The First Phase of the U.S. Recovery and Beyond

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Shanghai, China
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Any opinions expressed here are mine and do not necessarily reflect those of other Federal Open Market Committee participants.
Plan For This Talk

- The Nascent Global Recovery
- The U.S. Recovery
- U.S. Financial Markets and Inflation
- Monetary Policy
- Asset price bubbles
The Nascent Global Recovery
Global Growth is Improving

Growth Rate in Real GDP, SAAR, Percent

Source: Barclays Capital Global Economic Weekly.

Canada
0.4, 0.5, 4.5

U.S.
2.8, 4.0, 5.0

Latin America
6.9, 4.6, 4.3

U.K.
-1.2, 1.8, 2.1

EU
1.5, 1.9, 1.4

Russia
1.0, 3.0, 7.0

China
12.0, 9.6, 8.0

India
13.0, 4.0, 6.0

Japan
1.3, 3.6, 1.0

South Africa
0.9, 2.2, 3.0

Australia
0.8, 1.9, 2.6

Global Growth is Improving

India
13.0, 4.0, 6.0
World Real GDP Growth

Year-Over-Year Percent Change

Source: IMF World Economic Outlook, October 2009.
## IMF Growth Forecasts for 2010

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>World Output</strong></td>
<td>5.2</td>
<td>3.0</td>
<td>-1.1</td>
<td>3.1</td>
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<tr>
<td><strong>G-7 Economies</strong></td>
<td></td>
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<td></td>
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<tr>
<td>United States</td>
<td>2.1</td>
<td>0.4</td>
<td>-2.7</td>
<td>1.5</td>
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<td>Germany</td>
<td>2.5</td>
<td>1.2</td>
<td>-5.3</td>
<td>0.3</td>
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<tr>
<td>France</td>
<td>2.3</td>
<td>0.3</td>
<td>-2.4</td>
<td>0.9</td>
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<tr>
<td>Italy</td>
<td>1.6</td>
<td>-1.0</td>
<td>-5.1</td>
<td>0.2</td>
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<tr>
<td>United Kingdom</td>
<td>2.6</td>
<td>0.7</td>
<td>-4.4</td>
<td>0.9</td>
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<tr>
<td>Japan</td>
<td>2.3</td>
<td>-0.7</td>
<td>-5.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Canada</td>
<td>2.5</td>
<td>0.4</td>
<td>-2.5</td>
<td>2.1</td>
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<td><strong>BRIC Economies</strong></td>
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<tr>
<td>Russia</td>
<td>8.1</td>
<td>5.6</td>
<td>-7.5</td>
<td>1.5</td>
</tr>
<tr>
<td>China</td>
<td>13.0</td>
<td>9.0</td>
<td>8.5</td>
<td>9.0</td>
</tr>
<tr>
<td>India</td>
<td>9.3</td>
<td>7.3</td>
<td>5.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Brazil</td>
<td>5.7</td>
<td>5.1</td>
<td>-0.7</td>
<td>3.5</td>
</tr>
</tbody>
</table>

*Source: IMF World Economic Outlook Database, October 2009. (Year-over-Year Percent Change.)*
The U.S. Recovery
U.S. Forecasters: Growth Ahead

Real Gross Domestic Product.
Actual and forecasted, percent change from previous quarter at annual rate.

Source: Bureau of Economic Analysis, Blue Chip Consensus, Macroeconomic Advisers.
U.S. Consumption Is Stabilizing

Real Personal Consumption Expenditures
(Monthly Data. Last observation: Nov. 2009)

Billions of Chained 2005 Dollars

Source: Bureau of Economic Analysis.
U.S. House Prices Are Stabilizing

Three-month percent change, annual rates (Monthly Data. Last observation: Oct. 2009)

Source: Loan Performance/FHFA/S&P.
U.S. Civilian Unemployment Remains High…

U.S. Financial Markets and Inflation
U.S. Credit Spreads Have Narrowed

Bond Spreads to 10-Yr Treasury
(Monthly data. Last Observation: Nov. 2009)

