Overview
### G-20: Comparative population, economic and financial information

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of world total (%)</th>
<th>GDP per Capita (US$)</th>
<th>Financial assets to GDP ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>GDP</td>
<td>Financial assets</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>0.6</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Australia</td>
<td>0.3</td>
<td>1.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.8</td>
<td>2.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Canada</td>
<td>0.5</td>
<td>2.5</td>
<td>2.9</td>
</tr>
<tr>
<td>China</td>
<td>19.8</td>
<td>7.2</td>
<td>5.1</td>
</tr>
<tr>
<td>Egypt</td>
<td>1.1</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>EU27</td>
<td>7.4</td>
<td>30.5</td>
<td>31.7</td>
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<tr>
<td>France</td>
<td>0.9</td>
<td>4.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Germany</td>
<td>1.2</td>
<td>6.1</td>
<td>5.4</td>
</tr>
<tr>
<td>India</td>
<td>17.9</td>
<td>2.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.4</td>
<td>0.8</td>
<td>0.2</td>
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<tr>
<td>Italy</td>
<td>0.9</td>
<td>3.8</td>
<td>3.4</td>
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<tr>
<td>Japan</td>
<td>1.9</td>
<td>8.2</td>
<td>15.4</td>
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<tr>
<td>Mexico</td>
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<td>1.8</td>
<td>0.5</td>
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<tr>
<td>Russia</td>
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<td>2.8</td>
<td>1.3</td>
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<tr>
<td>Saudi Arabia</td>
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<td>0.2</td>
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<tr>
<td>South Africa</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
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<tr>
<td>South Korea</td>
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<td>1.5</td>
<td>1.0</td>
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<tr>
<td>Turkey</td>
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<td>0.4</td>
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<tr>
<td>U.K.</td>
<td>0.9</td>
<td>4.4</td>
<td>4.7</td>
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<tr>
<td>U.S.</td>
<td>4.6</td>
<td>23.7</td>
<td>30.7</td>
</tr>
<tr>
<td>G-20 total</td>
<td>65.8</td>
<td>68.3</td>
<td>93.8</td>
</tr>
</tbody>
</table>

**World**

- Population: 6.7 million
- GDP: $60 trillion
- Financial assets: $239 trillion
<table>
<thead>
<tr>
<th></th>
<th>Financial assets</th>
<th>Bank assets</th>
<th>Bonds outstanding</th>
<th>Public bond</th>
<th>Private bond</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.3</td>
<td>0.0</td>
<td>0.2</td>
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<tr>
<td>Australia</td>
<td>1.3</td>
<td>1.0</td>
<td>1.3</td>
<td>0.4</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.6</td>
<td>1.7</td>
<td>1.2</td>
<td>1.9</td>
<td>0.7</td>
<td>1.7</td>
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<tr>
<td>Canada</td>
<td>2.9</td>
<td>3.6</td>
<td>1.8</td>
<td>2.4</td>
<td>1.5</td>
<td>2.9</td>
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<tr>
<td>China</td>
<td>5.1</td>
<td>5.8</td>
<td>2.7</td>
<td>4.5</td>
<td>1.6</td>
<td>8.1</td>
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<tr>
<td>Egypt</td>
<td>0.2</td>
<td>0.2</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
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<td>France</td>
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<td>5.5</td>
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<td>4.3</td>
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<td>Germany</td>
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<td>6.6</td>
<td>5.2</td>
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<tr>
<td>India</td>
<td>0.8</td>
<td>0.7</td>
<td>0.6</td>
<td>1.2</td>
<td>0.2</td>
<td>1.9</td>
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<tr>
<td>Indonesia</td>
<td>0.2</td>
<td>0.3</td>
<td>0.1</td>
<td>0.2</td>
<td>0.0</td>
<td>0.3</td>
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<tr>
<td>Italy</td>
<td>3.4</td>
<td>2.5</td>
<td>5.4</td>
<td>6.3</td>
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<td>1.5</td>
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<td>Japan</td>
<td>15.6</td>
<td>18.2</td>
<td>13.9</td>
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<td>9.3</td>
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<td>Mexico</td>
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<td>0.7</td>
<td>0.4</td>
<td>0.7</td>
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<tr>
<td>Russia</td>
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<td>1.2</td>
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<td>0.3</td>
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<td>South Africa</td>
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<td>South Korea</td>
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<td>1.2</td>
<td>1.1</td>
<td>1.2</td>
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<tr>
<td>Turkey</td>
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<td>0.5</td>
<td>0.3</td>
<td>0.7</td>
<td>0.0</td>
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<td>U.K.</td>
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<td>2.6</td>
<td>6.1</td>
<td>5.4</td>
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<td>U. S.</td>
<td>31.1</td>
<td>25.5</td>
<td>37.1</td>
<td>25.0</td>
<td>44.6</td>
<td>34.0</td>
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<tr>
<td>G-20 total</td>
<td>94.8</td>
<td>92.4</td>
<td>97.1</td>
<td>97.0</td>
<td>97.1</td>
<td>90.6</td>
</tr>
<tr>
<td>World (US$ trillion)</td>
<td>239.4</td>
<td>122.3</td>
<td>82.6</td>
<td>31.5</td>
<td>51.0</td>
<td>34.5</td>
</tr>
</tbody>
</table>
G-20 countries play a dominate role globally

<table>
<thead>
<tr>
<th>G-20 share of world total (2009)</th>
<th>Population</th>
<th>65.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>88.3%</td>
<td></td>
</tr>
<tr>
<td>Financial assets</td>
<td>93.8%</td>
<td></td>
</tr>
<tr>
<td>• Bank assets</td>
<td>92.4%</td>
<td></td>
</tr>
<tr>
<td>• Bonds</td>
<td>97.1%</td>
<td></td>
</tr>
<tr>
<td>• Equity</td>
<td>90.6%</td>
<td></td>
</tr>
</tbody>
</table>

