The U.S. Economic Outlook

Slower Tightening, Lower Rates Buoy Growth

October, 2015

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Macroeconomic Advisers, LLC

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The MA Forecast from 30,000 Feet

- China’s devaluation and global financial market turmoil raises new downside risks…but forecast little changed
  - Growth effects of higher dollar and lower equities about offset by lower oil prices
  - But dollar and oil reinforce on inflation, so core inflation forecast revised down
  - Uncertainty regarding global growth and risky asset prices raises downside risks

- Domestic final demand growth is solid; better than prev. reported
  - No fiscal restraint, rather a little boost; improved confidence; solid income growth
  - Growth of pvt. domestic final sales: 3.6% in ’14; 3.3% in ’15; 3.6% in ’16
  - Declining net exports, inventory building are drags, especially in 2015

- Unemployment rate undershoots “full employment”
  - Solid employment gains push unemployment rate to 5.0% in ‘15Q4, to 4.7% ’16Q4

- PCE inflation to move to 2%; delayed by $ rise, oil price drop
  - Core PCE: 2014(4/4)=1.4%, 2015=1.4%, 1.7% 2016, 1.9% 2017, 2.0% 2018

- Improving labor market vs. low inflation vs. new risks key to Fed
  - First rate hike in 2015Q4 (December), but it’s a close call
  - Long rates rise on expected policy rate increases and rising term premium

- Equities challenged by global market turmoil & rising rates
Financial Conditions Worsen: Higher Dollar, Lower Equities
Base509 vs. Base507

Source: S&P, Federal Reserve Board, Macroeconomic Advisers; Forecast completed on October 8, 2015
Dollar, Equities and Oil Prices … Oh My!

Price of West Texas Intermediate Crude Oil ($/b)
Base509 vs. Base507

Source: Haver Analytics, Macroeconomic Advisers; Forecast completed on October 8, 2015

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GDP Growth Comparison
Percent change annual rate

Source: Macroeconomic Advisers, LLC; Forecast completed October 8, 2015
Return to Modestly Above-Trend Growth

GDP Growth:

- 2013: 2.5%
- 2014: 2.5%
- 2015: 2.2%
- 2016: 2.5%
- 2017: 2.5%
- 2018: 2.1%

Un. Rate (EOP):

- 2013: 7.0%
- 2014: 5.7%
- 2015: 5.0%
- 2016: 4.7%
- 2017: 4.5%
- 2018: 4.5%

Source: Macroeconomic Advisers; Forecast completed on October 8, 2015
PCE, Housing and BFI Drive Dom. Demand Growth

Growth in Private Domestic Demand Set to Firm

4-qtr percent change

Final Sales to Private Domestic Purchasers

GDP

GDP Growth: 2013 2.5% 2014 2.5% 2015 2.2% 2016 2.5% 2017 2.5% 2018 2.1%
Dom. Pvt. FS 2013 2.6% 2014 3.6% 2015 3.3% 2016 3.6% 2017 3.3% 2018 2.7%

Source: BEA, Macroeconomic Advisers; Forecast completed on October 8, 2015
Fiscal Drag Turns to Boost

Approaching Risk:
Budget battles lie ahead that will raise uncertainty and risk another gov’t shutdown over spending levels and debt ceiling!

Source: Macroeconomic Advisers; Forecast completed on October 8, 2015
Uneven Improvement in Financial Conditions

Credit Availability Still Improving, but Corp. Risk Spreads Widened

Bank’s willingness to make consumer installment loans (left axis)

Baa-20-yr Treas. spread (right axis)

Source: Macroeconomic Advisers, LLC. Forecast completed on October 8, 2015
HH Net Worth Trends Higher – What Correction?

Source: Federal Reserve, Macroeconomic Advisers; Forecast completed on October 8, 2015
Sharply Lower Oil Prices Boost Growth

Energy price declines reduce headline PCE inflation and raise growth of real disposable personal income.

And positive real wealth effects too!

