Presentation
by
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to
The Texas Municipal Retirement System
U.S. Personal Saving Rate and Household Debt (consumer plus mortgage) as a % of Disposable Personal Income

Last Points 4Q 2015- Saving Rate, 5.4%; HH Debt, 104.7%

Source: Bureau of Economic Analysis; Federal Reserve
Corporate Profits and Employee Compensation as a percentage of National Income

Source: Bureau of Economic Analysis

Last Points 4Q 2015 - Corp. Profits: 12.1%, Employee Comp: 62.6%
Real Weekly Wages and Household Incomes

year/year percent changes

Last Points 2014- Income: -1.5%, Wages: 1.0%

Avg. Real Weekly Wages of Production and Supervisory Employees
Real Median Household Income

Source: Bureau of Labor Statistics; Census Bureau
Central Bank Assets
change since January 2007

Source: Bloomberg; The Central Banks
S&P 500 Index

Last Point 05/16/16: 2,066.66

Source: Thomson Reuters
Reuters/Jefferies CRB Index

Last Point 05/16/16: 184.58

Source: Haver Analytics, Thomson Reuters
Chinese Real Gross Domestic Product
year/year percent change

Last Point 1Q 2016: 6.7%

Source: Bloomberg; Chinese National Bureau of Statistics
Chinese Exports
year/year percent change

Last Point April 2016: -1.8%

Source: China General Administration of Customs
Chinese Total Debt as a Share of GDP
includes corporate, household, government and bank debt

Last Point 2015: 246.8%

Source: Bloomberg
United States Manufacturing Value Added as % share of GDP

Last Point 3Q 2015: 12.1%

Source: Bureau of Economic Analysis; The World Bank
Euro and Yen Exchange Rates

Last Points 05/16/16 - USD/EUR: 1.132; JPY/USD: 109.01

Source: Thomson Reuters
Total Oil Output for Non-OPEC and OPEC Countries

million barrels per day

Last Points 3Q 2015 - Non-OPEC: 58.68; OPEC: 37.71

Source: Energy Information Administration
Brent and WTI Crude Oil Prices
dollars per barrel; nearest futures contracts

Last Points 05/16/16 - Brent: $48.97; WTI: $47.72

Source: Thomson Reuters
Oil Breakeven Price for Major Petrostates

$ per barrel


*Breakeven price needed in order to balance the national budget.

Current Brent Crude, $/barrel: $48.97

Source: Bloomberg; The Wall Street Journal
Saudi Arabia Foreign Exchange Reserves
billion USD

Source: Bloomberg; International Monetary Fund

Last Point March 2016: $587.08
United States Crude Oil Production
million barrels per day

Source: Energy Information Administration

Last Points 05/06/16: 8.80
Crude Oil Rotary Rig Count and Average Oil Production Per Rig

Source: Bloomberg; Baker Hughes

Last Points April 2016: Rigs, 332; Oil Prod., 475

Rig Count - left axis
Average Oil Production Per Rig (barrels/day) - right axis

Source: Bloomberg; Baker Hughes
# A Successful Cartel

1. Involves a commodity that can otherwise be left in the ground, avoiding production and inventory costs until it’s needed.

2. Its product is so much in demand that buyers are relatively insensitive to price.

3. The commodity has few if any close substitutes.

4. It includes most of the low-cost suppliers and has few meaningful non-cartel competitors.

5. It involves relatively few cartel members, thereby promoting discipline.

6. It's sponsored by governments and even religious authorities that benefit from the cartel and protect it.

7. It operates in a period of strong economic growth and robust demand for the product.

8. It faces few technological improvements in the industry.
## Unfavorable Climate for OPEC

1. Alternatives to oil, especially natural gas but also government-subsidized renewables, are growing.

2. Non-OPEC supplies are leaping, notably from Russia and especially American frackers.

3. Infighting among OPEC members has destroyed discipline.

4. Global economic growth is weak, and the ongoing shift from goods production to services in China and elsewhere is curbing oil demand.

5. Conservation is limiting oil demand.

6. Rapid technological advances in fracking, horizontal drilling, deep-water and Arctic drilling, etc. are mushrooming non-OPEC supplies at low and declining costs.
World Crude Oil Supply and Demand
million barrels per day

Last Points 4Q 2015: Ex. Supply, 2.3; Demand, 94.8; Supply, 97.1

Source: Bloomberg; International Energy Agency
Crude Oil Storage Capacity Utilization
Cushing, OK

Last Points 05/06/16: Shell, 77.3%; Working, 92.9%

Note: Net available shell includes idle (not working) capacity.

Source: Energy Information Administration
Producer Price Index
year/year percent change

Last Points 04/16: U.S., 0.0%; Japan, -4.2%; 03/16: EZ, -4.2%

Source: Bloomberg; Bureau of Labor Statistics
U.S. Personal Consumption Expenditures Implicit Price Deflator
year/year percent change

Last Points March 2016 - Goods: -1.8%; Services: 2.1%

Source: Bureau of Economic Analysis
Japanese CPI and Real GDP

Year/year percent change

Last Points 4Q 2015 - GDP: 0.8%; CPI: 0.3%

Source: Japanese Cabinet Office
10 and 30 Year Treasury Yields

Last Points 05/16/16 - 10-Yr: 1.75%; 30-Yr: 2.60%

Source: Federal Reserve
Federal Budget Balance

$ Bil.

Last Point 2015: -$439

Source: Congressional Budget Office
Questions and Discussion