**World financial assets, 2009**  
$239 trillion

- Equity, $35 trillion, 14.4%
- Bank assets, $122 trillion, 51.1%
- Bonds, $83 trillion, 34.5%

**G-20 financial assets, 2009**  
$224 trillion

- Equity, $31 trillion, 13.9%
- Bank assets, $113 trillion, 50.3%
- Bonds, $80 trillion, 35.7%

Sources: IFS, BIS, S&P, Milken Institute.
Five countries with the biggest population, GDP and financial systems

2009

Population
World total = 6.7 billion

- U.S.: 5%
- Japan: 2%
- U.K.: 1%
- Germany: 1%
- China: 20%
- Other G-20s: 37%
- Rest of the world: 34%

GDP
World total = $60 trillion

- U.S.: 24%
- Japan: 8%
- U.K.: 4%
- Germany: 6%
- China: 7%
- Other G-20s: 39%
- Rest of the world: 12%

Financial assets
World total = $239 trillion

- U.S.: 31%
- Japan: 16%
- U.K.: 7%
- Germany: 5%
- China: 20%
- Other G-20s: 37%
- Rest of the world: 5%

Sources: IFS, BIS, S&P, Milken Institute.
Five countries with the biggest financial systems

2009

**Bank assets**
World total = $122 trillion

- U.S.: 26%
- Other G-20s: 29%
- Rest of the world: 8%
- U.K.: 8%
- Japan: 18%
- China: 6%
- Germany: 5%

**Bonds outstanding**
World total = $83 trillion

- U.S.: 37%
- Other G-20s: 32%
- Rest of the world: 3%
- U.K.: 5%
- Japan: 14%
- China: 3%
- Germany: 6%

**Equity markets**
World total = $35 trillion

- U.S.: 34%
- Other G-20s: 31%
- Rest of the world: 10%
- U.K.: 5%
- Japan: 9%
- China: 8%
- Germany: 3%

Sources: IFS, BIS, S&P, Milken Institute.
Change in the world economic power

China and India are larger in the world economy

Real GDP (PPP dollars), share of world total

Sources: International Monetary Fund, The Milken Institute.
World Economy
World real GDP growth in 2009

Annual percent change

Source: International Monetary Fund.
World real GDP growth in 2010

Annual percent change

Source: International Monetary Fund.
Global real GDP growth

World real GDP growth is projected to grow by 4.2% in 2010

Source: World Economic Outlook, International Monetary Fund, April 2010 update.
World growth took a sharp, synchronized dip in 2009 and is recovering slowly

Sources: IMF, The Economist.
<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010F</th>
<th>2011F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>World</strong></td>
<td>-0.6</td>
<td>4.2</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Advanced economies</strong></td>
<td>-3.2</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>United States</td>
<td>-2.4</td>
<td>3.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Japan</td>
<td>-5.0</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>-4.9</td>
<td>1.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Euro area</td>
<td>-4.1</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Emerging and developing economies</strong></td>
<td>2.4</td>
<td>6.3</td>
<td>6.5</td>
</tr>
<tr>
<td>Brazil</td>
<td>-0.2</td>
<td>5.5</td>
<td>4.1</td>
</tr>
<tr>
<td>China</td>
<td>8.7</td>
<td>10.0</td>
<td>9.9</td>
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<tr>
<td>India</td>
<td>5.7</td>
<td>8.8</td>
<td>8.4</td>
</tr>
<tr>
<td>Russia</td>
<td>-7.9</td>
<td>4.0</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Global economic forecasts

Emerging market economies will lead the world growth

Real GDP growth forecasts by key countries/regions (average 2010-2014)

Source: Economist Intelligence Unit.
Many countries have announced plans for a sizable fiscal stimulus.

Note: The figures reflect crisis-related fiscal policy actions introduced to support economic activity. These discretionary measures in 2009 are compared to 2007 (the pre-crisis baseline).

Source: Group of Twenty, International Monetary Fund, March 2009.
Developments in house and stock prices in advanced economies

Average asset price growth in advanced economies

Real house prices (left scale)

Real stock prices (right scale)

Source: World Economic Outlook, International Monetary Fund, October 2009.
House prices rose strongly prior to the crisis

House price appreciated 68-72% in Ireland, New Zealand and Spain

Source: World Economic Outlook, International Monetary Fund, October 2009.
Government capital investments in financial firms

*Most recently available data, as of April 15, 2010 (US$ billions)*

Total outstanding = $479 billion

- United States, $261
- United Kingdom, $94
- Germany, $64
- Netherlands, $15
- Belgium, $17
- Rest of the world, $28

Source: Bloomberg.
World stock market capitalization still 23% below its peak level (as of April 20, 2010)

Highest point: $62.6 trillion on October 31, 2007

Lowest point: $25.6 trillion on March 9, 2009

$48 trillion as of April 20, 2010

Source: Bloomberg.
Global stock indexes

Source: Datastream
Global M&A activity recovering
Quarterly: Q1-2000 — Q1-2010

Source: Dealogic.
Global unemployment is steadily rising

*December 2007 – March 2010*

Percent, seasonally adjusted

Inflation risk ahead?

Percent change of consumer prices (year-to-year)

Source: World Economic Outlook, International Monetary Fund, April 2010 update.
Debt-to-GDP ratios in countries

Debt as % of GDP, 2008

Source: McKinsey.
Deepening global debt crisis

Public deficits as percentage of GDP, 2010

Source: OECD Economic Outlook.
How will the extreme swings in the price of oil affect the Middle East and global security?

Source: Energy Information Administration.