Source: Federal Reserve Board, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
Dollar and Foreign Growth Key to Net Exports

Foreign Growth is Expected to Firm, but Real Dollar Has Risen

4-quarter percent change

Real foreign GDP (left axis)

Real trade-weighted exchange rate (right axis)

Source: Macroeconomic Advisers; Forecast completed on October 8, 2015
Labor Market Continues to Improve

Above-Trend Growth Lifts Employment Ratio & Labor Force Part. Rate

Source: BLS, Macroeconomic Advisers; Forecast completed on October 8, 2015
Labor Market Continues to Improve

Dissipating Slack Allows Rising Growth of Hourly Comp

4-quarter percent change

Growth of hourly compensation

4-quarter percent change

Growth of C/H smoothed*

Unemployment gap

Source: Macroeconomic Advisers; * HP filter; Forecast completed on October 8, 2015

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As Transitory Factors Wane, Inflation Rises to 2%

Key Drivers:
1) Inflation Expectations;
2) Slack;
3) Past Inflation; 4) “Shocks”

NAIRU=5.0, 2015Q4-2018Q4

Source: Macroeconomic Advisers; Forecast completed on October 8, 2015
Core Inflation Still Well Below “Target”

Core PCE Inflation Over Various Horizons

Source: Bureau of Economic Analysis; Last data plotted for August 2015.
Date of First Tightening Approaches

Rising Expected Fed Funds and Normalizing Term Premium
Drive Term Yields Higher... to Still Historically Low Levels

Source: Federal Reserve Board, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
Equities Make Incomplete Recovery

Declining Equity Risk Premium Helps Stocks Weather Rate Increases

Source: Macroeconomic Advisers; Forecast completed on October 8, 2015
Equities are Fairly Valued; Challenges Ahead

S&P 500 Price-Earnings Multiple

Ratio (4-quarter moving average)

History Forecast

Source: S&P, Macroeconomic Advisers; Forecast completed on October 8, 2015
Near-term Growth Accounting

Drag from Inventory Investment Over 2015 & 2016
Change in Private Inventories

Source: Macroeconomic Advisers, LLC. Forecast completed on October 8, 2015
Key +/- Risks & Uncertainty in the Outlook

• China’s growth continues to grind lower…
  …or maybe surprises to the upside

• Europe’s “fix” fails, GREXIT causes slump in markets & growth …
  …could turn out better than markets expect…time heals

• Sharper rise in long rates - slow EM and U.S. more than expected…
  … potential for more resilience if U.S. powers through

• Dollar resumes strong rise as rate differential widens again…
  … strengthening in euro area growth narrows rate differential

• Home price rise fades and starts are WTE under rate increases…
  …could surprise to the upside

• U.S. fiscal follies, gov’t shut down, lurch toward restraint…
  …could all go without a hiccup

• Geopolitical Risks: Ukraine, ISIS, Iran, Korea…
  …tensions and uncertainty would ease if ???
Back-up Slides

### Major Economic Indicators

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<tbody>
<tr>
<td>Key Indicators of Real Activity</td>
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<td>GDP growth (annual)</td>
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<td>2.6</td>
<td>2.7</td>
<td>2.6</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.4</td>
<td>2.3</td>
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<td>1.1</td>
<td>1.2</td>
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<td>1.4</td>
<td>1.5</td>
<td>1.6</td>
<td>1.7</td>
<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
<td>2.2</td>
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<tr>
<td>Unemployment rate</td>
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<td>4.1</td>
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<td>4.4</td>
<td>4.5</td>
<td>4.6</td>
<td>4.7</td>
<td>4.8</td>
<td>4.9</td>
<td>5.0</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
<td>5.4</td>
<td>5.5</td>
<td>5.6</td>
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<tr>
<td>Trade balance</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
<td>1.3</td>
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<td>1.5</td>
<td>1.6</td>
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<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
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### Contributions to growth:

- **Final sales**
  - Residential investment
  - Change in private inventories
  - Net exports of goods & services
  - Exports of goods & services
  - Imports of goods & services
  - Government consumption & gross investment

### Components of real GDP:

- Personal consumption expend.
- Nonres. fixed investment
- Residential investment
- Change in private inventories
- Exports of goods & services
- Imports of goods & services
- Gov't & gross & gross investment

### Other indicators:

- Pat. housing starts (thousands)
- Light vehicle sales (mill. units)
- Industrial production, total
- Industrial production, manufacturing
- Capacity utilization (mths, %)
- Nonfarm payroll employment (mill. units)
- Civilian unemployment rate (%)

