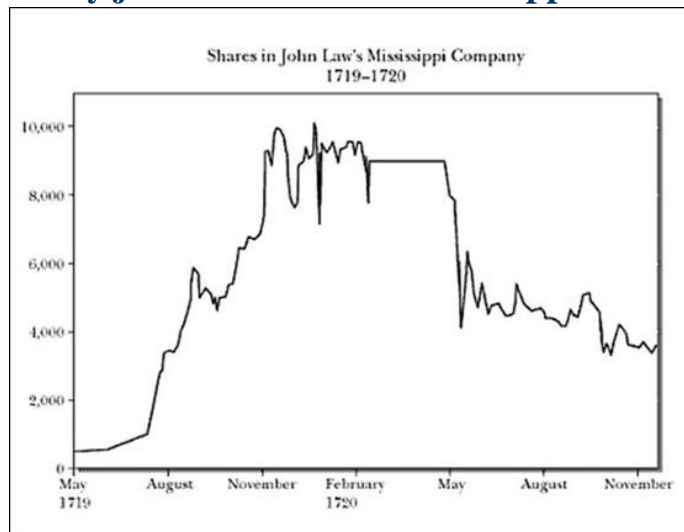


April 2016: The big picture as valuation “disconnect” widens

T.W. US\$ Index: 89.56; US 10-yr: 1.89%; S&P 500: 2092; Oil: \$43.73; Gold: \$1,233; Silver: \$16.97 4/22/16

Headlines, charts, valuations, return prospects, allocation thoughts

Today just like France’s Mississippi Bubble of 1718-1720, except this time global? Risks and opportunities.



www.thebubblebubble.com/mississippi-bubble

Endure, Avoid, or Profit? How is your portfolio structured?

Dan Kurz, CFA, DK Analytics (www.dkanalytics.com; dan@dkanalytics.com)

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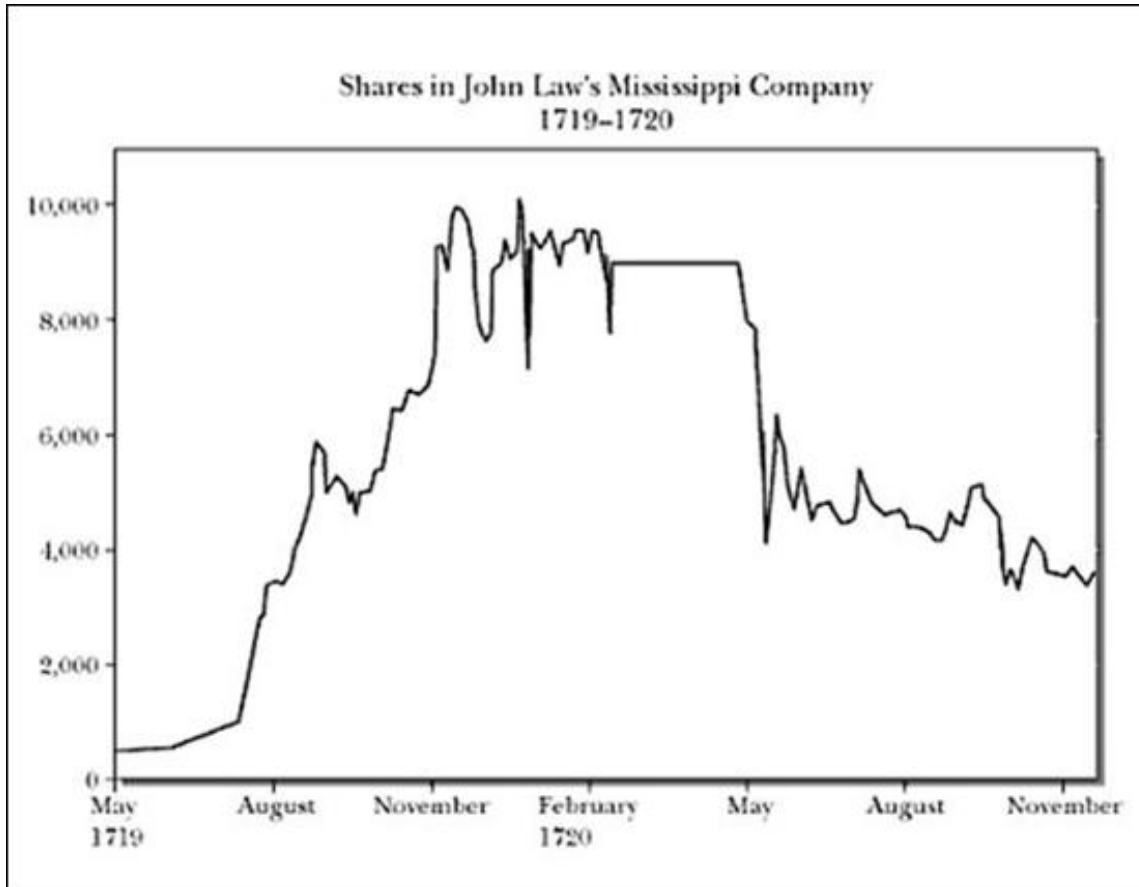


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Slide 1

The Mississippi Bubble of 1718 – 1720

(Are today's stocks still priced for near perfection despite flagging GDP?)



Source: www.thebubblebubble.com/mississippi-bubble

How long until
confidence
in “central
banks’ put”
is lost and
economic
reality sets
in?

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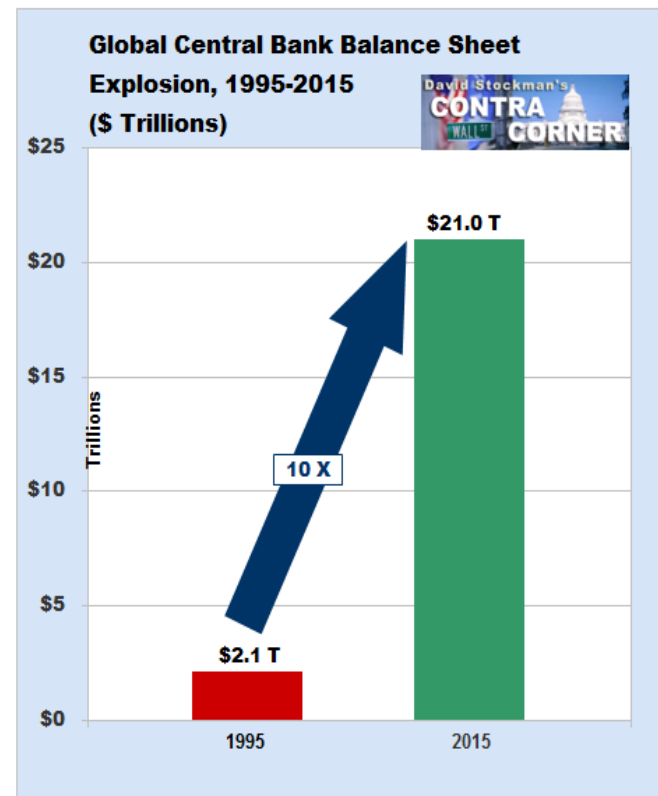


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Slide 2

Introductory/”framing” food for thought

- “Value in financial markets no longer function of discounted cash flow of future income, but instead determined by money printing (QE) or by QE intentions. This is THE DISCONNECT!
- Those closest to money-printing biggest beneficiaries. Occurred in 1720 in France during Mississippi Bubble inflated by John Law. End results not pretty.
- These days, some 70% of market orders generated by computers, and many of rest by indexers. Computers do not think.
- We are swimming in an ocean of ignorance, just like France in 1720. Painful economics lessons over 300 years forgotten.