* as of April 14, 2010
Proven oil reserves are concentrated in politically unstable regions

Total proved reserves in 2008: 1.26 trillion gallons

- Middle East: 60%
- Latin America: 11%
- Former Soviet Union: 10%
- Africa: 10%
- Asia Pacific: 3%
- Others: 6%

Source: BP Amoco.
Euro Zone
Fiscal deficit for selected Eurozone countries

General government fiscal balances as percent of GDP

Source: OECD.
Government debt for selected Eurozone countries

General government gross financial liabilities as percent of GDP

Source: OECD.
General government debt to GDP ratio is expected to rise in the next three years.
Unemployment rate in Eurozone on the rise

Unemployment rate, percent (seasonally adjusted)

Sources: Eurostat, Bloomberg.
Interest rates remain low

Target interest rates of central banks

Source: Bloomberg.
Recent rating changes for PIIGS

S&P's foreign currency long-term issuer ratings

- Spain
- Ireland
- Portugal
- Italy
- Greece

Sources: Bloomberg, Milken Institute.
Sovereign ratings for Greece plummeted

Sources: Standard & Poor’s, Fitch Ratings, Bloomberg, Milken Institute.
Declining role of U.S. dollar and rising role of euro

*International debt issuance by currency*

**2000: Total US$6 trillion**
- U.S. dollar: 50.6%
- Euro: 29.5%
- Pound sterling: 7.5%
- Yen: 7.5%
- Other: 1.7%

**2009: Total US$26.1 trillion**
- U.S. dollar: 36.2%
- Euro: 47.5%
- Pound sterling: 8.2%
- Yen: 2.6%
- Others: 5.5%

Source: Bank of International Settlements.
Greek yield spread widens to record

Yield spread between Greek and German 10-year Treasury notes, percentage points

January 2010  February 2010  March 2010  April 2010

Sources: Bloomberg, Milken Institute.
Credit default swap

Senior 5-year CDS, basis points

Sources: DataStream, Milken Institute.
Sharp Increases in Sovereign CDS Spreads

Selected Countries

Sources: Datastream; Milken Institute.
Eurozone’s rising old-age dependency ratio

Projection, 2010 to 2060

Percent

2010 2015 2020 2025 2030 2035 2040 2045 2050 2055 2060

Sources: Eurostat, Milken Institute.
Note: Old-age dependency ratio is calculated as the number of people 65 and older divided by the number of persons aged 15 to 64.
U.S. Economy
A lost decade

The U.S. economy had its worst decade since the 1930s

Real GDP growth (%)

Source: The U.S. Bureau of Economic Analysis.
Unemployment rate near the highest level since Great Depression

Unemployment rate: 10.8% during the 1981-1982 recession
Unemployment rate: 9.7% in March, 2010

8.2 million total job losses

8.2 million workers lost their jobs December 2007- March 2010

Americans’ net worth is down by 12 trillion from its 2007 peak.

Household’s net worth

Pre-recession peak: $65.9 trillion

Fourth quarter, 2009 $54.2 trillion

Source: Federal Reserve.
Deep recession, strong recovery?

Average real GDP growth rates (%) in the four quarters following each recession

<table>
<thead>
<tr>
<th>Periods of Recession</th>
<th>Average Real GDP Growth Rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929-1933</td>
<td>10.9%</td>
</tr>
<tr>
<td>1973-1975</td>
<td>6.2%</td>
</tr>
<tr>
<td>1981-1982</td>
<td>7.8%</td>
</tr>
<tr>
<td>1990-1991</td>
<td>2.6%</td>
</tr>
<tr>
<td>2001</td>
<td>1.9%</td>
</tr>
<tr>
<td>2007-20XX</td>
<td>?</td>
</tr>
</tbody>
</table>

Real GDP grew 10.9% in 1934, the year after the Great Depression ended.

Sources: U.S. Bureau of Economic Analysis; the Milken Institute.
Forecasts of positive real GDP growth rates

Real GDP growth (%)
(Quarterly percentage change, seasonally adjusted at an annual rate)

Note: Composite forecasts are average forecasts of 27 private organizations.
Sources: U.S. Bureau of Economic Analysis; Bloomberg.
U.S. economy beginning to add jobs


Source: BLS.
Stock market crashes

Dow Jones Industrial Average

Percentage lost in value from the peak

- Percentage lost in value from the peak
- Months after the peak

Crash of 1929
- 1973 oil crisis
- 2008 market crash

Source: Bloomberg.
Turnaround stock markets

Source: DataStream.
Stock prices of Wall Street firms have risen significantly from March 2009 lows

*Current: April 16, 2010*

Source: Bloomberg.
Default risk of Wall Street firms has fallen sharply post-crisis

Daily: January 1, 2008 – April 16, 2010

Source: Bloomberg.
Default risk of major Wall Street firms has fallen sharply post-crisis

Current: April 16, 2010

Source: Bloomberg.
Narrowing risk spread

Indicative of the reduced stress in the debt markets

Percentage points

Oct 10, 2008

TED spread

BAA-AAA spread

Note: The TED spread is the difference between 3-month LIBOR rates and the yield on 3-month U.S. Treasury bills.
The BAA-AAA spread is the difference between the interest rates on high-grade and medium-grade corporate bonds.
Sources: Bloomberg, Federal Reserve.
Unprecedented rise in market volatility during the 2008 market crash

Note: VIX is the Chicago Board Options Exchange’s volatility index.
Source: DataStream.
The build-up of excessive leverage

U.S. debt outstanding by sector (as a % of GDP)

% of GDP


Financial sector
Households
Non-financial business
Government

Source: Federal Reserve.
Households are deleveraging

U.S. households need to reduce their debt to more manageable level

U.S. household debt (% of disposable personal income)

Economists see 100% as a sustainable level

Total household debt stood at 123% as of the end of 2009

Source: Federal Reserve.
2009: first time on record that total U.S. household debt fell year-over-year

Annual: 1945 – 2009

2009 = -1.7%
*First annual drop on record dating back to 1945

Source: Federal Reserve.
Home prices may have touched bottom

Quarterly: 1988Q1 – 2009Q4

Sources: S&P/FiServ, NBER.
The saving rate has started to increase following a decades-long decline.

Source: U.S. Bureau of Economic Analysis.
Banks are still pulling back on lending

*No bank lending, no recovery*

Lending by the U.S. commercial banks fell by 7.5% in 2009

Note: The data are loan balances (net loans and leases) of all U.S. commercial banks.
Source: Quarterly Banking Profile, Federal Deposit Insurance Corporation.
President Obama's budget will generate nearly $10 trillion in budget deficits over the next 10 years.