### GDP chain-type price index:

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<tr>
<td>CPI all items</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
<td>1.3</td>
<td>1.4</td>
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<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
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<tr>
<td>CPI all Urban</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
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<td>1.8</td>
<td>1.9</td>
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<tr>
<td>PCE price index</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.2</td>
<td>1.3</td>
<td>1.4</td>
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<td>1.8</td>
<td>1.9</td>
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<td>2.1</td>
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<tr>
<td>PCE excl food &amp; energy</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
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<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>CPI food &amp; energy</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
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<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
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<tr>
<td>CPI all items + energy</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
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<td>2.0</td>
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### Financial indicators:

- Federal funds rate
- Yield on 10-Year Treasury Notes (%)
- Broad money stock (millions)
- M3 money supply (millions)
- Wealth index
- Federal Reserve System (000)

### Stock market indicators:

- S&P 500 index level
- S&P 500 index return
- Nasdaq Composite Index
- Dow Jones Industrial Average
- Russell 2000 Index

### Additional indicators:

- International trade
- Capital flows
- Interest rates
- Money supply
- Financial market indicators

### Incomes & Related Measures:

- Corporate profits w/TTA & CCCadj
- Real disposable personal income
- Real disposable income
- Personal saving rate
- Personal income growth
- Personal consumption expenditure
- Personal disposable income
- Personal income growth
- Personal saving rate
- Personal income growth
- Personal saving rate

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Key "Assumptions" of the MA Forecast

- **Fiscal policy assumptions**: Discretionary spending broadly consistent with Bipartisan Budget Act; transition from drag to stimulus; no shutdowns
- **Home prices**: ↑ 5.7% in 2015, ↑ 3.5% in 2016, ↑ 3.3% in 2017, and ↑ 3.0% in 2017
- **S&P 500**: ↓ 4.5% in 2015, ↑ 5.3% in 2016, ↑ 4.5% in 2017, ↑ 1.0% in 2018;
- **Risk spreads** to narrow (Baa spread to 20-yr falls ~130 bps thru 2018.4)
- **Foreign growth**: 2.5% in ’14, 2.0% in ‘15, and 3.0% in ‘16, 3.1% in ‘17, and 2.9% in ‘18
- **Trade-weighted real $** peaks in 15Q4 then falls ~1% thru 2018; **nominal $** peaks in ’15Q4 at 120.7 and remains thru 2018
- **Oil prices** (Brent/WTI) fell to $62/58 in 2015Q2; expected to bottom out at $48/45 in 2015Q4 and then rise to $61/56 by 2018Q4
- **Inflation expectations** remain anchored at 2%
- **Fed**: Rate increases commence December 2015
Lower Oil Prices on Net Boost Growth

Response of PCE to 32% Sustained Gasoline Price Drop

See our *Macro Focus*, “Why Haven’t Consumers Spent the Savings from Lower Gasoline Prices? It’s All About Timing,” May 29, 2015

Source: BEA; Macroeconomic Advisers
Home Price Gains Add to Household NW

Home Prices Continue a Solid, but Slower Recovery

HPI (CoreLogic) 5.1% 5.7% 3.5% 3.3% 3.0%

Source: CoreLogic, Haver Analytics, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
HH Deleveraging Close to Complete?

Household Debt Ratio
(Ratio of Household Sector Debt to Personal Disposable Income)

Source: Federal Reserve; Latest data plotted for 2015.1
Sharp Rise in HH Net Worth and Incomes!

Growth of Personal Consumption Expenditures

4-quarter percent change

PCE Growth

2013  2014  2015  2016  2017  2018

2.3%  3.2%  3.0%  3.3%  2.8%  2.3%

Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
HH’s Ready to Take on More Debt?

Financial Obligations and Delinquency Rate

Source: Federal Reserve Board/Haver Analytics; Last data plotted is 2015Q1 for Fin. Ob. ratio and 2015Q2 for Del. rate.
Including Demand for Light Vehicles

Post-Recession Rise in Light Vehicle Sales Expected To Stall

Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

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Spillover from Still Depressed Employment

Weak Household Formation Holding Back Starts...About to Change?