Global central bank balance sheet CAGR: 12.2%, easily twice global nominal GDP growth p.a. over 20-yr period

Sources: www.zerohedge.com/news/2015-12-10/charles-gave-i-cannot-remember-time-when-less-thinking-has-ever-been-done-financial-, <http://davidstockmanscontracorner.com/wp-content/uploads/2015/09/Capture20-432x480.png>

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Weakening US economy due to toxic public policy stew*

(*Bad fiscal/monetary/reg policy coupled with waning rule of law)

- Small business optimism recently at 92.6, two-year low; Q1:16 and Q4:15 housing starts negative qtr-to-qtr
- Q1:16 real production down 1.7% YOY on top of 1.6% YOY decline in Q4:15 (unseen, outside of recession)
- Real retail sales declined by 0.4% in March 2016; annualized contraction of 0.2% in Q1:16; a two-year low
- Civilian labor force participation rate at near four-decade low of 63.0%; a near record 94.6m Americans between 16 and 64 years of age not in labor force!
- Many new jobs are low-wage, low/no-benefit part-time positions, yielding “double or triple counting”
- Obamacare putting economy on “life support;” law has consumers scrambling for affordable coverage in 2016 and firms “trimming” payrolls and full-time jobs (“49ers and 29ers”)

Sources: <http://www.tradingeconomics.com/united-states/nfib-business-optimism-index>, BLS, <http://www.bea.gov/>, <https://research.stlouisfed.org/>, <http://finance.yahoo.com/news/obamacare-condition-gone-critical-life-113000762.html>, www.shadowstats.com, <http://www.thefiscaltimes.com/Columns/2015/11/19/Obamacare-s-Bait-and-Switch-Has-Left-Consumers-Scrambling>, <http://www.treasurydirect.gov/govt/reports/pd/mspd/mspd.htm>, <http://www.zerohedge.com/news/2015-12-01/coming-great-recession-brought-you-healthcare-cartel>, https://bea.gov/scb/pdf/2015/09%20September/0915_government_receipts_and_expenditures.pdf, <https://www.ssa.gov/disability/>, https://www.socialsecurity.gov/policy/docs/statcomps/ssi_asr/2014/sect01.pdf, <http://www.zerohedge.com/news/2015-12-25/number-young-adults-living-their-parents-has-never-been-higher-it-could-be-worse>, https://www.socialsecurity.gov/policy/docs/statcomps/ssi_asr/2014/sect01.pdf, <http://data.bls.gov/timeseries/LNS15000000>

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Weakening US economy due to toxic public policy stew, cont'd

- From 2008 - 2014, food stamp benefits rose from \$37bn to \$69bn, up 87.6%; disability payments rose from \$34.1bn to \$46.3bn, up 35.7%; young adults living w/ parents up from 28.1% to 31.8%.
- US productivity plummeted by 3% p.a. rate in Q4:15 while unit labor costs surged by 4% p.a.
- 2015 S&P 500 GAAP earnings per share were down 11% over 2014 (AND “recovery” long in tooth)
- If Hillary Clinton is elected president, she will seek \$1trn in new tax receipts (federal tax receipts since 2009 are up by 57% to \$3.3trn in 2015)
- The Fed, long touting a “solid recovery,” wants to test how banks could handle negative interest rates
- (In light of above, how long will Fed be able to raise interest rates before reversing them and revisiting robust QE?)

Sources: <https://www.fiscal.treasury.gov/fsreports/rpt/mthTreasStmnt/mts0915.pdf>, www.atr.org/hillary-confirms-trillion-dollar-tax-hike-plan, <http://www.bea.gov/>, <https://research.stlouisfed.org/http://www.macrostrategy.co.uk>; <http://data.bls.gov/timeseries/LNS15000000>, <https://us.spindices.com/indices/equity/sp-500>, <http://www.bloomberg.com/news/articles/2016-02-02/rates-less-than-zero-is-bank-stress-fed-wants-to-test-in-2016>

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Rising debt & flagging global economy due to toxic public policy stew

- US debt \$19.2trn (+\$8trn in 7 years), or nearly 6x Feds' 2015 tax receipts (62% from individuals)!
- In past 90 days, executive branch of federal government posted 6,191 **new** unconstitutional regs, a productivity-withering, economic “wet blanket;” regulatory compliance costs private sector \$2trn p.a. -- unproductive staffing!
- Ongoing loss of rule of law (fiat gov't) & loss of property rights (fiat money, green cronyism, amnesty w/ welfare, redistributionist Obamacare, depositor confiscation schemes) economic “wet blankets” -- toxic public policy stew!
- ECB/BOJ/PBOC printing huge amounts of money/CREATING NEW DEBT
- ZIRP & NIRP abound. Global toxic public policy stew sustained with QE/ZIRP/NIRP
- Financial repression-based pension underfunding keeps on getting worse
- Global fiat currency supernova inevitable? Gold/silver price bullish!

Sources: <https://research.stlouisfed.org/fred2/series/GFDEBTN>, <http://www.treasurydirect.gov/govt/reports/pd/mspd/2016/opds032016.pdf>, http://www.bis.org/statistics/d5_1.pdf, www.regulations.gov/#, <http://dkanalytics.com/dkblog/index.php/2016/04/06/dk-analytics-post-15-double-whammy-pension-underfunding-juxtaposed-against-zirp-nirp-and-debt/>; <http://dkanalytics.com/dkblog/index.php/2016/02/12/dk-analytics-post-14-on-heels-of-spreading-nirp-is-cash-going-going-gone-02122016/>, <http://dkanalytics.com/dkblog/index.php/2016/01/26/dk-analytics-post-13-gold-in-debt-based-deflation-offset-with-increasingly-unbridled-qe/>, <http://dkanalytics.com/dkblog/index.php/2015/09/08/dk-analytics-blog-8-assaulted-property-rights-and-thus-liberty-fiat-money-focus-installment-1/>, <http://dkanalytics.com/dkblog/index.php/2015/09/28/dk-analytics-blog-9-assaulted-property-rights-and-thus-liberty-the-c02-global-warming-hoax-installment-2/>, <http://dkanalytics.com/dkblog/index.php/2015/10/17/dk-analytics-post-10-assaulted-property-rights-and-thus-liberty-massive-immigration-into-welfare-states-installment-3/>, <http://dkanalytics.com/pdfreports/wp-content/uploads/2015/07/A-decade-later-June-2015a.pdf>,

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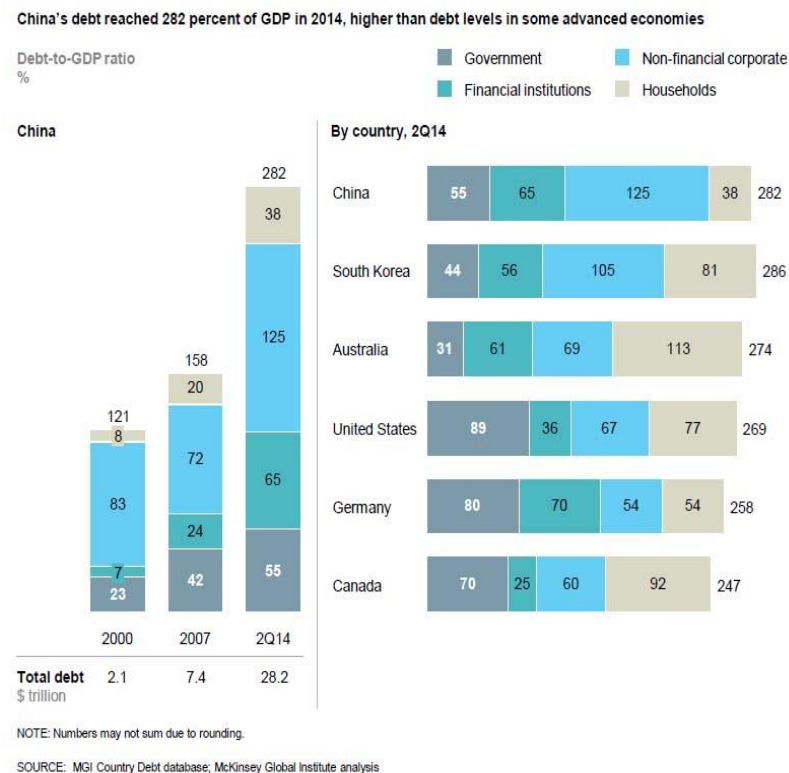


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Rising debt & flagging global economy due to toxic public policy stew, cont'd

- Over \$430trn in OTC interest rate sensitive derivative contracts expose global banks to trillions in losses if interest rates “normalize,” implying even more central bank money printing “DYSFUNCTIONALISM” ahead. Global issues
- Oil industry canceled 150 projects that could have unlocked 125bn barrels of oil; 19m bpd of production, 20% of world’s daily demand, gone; projects’ breakeven \$104bbl plus! Global energy sufficiency/productivity issues will only grow ...
- CRB Index near multi-decade low as great “Chinese unwind” (50% of GDP “infrastructure”) continues, Baltic Dry Shipping Index at multi-decade lows, war-torn ME lacks oil revenues, Brazil faces political instability & “stagflation,” and CAT had 36 months of down sales -- global issues!
- China’s debt reached 282% of GDP in 2014, up 14-fold in 14 years, higher as a % of GDP than US, Germany, and Canada. Global debt issues!