Source: Federal Reserve.
## World Equity Prices Since Trough

<table>
<thead>
<tr>
<th>Country</th>
<th>Peak Date</th>
<th>Trough Date</th>
<th>Peak-Trough % Change</th>
<th>Trough-12/30/2009 % Change</th>
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<tr>
<td><strong>G7 Economies</strong></td>
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<tr>
<td>U.S.</td>
<td>Oct. 09, 2007</td>
<td>Mar. 09, 2009</td>
<td>-54%</td>
<td>61%</td>
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<td>Germany</td>
<td>Jul. 16, 2007</td>
<td>Mar. 06, 2009</td>
<td>-55%</td>
<td>62%</td>
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<td>France</td>
<td>Jun. 01, 2007</td>
<td>Mar. 09, 2009</td>
<td>-59%</td>
<td>56%</td>
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<tr>
<td>Italy</td>
<td>May. 2, 2007</td>
<td>Mar. 03, 2009</td>
<td>-63%</td>
<td>59%</td>
</tr>
<tr>
<td>U.K.</td>
<td>Jun. 15, 2007</td>
<td>Mar. 03, 2009</td>
<td>-49%</td>
<td>55%</td>
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<td>Japan</td>
<td>Jul. 09, 2007</td>
<td>Mar. 10, 2009</td>
<td>-61%</td>
<td>49%</td>
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<tr>
<td>Canada</td>
<td>Jun. 18, 2008</td>
<td>Mar. 09, 2009</td>
<td>-50%</td>
<td>55%</td>
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<td><strong>BRIC Economies</strong></td>
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</tr>
<tr>
<td>Russia</td>
<td>May 19, 2008</td>
<td>Jan. 23, 2009</td>
<td>-80%</td>
<td>188%</td>
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<td>China</td>
<td>Oct. 16, 2007</td>
<td>Oct. 27, 2008</td>
<td>-72%</td>
<td>101%</td>
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<tr>
<td>India</td>
<td>Jan. 08, 2008</td>
<td>Mar. 11, 2009</td>
<td>-61%</td>
<td>113%</td>
</tr>
<tr>
<td>Brazil</td>
<td>May 20, 2008</td>
<td>Oct. 27, 2008</td>
<td>-60%</td>
<td>133%</td>
</tr>
</tbody>
</table>

U.S. Inflation Remains Low…

PCE Inflation
Year-over-year percent change

Source: Bureau of Economic Analysis/Macroeconomic Advisers.
Monetary Policy
Three Parts to U.S. Current Monetary Policy

- Liquidity programs: lending on collateral to mitigate the panic.
- A near-zero interest rate policy.
- An asset purchase program, “quantitative easing.”
U.S. Liquidity Programs Naturally Tapering Off

Short-term Lending to Financial Firms and Markets:
- Repurchase Agreements- Triparty
- Term Auction Credit
- Commercial Paper Funding Facility
- Central Bank liquidity swaps
- Net Portfolio Holdings of LLCs Thru MMIFF
- Other Loans Less Loan to AIG
- Other Assets

Source: Federal Reserve.
Near-Zero Policy Rates in the G-7

Composition of Federal Reserve Assets
(Weekly Data. Last Observation: Dec. 30, 2009)

Billions $

Source: Federal Reserve.
The Asset Purchase Program

The Committee announced an intention to buy up to $1.725 trillion in assets by 2010 Q1.

- Considered successful as quantitative easing.
- Causing a large and persistent increase in the monetary base ...
- ... and a medium-term inflation risk.

The FOMC asset purchase program does not have a state-contingent character.

Main issue: How to adjust the asset purchase program going forward and not generate inflation?
Timeline of Monetary Policy

Traditional Policy
Rate Adjustment

Large Scale Asset Purchase Program

“Extended Period”?

Resumption of Traditional Policy Rate Adjustment

12/08
3/10

10/08
02/10

Liquidity Programs
Asset Price Bubbles
Two decades, two “bubbles”

- Monetary policy necessarily affects asset prices and interest rates.
- Historically, this did not appear to create prolonged run-ups in asset prices.
- But changes in the recovery of employment in the past two recessions led the Fed to keep interest rates low for a long time.
- Both periods featured prolonged increases in certain asset prices: for technology in the 1990s, and for housing in the 2000s.
- The drag on the economy from the housing decline since 2006 has been especially severe.
U.S. Housing Bubble: 2001-2008

Index: 2001=100

S&P/Case-Shiller Home Price Index:
U.S. National 2001=100

Nominal GDP 2001=100

Source: S&P, Fiserv, MacroMarkets LLC, and Bureau of Economic Analysis.

Index: 1994 =100

NASDAQ Composite
1994=100

Nominal GDP
1994=100


Index: 1984=100

Nikkei 225
Average
1984=100

Japan: Nominal GDP
1984=100

Source: Wall Street Journal, Financial Times, IMF.
Monetary policy outcomes

Still, monetary policy outcomes during the past two decades up to the current crisis have been good.

Unemployment hit lows of 3.8 percent in 2000, and 4.4 percent in 2007.

Inflation has been low and stable through this period.

If policy was too low for too long in the 1990s and in the 2000s, why didn’t we see more inflation?

Yet, without an increase in inflation, asset price misalignments seem to have caused significant problems for the macroeconomy.

This may mean that monetary policy should put more weight on asset prices going forward.
Summary for Asset Price Bubbles

- Asset price "bubbles" are a very serious issue for monetary policy.
- This issue has been debated extensively over the past 15 years, but the debate will now intensify.
- The main problem: It is hard to see what was “wrong” with previous policy, given conventional ideas about what policy is trying to accomplish.
Federal Reserve Bank of St. Louis
stlouisfed.org

Federal Reserve Economic Data (FRED)
research.stlouisfed.org/fred2/

James Bullard
research.stlouisfed.org/econ/bullard/