US$9.761 trillion total deficit from 2011 to 2020

Source: Congressional Budget Office (CBO).
National debt will reach 90% of GDP in the next decade.

Source: Congressional Budget Office (CBO).
U.S. current account deficit

Source: The U.S. Bureau of Economic Analysis.
The U.S. dollar

Source: Federal Reserve.
How to tighten monetary policy?

Total assets of Federal Reserve banks

12/17/2008: $2.312 trillion
3/19/2009: $2.286 trillion

How to shrink Fed’s balance sheet by $1.3 trillion?

• Higher interest rates
• Reverse repurchase agreements
• Term deposit facility
• Others?

Sources: Federal Reserve, Milken Institute.
Fast growing asset-backed securities prior to the market’s collapse in 2008

U.S. issues of asset-backed securities (ABS) by asset type

- **Student Loans**
- **CBOs & CLOs**
- **Manufactured Housing**
- **Home Equity**
- **Equipment**
- **Credit Cards**
- **Auto**

**Note:**
CBOs = Collateralized bond obligations; CLOs = Collateralized loan obligations.

**Source:** Securities Industry and Financial Market Association, SIFMA.
Fast growing mortgage-backed securities prior to the market’s collapse in 2008

U.S. issues of non-agency mortgage-backed securities (MBS)

Source: Securities Industry and Financial Market Association, SIFMA.
Common credit default swap transaction

**Protection seller**
- Does not usually own underlying bond
- Selling bond protection

Credit default swap premium paid periodically

If credit event occurs, delivers the bond.

**Protection buyer**
- May not own underlying bond
- Purchasing bond protection

Payment if credit event occurs.

*Source: Robert Pozen, Too big to save? How to fix the U.S. financial system, 2010.*
Credit default swaps
*Notional amounts outstanding*

Credit default swaps, notional amounts outstanding

Financial industry once again accounting for large portion of corporate profits

Quarterly: 2001Q1 — 2009Q4

Source: BEA.
Structured finance staging a comeback?

Quarterly: Q1-2007 — Q1-2010

Source: SIFMA.
Will/should CDO market return?
Quarterly: Q1-2005 — Q1-2010

Source: SIFMA.
U.S. M&A activity beginning to strengthen
Quarterly: Q1-2000 — Q1-2010

Source: Dealogic.
Hedge fund returns: what a difference a year makes

2009 Hedge Fund Strategy Returns
- Convertible Arbitrage
- Emerging Markets
- Fixed Income Arbitrage
- Multi-Strategy
- Event Driven
- Equity Long Short
- Broad Hedge Fund Index
- Global Macro
- Equity Market Neutral
- Managed Futures
- Dedicated Short

2008 Hedge Fund Strategy Returns
- Managed Futures
- Dedicated Short
- Global Macro
- Event Driven
- Broad Hedge Fund Index
- Equity Long Short
- Multi-Strategy
- Fixed Income Arbitrage
- Emerging Markets
- Convertible Arbitrage
- Equity Market Neutral

Source: Credit Suisse/Tremont Hedge Fund Index.
U.S. Financial Meltdown
Overview

Factors that contributed to housing credit boom and bust

• Lax monetary policy and global imbalances
• Reach for yield, short-term wholesale funding and risky/substantial leverage
• Financial innovation
• Opacity
• Procyclicality of regulation and mark-to-market accounting
• Too big to fail
• Incentive/compensation system
• Public policy
• Flight to safety
U.S. housing market:
Most mortgage debt is prime and securitized

Total value of housing stock = $18.2 trillion

Mortgage debt $10.3 trillion
- Prime 93.3%
- Subprime 6.7%

Equity in housing stock $7.9 trillion
- Non-securitized 38%
- Securitized 62%
- Government-controlled 52%
- Private sector-controlled 48%

Sources: Federal Reserve, Inside Mortgage Finance, Milken Institute.
Note: Residential and commercial mortgages totaled $14.3 trillion at year-end 2009.
The U.S. mortgage problem in perspective: most mortgages are being paid on time, but foreclosures are rising

80.2 million houses
25.7 million or 32.0% are paid off

54.5 million have mortgages
47.1 million or 86.5% are paying on time

7.4 million are behind
13.5% of 54.5 million with 4.3% in foreclosure

Note: The data are for Q2 2009.
Sources: U.S. Census, Freddie Mac, Mortgage Bankers Association, Milken Institute.
I. Low interest rates and a credit boom
II. Homeownership and prices take off
III. Subprime borrowers and subprime mortgages grow in importance
IV. Mortgage product innovation
ARM hybrids dominate subprime originations: makes mortgages initially more affordable for more people

2006

Prime conventional

- ARM hybrids 23%
- Fixed 70%
- Other ARM 7%

Subprime

- ARM hybrids 46%
- Fixed 9%
- Other ARM 4%
- 2- and 3-year hybrids 61%
- 30-year ARM balloon with 40- to 50-year amortizations 26%

Alt-A

- ARM hybrids 46%
- Fixed 31%
- Other ARM 23%

Sources: Freddie Mac, Milken Institute.
V. Securitization
The mortgage model switches from originate-to-hold to originate-to-distribute: risk shifted as securitization takes off

Sources: Federal Reserve, Mortgage Bankers Association, Moody’s Economy.com, Milken Institute.
VI. Affordability
Ratio of home price to household income surges

Median home price/median household income

- 2005: 4.69
- 2008: 3.89
- Average, 1968–2008: 3.39

Debt-to-income ratio of households has increased rapidly

Percent, household debt/disposable personal income

- Q4 2007: 136%
- Average, 1957–2008: 77%

Home mortgage share of household debts reaches a new high in 2007

Percent, home mortgage/total household debts

- Q1 2009: 73.97%
- Q2 2009: 73.94%
- Average, 1952–Q2 2009: 64.4%

Sources: U.S. Census Bureau, OFHEO, Federal Reserve, Moody’s Economy.com, Milken Institute.
VII. Collapse
Unfortunately, home prices don’t go up forever: in 40 percent of the years they actually fell.
Home prices don’t go up forever