Sources: http://www.bis.org/statistics/d5_1.pdf WorldBank, Bloomberg, <http://www.macrostrategy.co.uk>, SEC filings

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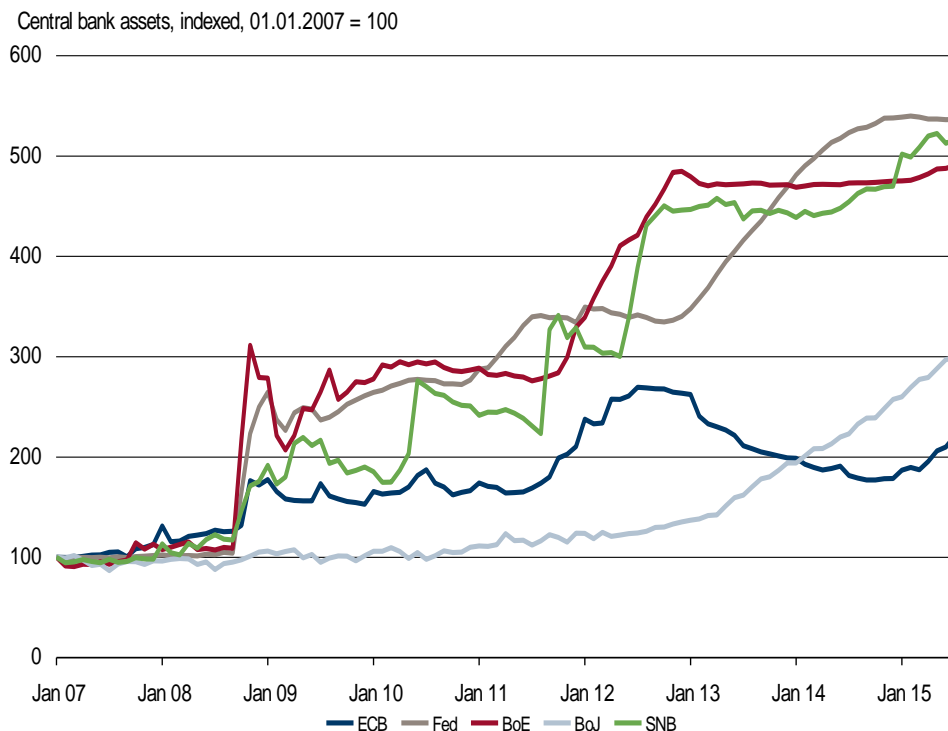


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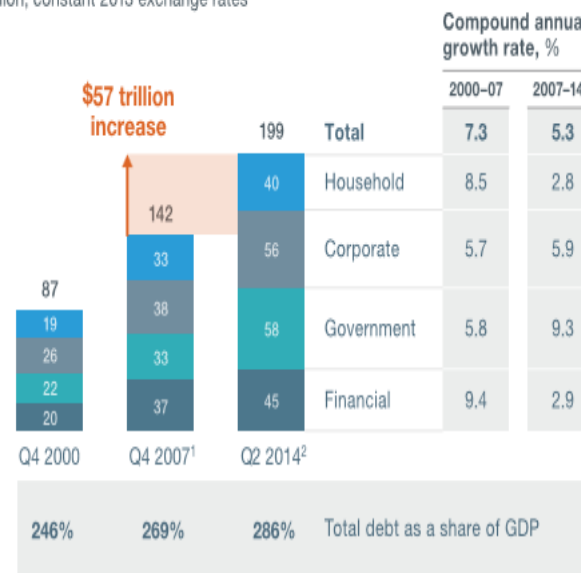
Slide 7

Growth in central bank assets (QE) finances growth in debt

Central bank assets continue to grow, financing sustained outsized growth in global debt while, together with ZIRP and NIRP, holding down interest rates (Rising global debt/global GDP testament to lower productivity!)



Global stock of debt outstanding,
\$ trillion, constant 2013 exchange rates



¹Figures do not sum to total, because of rounding.

²Q2 2014 data for advanced economies and China; Q4 2013 data for other developing countries.

With recession on horizon, govt deficits and “QE financing” could rise substantially

Sources: Datastream, CS, Haver Analytics, BIS, IMF, www.mckinsey.com/instights/economic_studies/debt_and_not_much_leveraging,
<http://www.marketwatch.com/story/global-stock-market-cap-has-doubled-since-qes-start-2015-02-12>

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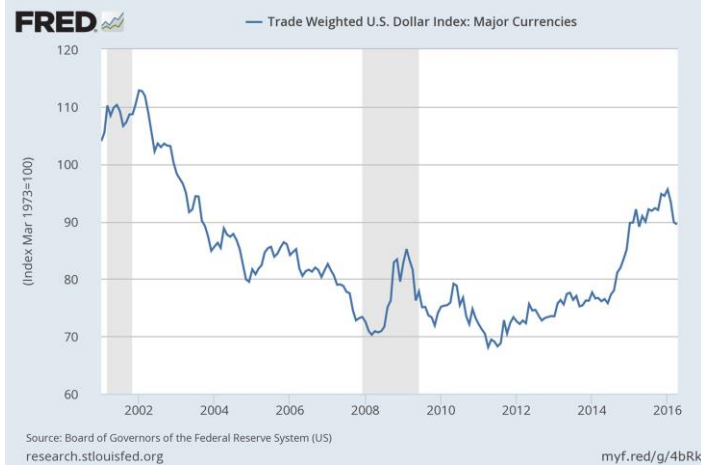


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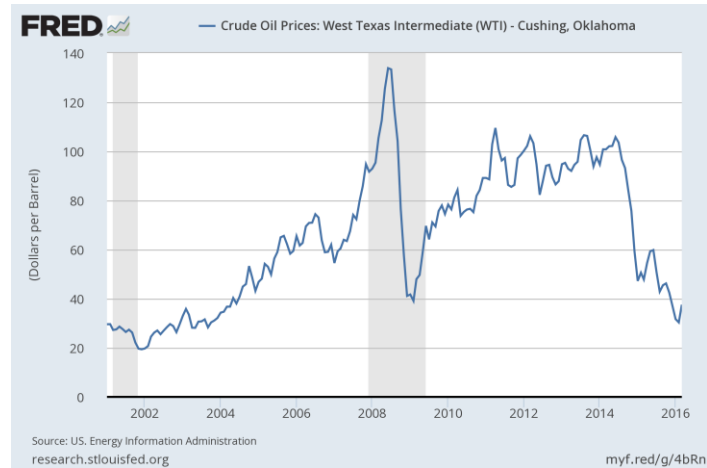
Slide 8

Timely charts: weaker \$, oil bottom? And few jobs, little spending

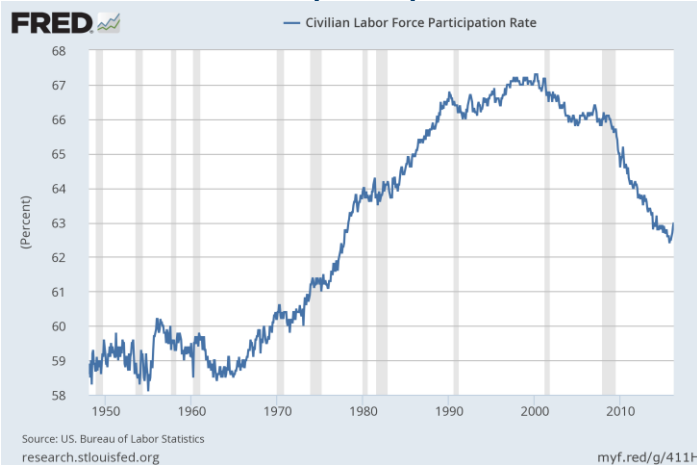
Trade weighted USD index: major currencies



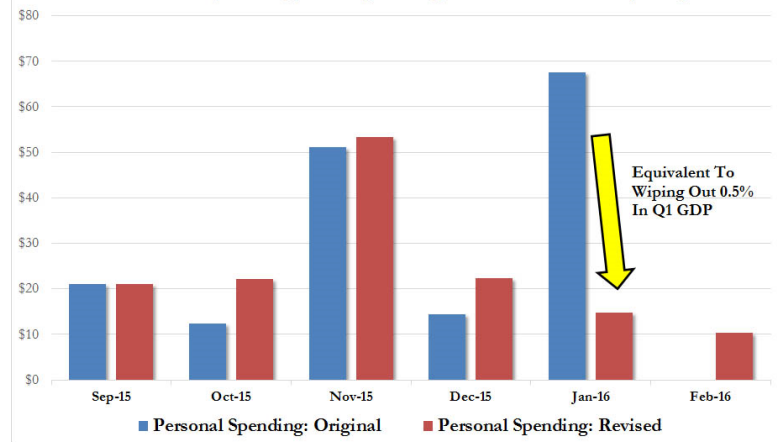
Crude oil price: West Texas Intermediate (WTI)



Civilian labor force participation rate



Personal Spending Change: Original and Revised (\$BN)