Source: Census, Haver Analytics, Macroeconomic Advisers; Smoothed is HP filtered; Latest data plotted for 2015.2

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Foreign Growth: A Mixed Bag

Foreign Growth is Expected to Firm, but Real Dollar Has Risen

4-quarter percent change

Real foreign GDP (left axis)

Real trade-weighted exchange rate (right axis)

Source: Macroeconomic Advisers; Forecast completed on October 8, 2015
Net Exports Buffeted by Shifting Winds

Exports, Imports, and Net Exports

Billions of chain-type (2009) dollars

4-quarter percent change

Imports (right axis)

Exports (right axis)

Net Exports (left axis)

Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
CapEx: Restrained, but with Upside Risk?

Growth of Nonresidential Fixed Investment

Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
CapEx: Restrained, but with Upside Risk?

Growth of Capital Services per Worker

Source: Macroeconomic Advisers;

October 2015
Factors For and Against Stronger Growth

- Swing from significant fiscal drag to neutral or slight boost
- Normal cyclical dynamics
- Receding uncertainty: return of risk appetite & confidence
- Uneven (through time) improvement in financial conditions
  - Easing credit terms, rising equities (interrupted) & shrinking spreads
  - Slowing pace of de-leveraging
- Rising home prices and favorable long-term demographics
- Low natural gas prices and oil prices
- Gradually firming global growth

Versus

- Rise in dollar, recent slump in equities & tight mort. credit
- Still “weak” household formation rate
- Other headwinds & risks (Euro area, Ukraine, China, EM…)
Inflation Risks “Balanced” Around a Path to 2%

• In the post-GR period, core PCE inflation has come in somewhat higher than expected by a traditional PC.
  – Inflation expectations appear to be playing an important role in preventing more disinflation than has occurred.
  – Downward nominal wage rigidity might also have played a role.
  – Past commodity price increases (at time of high unemployment) may have helped lessen extent of disinflation.
  – Short-run Phillips curve is very flat.

• Slack is imperfectly measured. Uncertainty regarding most relevant measure for inflation...or where is NAIRU.

• Recent plunge in oil prices and sharp rise in dollar suggests softer near-term headline & core PCE inflation!
Housing Restrained by Tight Mortgage Credit

Hint of a Turn in Mortgage Lending Standards?

Source: Federal Reserve Board; Latest data is for 2015Q3.
CapEx: Oil Price Decline Poses Downside Risk
Sharply Improving Energy Production …

U.S. Crude and Natural Gas Production

Source: US EIA; Data are 12-month moving average; Last Data plotted for May 2015
Petro Production Rise Aids Current Account

U.S. Goods Balance

Source: Census Bureau; SA, annual rate
...and Low Natural Gas Price Advantages U.S.

Shale Gas Revolution Lowers U.S. Price of Natural Gas

Source: US EIA; Latest data plotted for July 2015
Cyclical Rise in Revenues = Spending Growth

State and Local Current Revenues and Expenditures

Billions of dollars, 4-quarter change

Source: Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015
Cyclical Rise in Revenues + Spending Restraint

Federal Deficit Improves Slightly Over the Near-term Before Heading South

Source: Macroeconomic Advisers, LLC. Forecast completed on October 8, 2015
Tracing the Effects of Dollar Appreciation

# Tracing the Effects of Dollar Appreciation

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<th>Key Elasticities in the Trade Sector of MA/US 2014</th>
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<td></td>
<td>$ Elasticities</td>
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<td>Import Prices</td>
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<tr>
<td>Non-Petro Goods</td>
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<td>Petroleum</td>
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<td>Services</td>
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<td>Composite*</td>
<td>-0.30</td>
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*Calculation of the composite includes zero response in petro import prices and volumes.

"Static" Impact of Sustained 10% Real Appreciation in Broad Trade-Weighted Dollar

Breaking Through to Escape Velocity

- Animal Spirits
  - Shinks Tail Risks
    - Aggressive Policy Support
      - Reduces Uncertainty
        - Improves Risk Appetite
          - Lowers Risk-Free Rate
            - Raises Prices of Risk Assets
              - Aids Credit Availability
                - Strengthens Balance Sheets
                  - On-going Deleveraging
                    - Raises Hiring and CapEx
                      - Aids HH and Bus. Spending
                        - Aids Credit Availability

Waxing/Waning Uncertainty & Growth

Emerging Tail Risks Shift the Distribution Leftward

Then “most likely” forecast

Severe re-intensification of EZ crisis

Or Ryan Budget?

Then EZ splinters

“Normal” times