Change in home prices in 100-plus years: prices fell in 40% of years

Average, 1890–June 2009: 3.5%

Sources: Robert Shiller, Milken Institute.
VIII. Delinquencies and foreclosures
Subprime mortgages accounted for half or more of foreclosures since 2006

Number of home mortgage loan foreclosures started (annualized rate in thousands)

Q3 2009
Subprime: 10.5% of loans serviced

Sources: Mortgage Bankers Association, Milken Institute.
Subprime ARMs have the worst default record

Home mortgage loans delinquent or in foreclosure (percent of number)

Q3 2009
- Subprime ARM: 45.7%
- Subprime FRM: 22.4%
- FHA and VA: 9.1%
- Prime: 5.9%

Sources: Mortgage Bankers Association, Milken Institute.
Nearly 1 in 4 homeowners underwater

States with negative equity share > 20% as of Q4: 2009

Note: The data only include properties with a mortgage.
Source: First American CoreLogic.
IX. Credit crunch and liquidity freeze
Market for liquidity freezes as banks stopped lending to one another

Spread between 1-month LIBOR and OIS

1-month LIBOR-OIS spread, basis points

- EESA passed
- CPP + TLGP
- Wachovia
- FannieMae/Freddie Mac
- Washington Mutual
- AIG
- Lehman Brothers
- Rescue plan for Citigroup announced
- Bear Stearns
- IndyMac
- Beginning of credit crisis
- ARRPassed
- Stress test results released


Sources: Bloomberg, Milken Institute.
X. What went wrong
Development of finance theory

- **1936**: John Maynard Keynes's book: *the General Theory of Employment, Interest and Money*
- **1952**: The theory of optimal portfolio selection (Harry Markowitz)
- **1958**: The Modigliani-Miller capital structure proposition
- **1965, 1970**: Efficient market hypothesis emerged as a prominent theory (Eugene F. Fama)
- **1961-62, 1964-65**: CAPM (Treynor, Sharpe and Linter)
- **1973**: Option pricing (Black-Scholes and Merton)
- **1976**: Arbitrage pricing theory, (Stephen A. Ross)
The tails on the distribution curve are fatter than you think

Normal distribution curve

Normal Tail 2.3%  95.4%  Normal Tail 2.3%
Systemic risk: Should regulators have focused on real estate assets or simply individual banks?

### December 2007
**Total loans = $7.9 trillion**

- Residential mortgages: 29%
- Commercial real estate loans: 12%
- Construction loans: 8%
- Commercial and industrial loans: 18%
- Leases: 2%
- Agriculture: 1%
- Other consumer loans: 8%
- Credit cards: 5%
- All other loans: 17%

### December 2008
**Total loans = $7.3 trillion**

- Residential mortgages: 25%
- Commercial real estate loans: 15%
- Construction loans: 6%
- Commercial and industrial loans: 17%
- Leases: 2%
- Agriculture: 1%
- Other consumer loans: 9%
- Credit cards: 6%
- All other loans: 19%

Sources: FDIC, Milken Institute.
When lenders make non-recourse loans heads they lose -- tails they lose

- If prices rise, the borrower keeps the gain
- If prices fall, the borrower can walk, sticking the lender with a long-term depreciating asset
- If interest rates rise, the value of the loan depreciates as the “real” average life of the asset is extended
- If interest rates fall, the borrower prepays
Leverage ratios of selected financial firms

December 2008

Leverage ratio, total assets/common equity

- **Freddie Mac**: 67.9 (June 2008)
- **Fannie Mae**: 21.5 (June 2008)
- **Federal Home Loan Banks**: 23.7
- **Brokers/hedge funds**: 31.6 (June 2008)
- **Savings institutions**: 9.4
- **Commercial banks**: 9.8
- **Credit unions**: 9.1

**Note:** Leverage ratios for Freddie Mac and Fannie Mae are as of June 2008. The two institutions have negative common equities as of December 2008.

**Sources:** FDIC, FHL Banks Office of Finance, National Credit Union Administration, Freddie Mac, Fannie Mae, Milken Institute.
Equity-to-asset ratios of selected financial firms

*December 2009*

**Equity-to-asset ratios**

- **Fannie Mae***: -1.8%
- **Freddie Mac***: -1.6%
- **Brokers/hedge funds**: 4.1%
- **Federal Home Loan Banks**: 4.2%
- **Credit unions**: 9.9%
- **Savings institutions**: 10.8%
- **Commercial banks**: 11.1%

**Sources:** Fannie Mae, Freddie Mac, Federal Reserve, FDIC, FHL Banks Office of Finance, National Credit Union Administration, Milken Institute.

* Leverage ratios for Freddie Mac and Fannie Mae are negative as of December 2009.
When is a AAA not a AAA?

*Multilayered mortgage products*

**High-grade structured-finance CDO**

Mortgage loans

Mortgage bonds

<table>
<thead>
<tr>
<th>AAA</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>11%</td>
</tr>
<tr>
<td>A</td>
<td>4%</td>
</tr>
<tr>
<td>BBB</td>
<td>3%</td>
</tr>
<tr>
<td>BB-unrated</td>
<td>2%</td>
</tr>
</tbody>
</table>

| Senior AAA | 88% |
| Junior AAA | 5%  |
| AA         | 3%  |
| A          | 2%  |
| BBB        | 1%  |
| Unrated    | 1%  |

**Mezzanine structured-finance CDO**

| Senior AAA | 62% |
| Junior AAA | 14% |
| AA         | 8%  |
| A          | 6%  |
| BBB        | 6%  |
| Unrated    | 4%  |

**CDO-Squared**

| Senior AAA | 60% |
| Junior AAA | 27% |
| AA         | 4%  |
| A          | 3%  |
| BBB        | 3%  |
| Unrated    | 2%  |