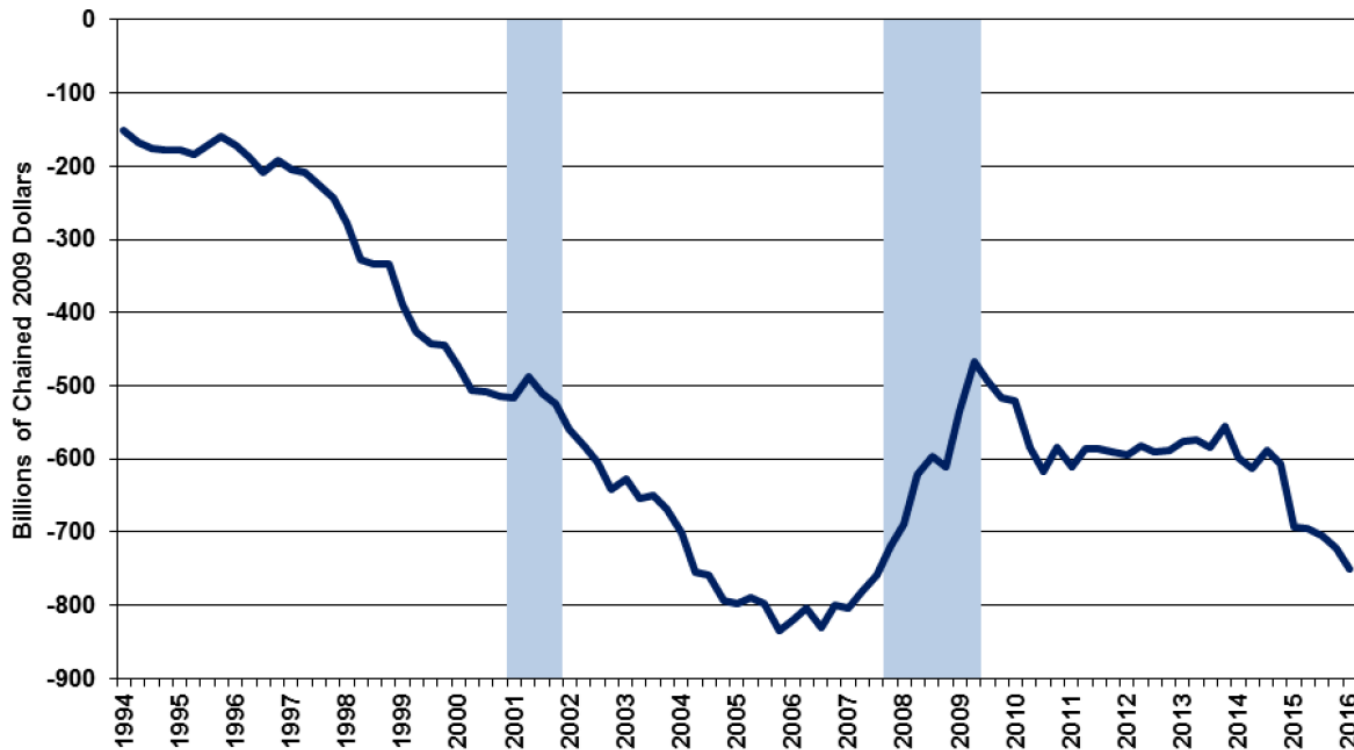


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Trade deficit deterioration in Q1:16 to reduce US GDP by 0.4% (Q1:16 US GDP growth could be negative before downward revision)

Inflation-Adjusted U.S. Merchandise Trade Deficit
Quarterly Deficit at Annual Rate (Billions of Chained 2009 Dollars)
To 1q2016 (1q2016 Based on February 2016 Detail)
Seasonally-Adjusted [ShadowStats, Census Bureau]

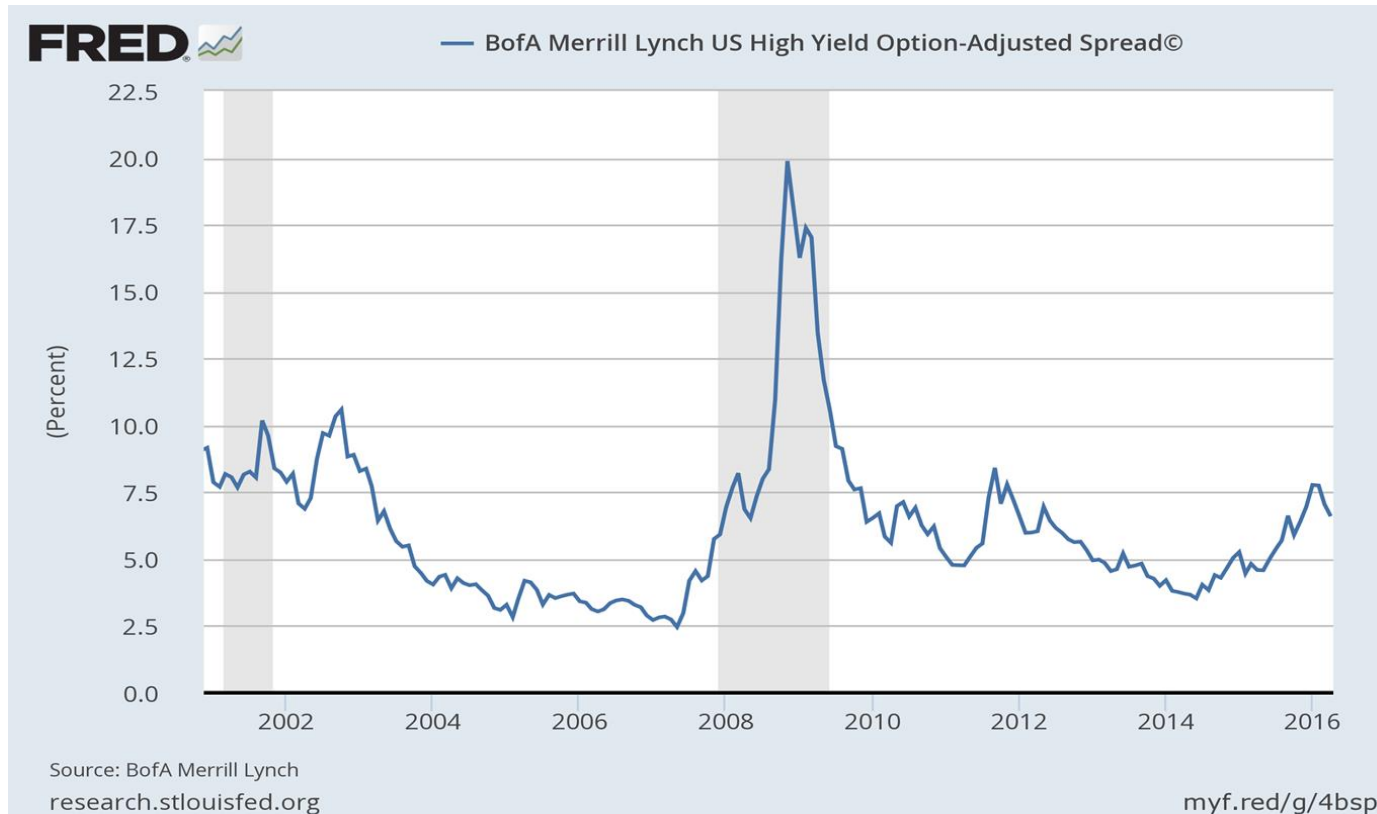


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Rising spread between Treasuries and junk bonds

- Canary in coal mine of upcoming recession or deepening recession, esp. as stock market appears to have become more of a coincident, if not lagging, indicator?
- And: will trillions of dollars in auto loans and student loans soon be new junk bonds requiring bailouts?

