td>-0.6</td>
<td>-0.3</td>
</tr>
<tr>
<td>Euro area</td>
<td>1.1</td>
<td>1.6</td>
<td>-0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Japan</td>
<td>0.1</td>
<td>0.6</td>
<td>-0.7</td>
<td>0.0</td>
</tr>
<tr>
<td>UK</td>
<td>2.8</td>
<td>2.6</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Canada</td>
<td>1.6</td>
<td>1.9</td>
<td>-0.5</td>
<td>-0.3</td>
</tr>
<tr>
<td>Emerging Market &amp; Developing Economies</td>
<td>4.5</td>
<td>4.2</td>
<td>-0.3</td>
<td>-0.1</td>
</tr>
<tr>
<td>China</td>
<td>2.3</td>
<td>2.4</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>India</td>
<td>4.5</td>
<td>4.8</td>
<td>-0.4</td>
<td>-0.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.6</td>
<td>4.0</td>
<td>-0.8</td>
<td>-0.5</td>
</tr>
<tr>
<td>Russia</td>
<td>4.0</td>
<td>4.0</td>
<td>-0.4</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Demographic changes

Working age population (15-64) as share of total (world)

Country peaks

Euro area: 1990 (0.68)
Japan: 1992 (0.70)
U.S.: 2008 (0.68)
China: 2011 (0.74)
Lower oil prices a favorable tailwind for most countries

Percent, deviation from baseline

10% - 90% confidence bounds

China

U.S.
...and today