Sources: International Monetary Fund, Milken Institute.
U.S. government responses to liquidity freeze and credit crunch

• Government/private sector purchases of toxic assets
• Guarantees for selected assets and liabilities
• Capital injections into financial institutions
• Subsidization of loan modifications by financial institutions
• Debt for equity swaps
• Easier monetary policies, including lowering interest rates and quantitative/credit easing
• Coordinated responses by countries (e.g., U.S. and other central banks engage in currency swaps)
XI. Policy lessons from the current crisis and proposals for reform in regulatory oversight
Policy issues from the financial crisis and potential reforms in regulatory oversight

Reforms to prevent / mitigate credit booms and busts

- Reform structure of regulatory system
- **Establish macro-prudential regulation** (i.e., establish a systemic risk regulator or market stability regulator)
- Strengthen regulatory capital requirements
- Create countercyclical regulation (e.g., dynamic capital and/or provisioning regulations)
- **Impose liquidity regulation** to take into account maturity mismatches due to short-term funding of longer-term, illiquid assets
Policy issues from the financial crisis and potential reforms in regulatory oversight

Reforms to prevent / mitigate credit booms and busts

• Establish a regulation that internalizes (taxes) a financial institution’s contribution to systemic risk (to address the too-big-to-fail issue)
• Create greater transparency (e.g., by requiring clearing and settling of credit default swaps through clearinghouses or exchanges, thus providing greater monitoring of exposures and posting of necessary collateral)
• Consider modifying incentive/compensation systems to discourage excessive risk taking
Policy issues from the financial crisis and potential reforms in regulatory oversight

*Reforms to prevent / mitigate credit booms and busts*

- Consider establishing greater cooperation among regulators in countries or establish centralized supervision or deposit insurer in some regions.
- Be sure regulatory reforms do not stifle financial innovation.
- Create resolution mechanisms for too-big-to-fail institutions.
- Control risk-taking and lack of enforcement in the public, not just private, sector.
Policy issues from the financial crisis and potential reforms in U.S. regulatory oversight

Reforms to prevent / mitigate credit booms and busts

- Change fee structure for credit rating agencies, eliminate the Nationally Recognized Statistical Rating Organization (NRSRO) designation, and decrease use of ratings in regulatory system
- Consider eliminating treatment of residential mortgages as non-recourse loans (i.e., secured only by the underlying property), merging Freddie Mac and Fannie Mae, and requiring mortgage originators to have “skin in the game”
- Emphasize market discipline more, and more regulations less
Will the current/proposed regulatory structure prevent future crises?

<table>
<thead>
<tr>
<th>Identify emerging systemic risks and improve interagency cooperation</th>
<th>Financial, thrift, and bank holding companies and all firms posing systemic risks</th>
<th>Fannie Mae, Freddie Mac, and Federal Home Loan Banks</th>
<th>Protect consumers across the financial sector from unfair, deceptive, and abusive practices</th>
<th>Credit Unions</th>
<th>Bank Resolution Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Stability Oversight Council (Treasury, Fed, NBS, CFPA, SEC, CFTC, FDIC and FHFA)</td>
<td>Fed</td>
<td>Federal Housing Finance Agency</td>
<td>Consumer Financial Protection Agency (Bureau)</td>
<td>National Credit Union Administration</td>
<td>Bankruptcy judge or FDIC</td>
</tr>
</tbody>
</table>

Notes:
- CFPA: Consumer Financial Protection Agency
- CFTC: Commodity Futures Trading Commission
- FDIC: Federal Deposit Insurance Corporation
- Fed: Federal Reserve
- FHFA: Federal Housing Finance Agency
- FINRA: Financial Industry Regulatory Authority
- GSEs: Government Sponsored Enterprises
- NBS: National Bank Supervisor
- ONI: Office of National Insurance
- OTS: Office of Thrift Supervision
- SEC: Securities and Exchange Commission

- Justice Department
  - Assesses effects of mergers and acquisitions on competition

- Federal courts
  - Ultimate decider of banking, securities, and insurance products

Source: Milken Institute.
Non-depository firms overtake depositories: Should they be regulated like banks?

1970 total = $1.5 trillion
1984 total = $6.9 trillion
2009 total = $57.7 trillion

Sources: Federal Reserve, HedgeFund.net, Milken Institute.
“A trillion here, a trillion there, and pretty soon you are talking about too big to fail.”
Are the biggest banks in the world too big to fail?