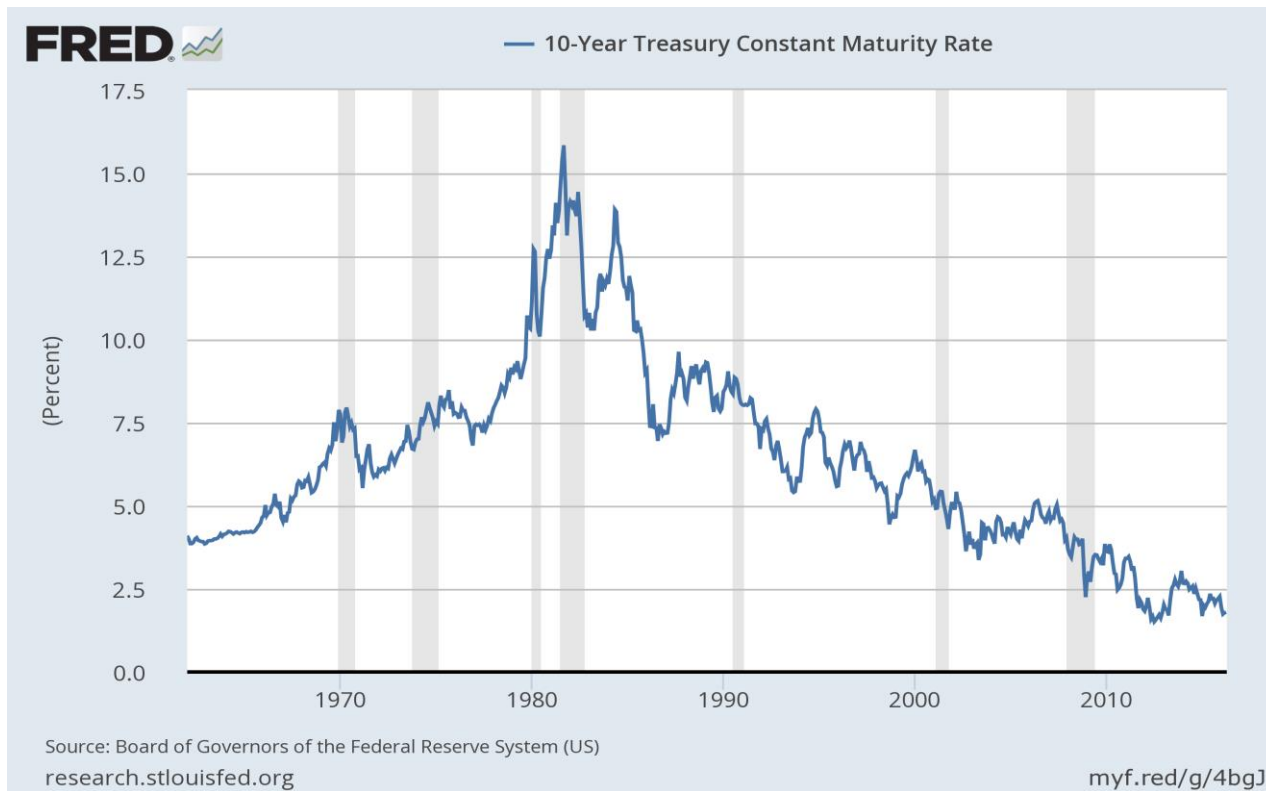


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World's most important interest rate at inflection point?

- 34-year bull market in 10-year Treasuries continues despite rising solvency risks, huge monetary inflation risks, and widening misallocation risks (productivity issues)
- Average gov't yield over 400 years: approximately 4% (according to James Dale Davidson of Strategic Investment)
- Reversion to/beyond mean would “clock” valuations of long-duration assets such as bonds and stocks
- Investors should consider allocating for this eventuality while most bond and stock prices remain artificially elevated



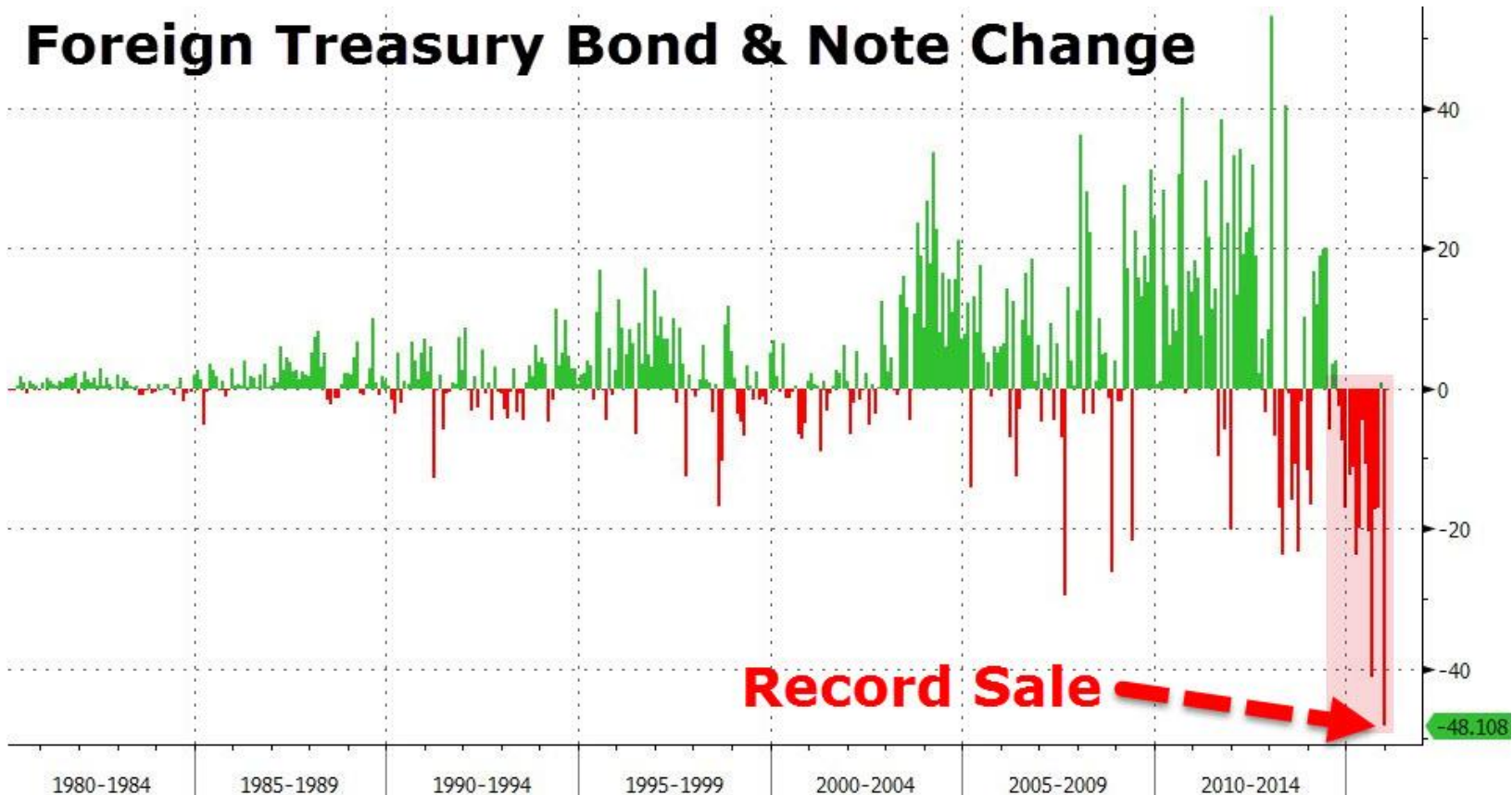
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Foreigners selling Treasuries; who's buying?

Noteworthy: the US has net foreign debt of \$7.5 trillion

Foreign Treasury Bond & Note Change



<http://www.zerohedge.com/news/2016-02-16/foreign-officials-sell-record-48-billion-us-treasurys-december>

www.zerohedge.com/news/2015-12-15/foreigners-sell-record-552-billion-us-treasuries-October;

<https://research.stlouisfed.org/fred2/series/IIPNETINQ>; <http://www.bea.gov/newsreleases/international/intinv/intinvnewsrelease.htm>

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Meanwhile, over 30% of global gov't bonds sport negative yields!
Upshot: virtually all OECD gov't bonds “**junk bonds**” with no yields