*Trillion-dollar banks, ranked by assets, 2009*

<table>
<thead>
<tr>
<th>Bank</th>
<th>Country</th>
<th>Total assets (US$ trillions)</th>
<th>Market cap (US$ billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 BNP Paribas</td>
<td>France</td>
<td>2.9</td>
<td>93</td>
</tr>
<tr>
<td>2 Royal Bank of Scotland</td>
<td>U.K.</td>
<td>2.7</td>
<td>38</td>
</tr>
<tr>
<td>3 HSBC Holdings</td>
<td>U.K.</td>
<td>2.4</td>
<td>178</td>
</tr>
<tr>
<td>4 Mitsubishi UFJ</td>
<td>Japan</td>
<td>2.3</td>
<td>73</td>
</tr>
<tr>
<td>5 Credit Agricole</td>
<td>France</td>
<td>2.2</td>
<td>40</td>
</tr>
<tr>
<td>6 Barclays</td>
<td>U.K.</td>
<td>2.2</td>
<td>66</td>
</tr>
<tr>
<td>7 Bank of America</td>
<td>U.S.</td>
<td>2.2</td>
<td>180</td>
</tr>
<tr>
<td>8 Deutsche Bank</td>
<td>Germany</td>
<td>2.2</td>
<td>48</td>
</tr>
<tr>
<td>9 JPMorgan Chase</td>
<td>U.S.</td>
<td>2.0</td>
<td>179</td>
</tr>
<tr>
<td>10 Citigroup</td>
<td>U.S.</td>
<td>1.9</td>
<td>123</td>
</tr>
<tr>
<td>11 Mizuho Financial</td>
<td>Japan</td>
<td>1.7</td>
<td>32</td>
</tr>
<tr>
<td>12 ICBC</td>
<td>China</td>
<td>1.7</td>
<td>241</td>
</tr>
<tr>
<td>13 ING</td>
<td>Netherlands</td>
<td>1.7</td>
<td>38</td>
</tr>
<tr>
<td>14 Lloyds Banking</td>
<td>U.K.</td>
<td>1.7</td>
<td>64</td>
</tr>
<tr>
<td>15 Banco Santander</td>
<td>Spain</td>
<td>1.6</td>
<td>111</td>
</tr>
<tr>
<td>16 Societe Generale</td>
<td>France</td>
<td>1.5</td>
<td>47</td>
</tr>
<tr>
<td>17 Unicredit</td>
<td>Italy</td>
<td>1.4</td>
<td>58</td>
</tr>
<tr>
<td>18 China Construction Bank</td>
<td>China</td>
<td>1.3</td>
<td>184</td>
</tr>
<tr>
<td>19 Sumitomo Mitsui</td>
<td>Japan</td>
<td>1.3</td>
<td>45</td>
</tr>
<tr>
<td>20 UBS</td>
<td>Switzerland</td>
<td>1.3</td>
<td>60</td>
</tr>
<tr>
<td>21 Bank of China</td>
<td>China</td>
<td>1.3</td>
<td>149</td>
</tr>
<tr>
<td>22 Wells Fargo</td>
<td>U.S.</td>
<td>1.2</td>
<td>162</td>
</tr>
<tr>
<td>23 Commerzbank</td>
<td>Germany</td>
<td>1.2</td>
<td>11</td>
</tr>
<tr>
<td>24 AXA</td>
<td>France</td>
<td>1.0</td>
<td>51</td>
</tr>
</tbody>
</table>

Sources: Bloomberg, Milken Institute.
Note: Market capitalization is from March 19, 2010.
Big banks increasingly dominate the U.S. banking industry; is this a problem?

Asset shares by bank size

1984
Number: 14,484 banks
Assets: $2.5 trillion
- Less than $100 million: 8%
- $100 million to $1 billion: 20%
- $1 billion to $10 billion: 30%
- Greater than $10 billion: 42%

2009
Number: 8,012 banks
Assets: $13.1 trillion
- Less than $100 million: 1%
- $100 million to $1 billion: 11%
- $1 billion to $10 billion: 11%
- Greater than $10 billion: 77%

(107 banks or 1.3% of total number)

Sources: FDIC, Milken Institute.
Five largest banks control almost half of the U.S. national banking assets

**December 31, 2009**

<table>
<thead>
<tr>
<th>Bank</th>
<th>Consolidated assets (US$ billions)</th>
<th>% of total assets of the U.S. banking system</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPMorgan Chase</td>
<td>1,627</td>
<td>13.7</td>
</tr>
<tr>
<td>Bank of America Corporation</td>
<td>1,465</td>
<td>12.4</td>
</tr>
<tr>
<td>Citigroup</td>
<td>1,161</td>
<td>9.8</td>
</tr>
<tr>
<td>Wells Fargo</td>
<td>608</td>
<td>5.1</td>
</tr>
<tr>
<td>Wachovia bank (Wells Fargo)</td>
<td>510</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Total assets of the U.S. banking system</strong></td>
<td><strong>11,846</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td><strong>Top five banks</strong></td>
<td></td>
<td><strong>45.4</strong></td>
</tr>
<tr>
<td><strong>Top ten banks</strong></td>
<td></td>
<td><strong>54.1</strong></td>
</tr>
</tbody>
</table>

*Source: The Federal Reserve.*
Large banks become larger

*Top U.S. banks ranked by total assets*

<table>
<thead>
<tr>
<th>End of 1989</th>
<th>Consolidated assets (US$ billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citicorp</td>
<td>204</td>
</tr>
<tr>
<td>Chase Manhattan</td>
<td>96</td>
</tr>
<tr>
<td>Bank of America</td>
<td>93</td>
</tr>
<tr>
<td>JPMorgan</td>
<td>83</td>
</tr>
<tr>
<td>Security Pacific</td>
<td>78</td>
</tr>
<tr>
<td><strong>Total banking assets</strong></td>
<td><strong>3,128</strong></td>
</tr>
<tr>
<td><strong>Top five banks (% of total banking assets)</strong></td>
<td><strong>17.7%</strong></td>
</tr>
</tbody>
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</tr>
<tr>
<td><strong>Top five banks (% of total banking assets)</strong></td>
<td><strong>45.3%</strong></td>
</tr>
</tbody>
</table>

Source: Federal Reserve; the Banker, July 1990 issue.
Systemic risk: Should regulators have focused on real estate assets or simply individual banks?

December 2007
Total assets = $13.0 trillion

- Construction & land development loans: 5%
- Nonfarm nonresidential loans: 7%
- Mortgage-backed securities: 10%
- 1-4 family residential property loans: 22%
- All other real estate loans & investments in real estate: 3%
- Other assets net of reserves: 53%

Total real estate assets as a percent of total assets: 47%

December 2009
Total assets = $13.1 trillion

- Construction & land development loans: 3%
- Nonfarm nonresidential loans: 8%
- Mortgage-backed securities: 11%
- 1-4 family residential property loans: 20%
- All other real estate loans & investments in real estate: 3%
- Other assets net of reserves: 55%

Total real estate assets as a percent of total assets: 45%

Sources: FDIC, Milken Institute.
Equity, borrowings or deposits; does what funds bank assets matter for regulation?

December 2007
Total = $13.0 trillion

- Uninsured deposits: 32%
- Insured deposits: 33%
- Other borrowed funds: 19%
- Equity capital: 10%
- All other liabilities: 6%

December 2009
Total = $13.1 trillion

- Uninsured deposits: 29%
- Insured deposits: 41%
- Other borrowed funds: 14%
- Equity capital: 11%
- All other liabilities: 5%

Sources: FDIC, Milken Institute.
Reality check: What is the most appropriate capital measure for banks?