\$7 Trillion of Negative-Yielding Bonds

Amount of debt with sub-zero yields swells



Source: Bloomberg Global Developed Sovereign Bond Index

Bloomberg 

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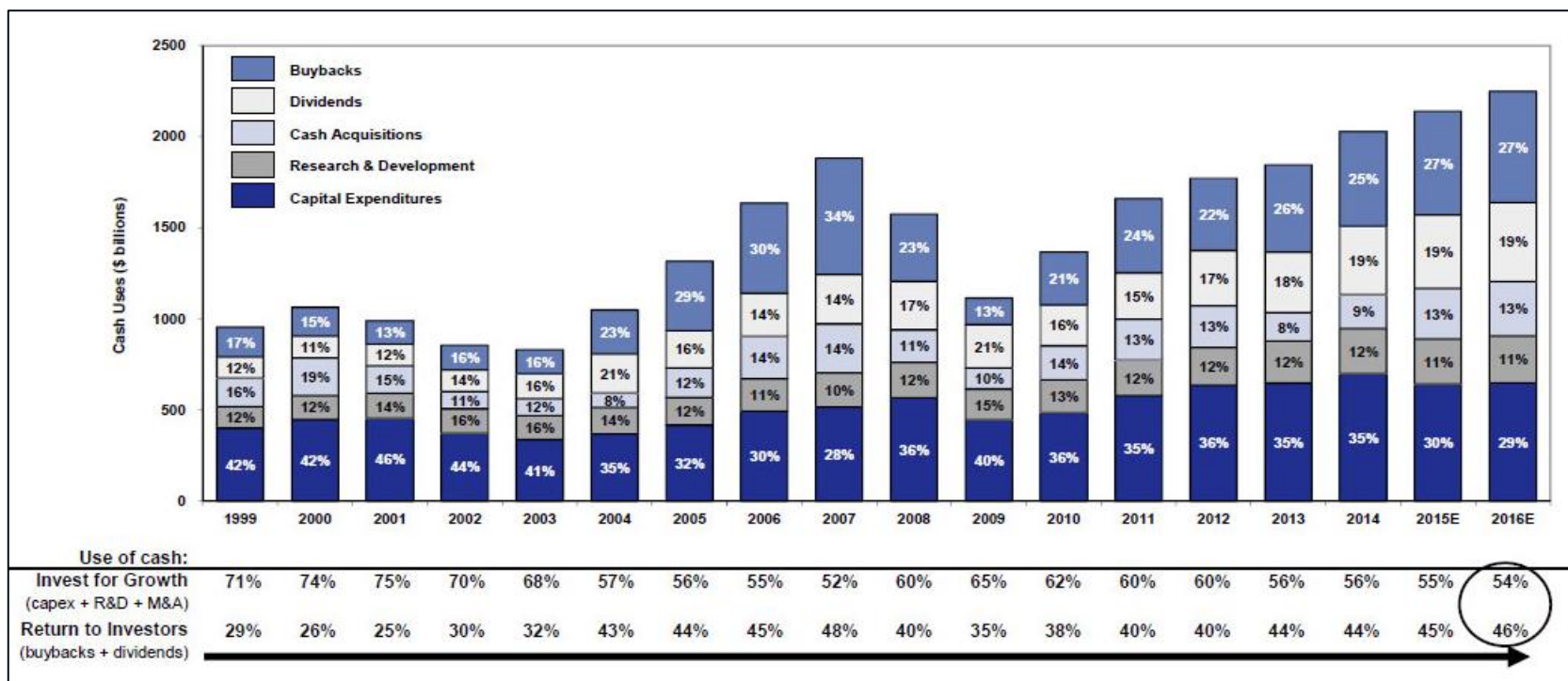


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Turning to stocks: Corporate America not investing in organic growth! Upshot: less robust earnings growth likely, “superimposed” on high P/Es

Breakdown of aggregate S&P 500 corporate cash use with Goldman Sachs forecast for 2015 and 2016



Sources: Compustat and Goldman Sachs

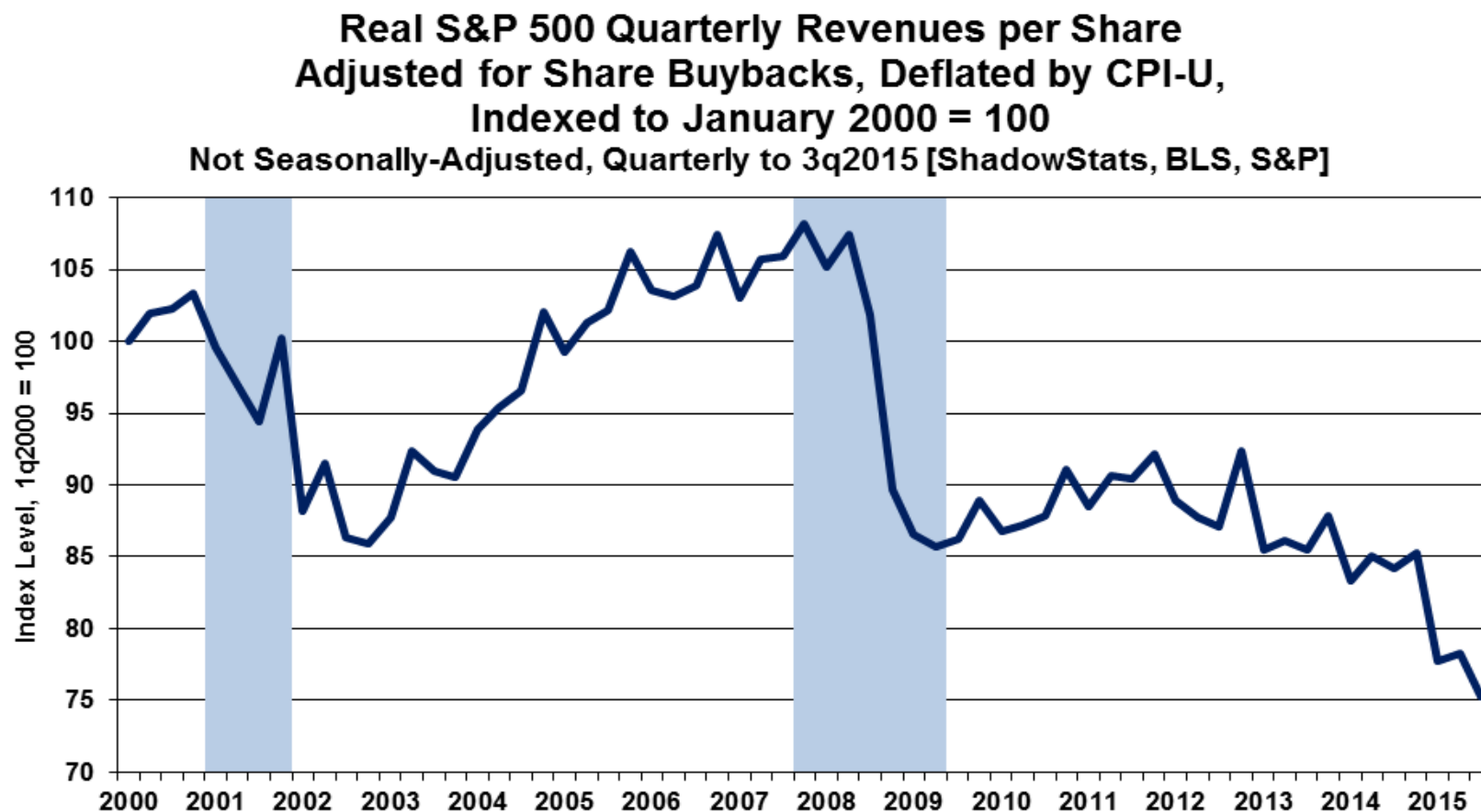
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No organic (top-line) growth by Corporate America, revisited Can't sustainably grow earnings (bottom-line) or even EPS this way



Sources: ShadowStats, BLS, S&P

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Long term nominal equity returns examined

- Long-term nominal equity returns p.a., whether in the US or other OECD nations, typically mirror nominal GDP growth p.a.
- As such, S&P 500 *bull market* decades were not GDP growth or earnings growth driven, rather they resulted principally from P/E (multiple) expansions in the '50s, '80s, and '90s -- the '80s and '90s valuation “bubble” was deflated in the '00 years:

Decade	Nominal Gross Domestic Product	S&P 500 EPS	Inflation (Deflation)	S&P 500 Total Return
1930-1940	-1.4%	-5.0%	-1.9%	0.0%
1940-1950	11.2%	7.7%	5.0%	8.9%
1950-1960	6.3%	5.4%	2.1%	19.3%
1960-1970	6.6%	5.6%	1.9%	7.8%
1970-1980	9.7%	7.9%	6.3%	5.8%
1980-1990	8.3%	5.5%	6.3%	17.3%
1990-2000	5.6%	7.1%	3.4%	18.0%
2000-2010	4.0%	4.5%	2.4%	1.4%

All table statistics are nominal p.a. growth rates

Sources: S&P, Bureau of Labor Statistics, Ibbotson, Crestmont Research

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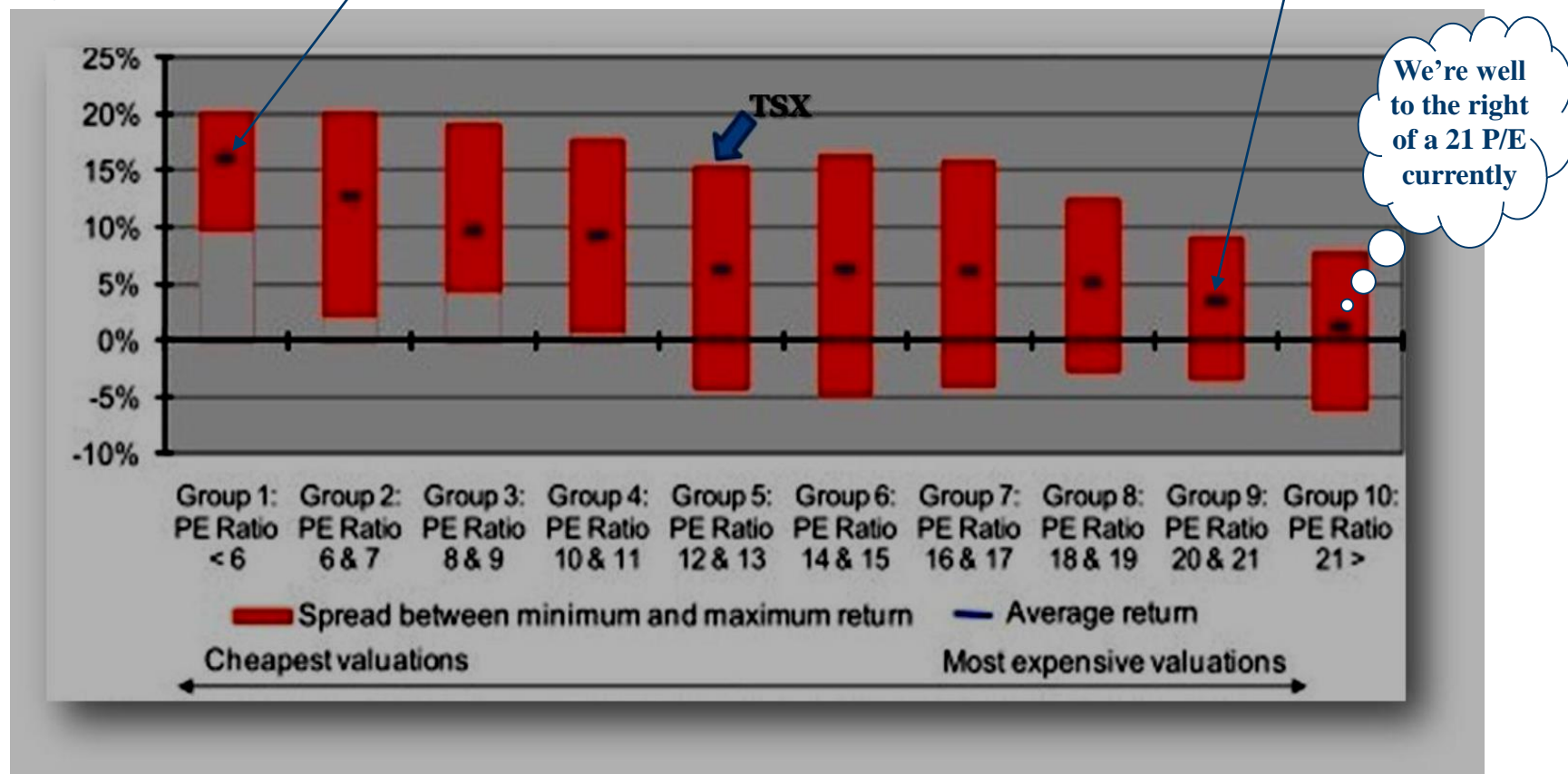
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Strategic returns depend materially on acquisition P/E (valuation)

P/E of 6 or E/P of 16.7% (multiple expansion!); P/E of 20 or E/P of 5%

10-year forward real returns based on S&P 500 P/E ratios from 1871-2010



Sources: Plexus Asset Management (based on data from Prof Robert Shiller and I-Net Bridge per 9/30/2011)

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Stock market expensive, especially as recession “overdue”

If earnings fell 50%, P/E would double at current S&P 500 level



During the past 97 years in the US, new secular stock bull markets (expanding P/Es) have commenced after P/Es bottomed out in the 10x to single digit range, far removed from the current valuation ...

Compared to 2008, both debt and interest rate derivative risks are much greater, implying higher risk premiums/lower valuations -- and slower growth -- ahead

Sources: Robert J. Shiller, Credit Suisse

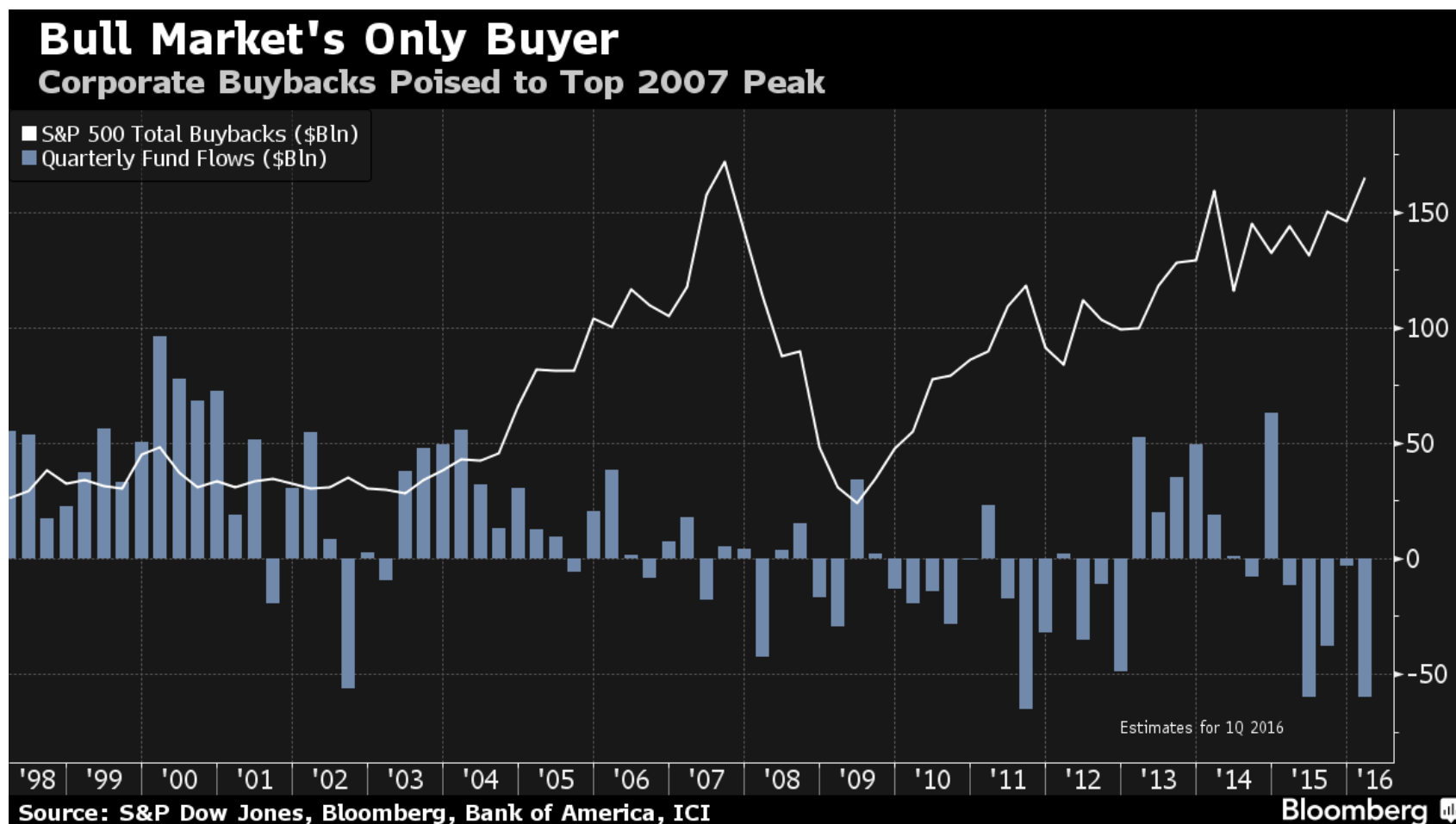
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What happened the last time corporate buybacks peaked?