**U.S. regulatory capital requirements and selected capital ratios**

<table>
<thead>
<tr>
<th>Category</th>
<th>Core (leverage)</th>
<th>Tier 1 risk-based</th>
<th>Total risk-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well capitalized</td>
<td>&gt;= 5%</td>
<td>&gt;= 6%</td>
<td>&gt;= 10%</td>
</tr>
<tr>
<td>Adequately capitalized</td>
<td>&gt;= 4%</td>
<td>&gt;= 4%</td>
<td>&gt;= 8%</td>
</tr>
<tr>
<td>Undercapitalized</td>
<td>&lt; 4%</td>
<td>&lt; 4%</td>
<td>&lt; 8%</td>
</tr>
<tr>
<td>Significantly undercapitalized</td>
<td>&lt; 3%</td>
<td>&lt; 3%</td>
<td>&lt; 6%</td>
</tr>
<tr>
<td>Critically undercapitalized</td>
<td>Tangible equity capital ratio that is &lt;= 2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: FDIC, Milken Institute.
Resolution: What should be done with holding companies vs. subsidiary banks?

*Ranked by assets, 2009*

<table>
<thead>
<tr>
<th>Name</th>
<th>Total assets (US$ billions)</th>
<th>As a percent of total asset (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Bank assets</td>
</tr>
<tr>
<td>1   Bank of America</td>
<td>2,225</td>
<td>70.5</td>
</tr>
<tr>
<td>2   JPMorgan Chase</td>
<td>2,032</td>
<td>77.1</td>
</tr>
<tr>
<td>3   Citigroup</td>
<td>1,857</td>
<td>58.9</td>
</tr>
<tr>
<td>4   Wells Fargo</td>
<td>1,244</td>
<td>90.8</td>
</tr>
<tr>
<td>5   Goldman Sachs</td>
<td>849</td>
<td>7.0</td>
</tr>
<tr>
<td>6   Morgan Stanley</td>
<td>771</td>
<td>9.4</td>
</tr>
<tr>
<td>7   MetLife</td>
<td>539</td>
<td>4.4</td>
</tr>
<tr>
<td>8   U.S. Bancorp</td>
<td>281</td>
<td>99.0</td>
</tr>
<tr>
<td>9   PNC Financial Services</td>
<td>270</td>
<td>94.2</td>
</tr>
<tr>
<td>10  Bank of New York Mellon</td>
<td>212</td>
<td>81.4</td>
</tr>
<tr>
<td>11  SunTrust Banks</td>
<td>174</td>
<td>95.8</td>
</tr>
<tr>
<td>12  GMAC</td>
<td>172</td>
<td>44.2</td>
</tr>
<tr>
<td>13  Capital One Financial</td>
<td>169</td>
<td>96.8</td>
</tr>
<tr>
<td>14  BB&amp;T Corporation</td>
<td>166</td>
<td>93.5</td>
</tr>
<tr>
<td>15  State Street Corporation</td>
<td>157</td>
<td>97.6</td>
</tr>
<tr>
<td>16  Citizens Financial</td>
<td>148</td>
<td>98.6</td>
</tr>
</tbody>
</table>

Sources: FDIC, Milken Institute.
Given their importance for housing, what is to be done with Fannie Mae and Freddie Mac?

Sources: Freddie Mac, Fannie Mae, FDIC, Milken Institute.
The collapse in the MBS markets is from the private-sector side

Private-label MBS

Ginnie Mae, Fannie Mae, Freddie Mac MBS

Source: Securities Industry and Financial Market Association, SIFMA.
Concentration of derivative contracts

- Credit derivatives
- Futures & forwards
- Options
- Swaps
- Total

Note: Other banks include only U.S. commercial banks with derivatives activity.
Derivatives activity is dominated in few large banks

The top five banks hold 97% of all derivatives (notational amount - $213 trillion)

The notional amount of derivative contracts held by top five U.S. commercial banks, fourth quarter 2009 (% total)

- JPMorgan Chase Bank 36.9%
- Bank of America 20.8%
- Goldman Sachs Bank USA 19.5%
- Citibank National 17.6%
- Other banks 3.1%
- Wells Fargo Bank 2.0%

Note: Other banks include only U.S. commercial banks with derivatives activity.
Derivatives trading can account for billions in Wall Street gains and losses

Q4-2009 trading revenues from cash instruments and derivatives

- Citibank: $1.6 billion
- Bank of America: $369 million
- Wells Fargo: $376 million
- JPMorgan Chase: $573 million
- Goldman Sachs: $1.1 billion

Source: Comptroller of the Currency.
Trading revenues from cash instruments and derivatives as share of gross revenue

Q4-2009 trading revenues from cash instruments and derivatives (as percent of gross revenue)

Source: Comptroller of the Currency.
Additional Slides
Mr & Mrs
ASIA

An extraordinary survey of an extraordinary region
Cultural change in America is coming

*We will spend relatively less on housing and more on education*

<table>
<thead>
<tr>
<th>U.S. consumer spending</th>
<th>Asia consumer spending</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housing</strong></td>
<td><strong>Food</strong></td>
</tr>
<tr>
<td>33%</td>
<td>23%</td>
</tr>
<tr>
<td>Transportation</td>
<td><strong>Education</strong></td>
</tr>
<tr>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Food</td>
<td><strong>Housing</strong></td>
</tr>
<tr>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>Insurance/pensions</td>
<td>Clothing</td>
</tr>
<tr>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>Health care</td>
<td>Other</td>
</tr>
<tr>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Transportation</td>
</tr>
<tr>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>Apparel and services</td>
<td>Health care</td>
</tr>
<tr>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Cash contributions</td>
<td>Communication</td>
</tr>
<tr>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Personal care products</td>
<td></td>
</tr>
<tr>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

Sources: U.S. Bureau of Labor Statistics/CLSA.