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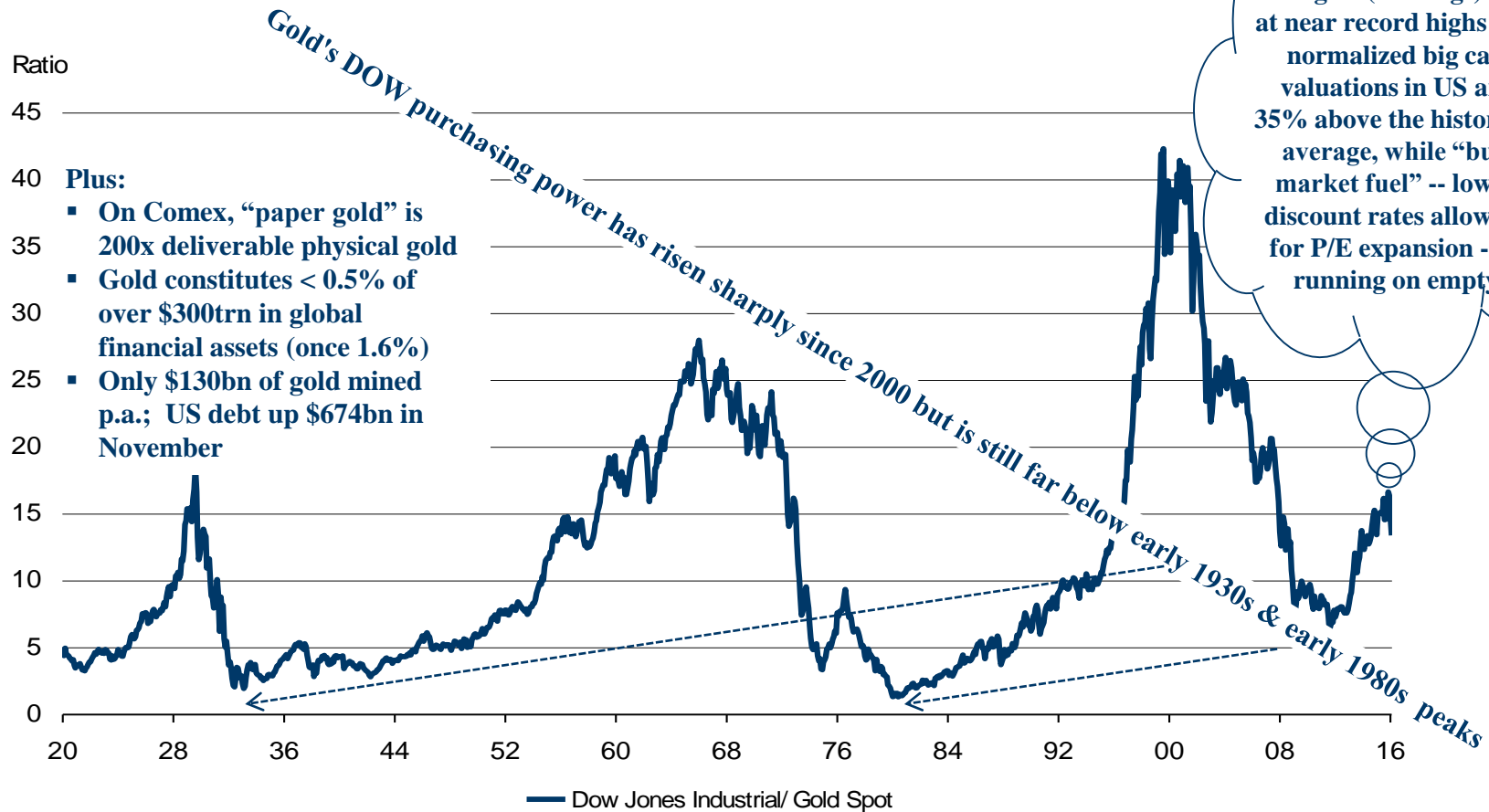
Allocation food for thought: turning risks into opportunities ...

- Take profits on high P/E stocks and overvalued bonds, raise portfolio cash (T-Bills!); “safe” cash to facilitate future asset purchases “on cheap”
- Consider putting some proceeds to work in generally lower P/E or “low correlation” out-of-favor, scarce real assets such as energy, ag, & true money, physical gold (overleaf)
- Consider shorting overvalued stocks & bonds (tactical): Ultrashort QQQ ETF (QID) & Pro-Shares Short High Yield ETF (SJB)
- In today’s valuation landscape, be less concerned with the return **on** your capital than with the return **of** your capital

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Gold valuation: DJII/gold spot price (long-term)



Source: Bloomberg, Credit Suisse / IDC

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APPENDIX

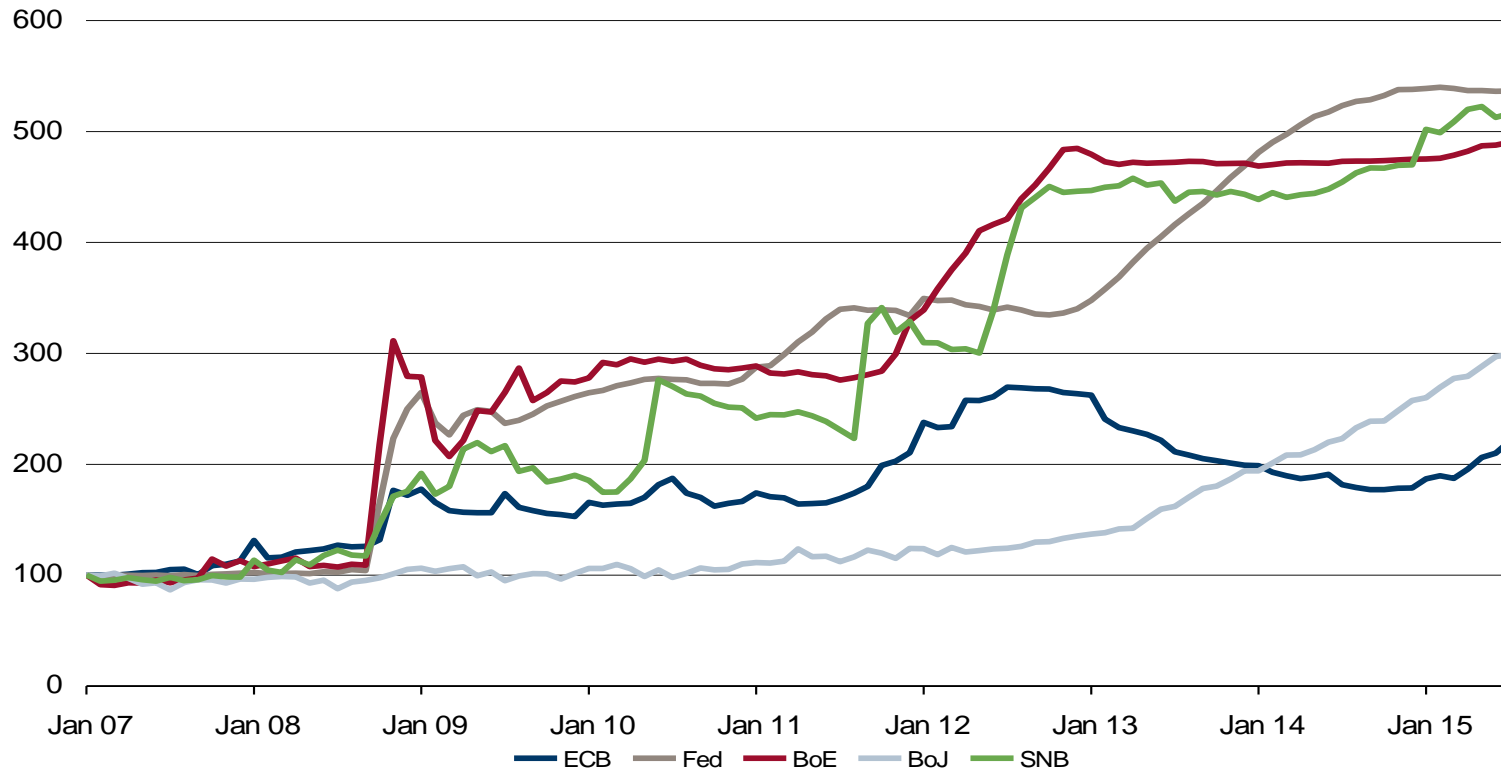
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Central bank assets, indexed 01.10.2007 = 100



Sources: Bloomberg, Datastream, Credit Suisse

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Allocation food for thought:

Consider putting some proceeds to work in generally lower P/E or “low correlation” scarce real assets such as energy, ag, & gold

Real asset correlations to generic bonds and stocks; correlations of 0.30 or less indicate differing historical price development

	Number of quarters	Gold	ILBs	High dividend yield stocks	Infrastructure	Alternative energy	Oil	Coal	Grains	Famland	Timberland	Water	Cash	Global govt bonds	US corporate bonds	Global equities
London Fix Gold PM PR USD (gold)	178	1.00														
BarCap US Govt Infln Lkd TR USD (ILBs)	61	0.17	1.00													
Zacks Yld CHF Hog USD (high div yield stocks)	23	-0.04	-0.03	1.00												
S&P Global Infrastructure TR USD (infrastructure)	42	0.11	-0.03	0.86	1.00											
Ardour Global Composite TR USD (alternative energy)	50	0.09	-0.20	0.71	0.81	1.00										
S&P GSCI Crude Oil Spot (oil)	106	0.34	0.13	0.62	0.43	0.41	1.00									
HSBC Global Coal Mining PR (coal)	106	0.07	-0.09	0.63	0.71	0.54	0.36	1.00								
DJ UBS Grains TR USD (grains)	86	0.21	0.23	0.26	0.36	0.30	0.10	0.21	1.00							
NCREIF Famland (famland)	77	0.17	-0.22	-0.28	0.06	0.04	-0.18	0.04	0.13	1.00						
NCREIF Timberland (timberland)	101	0.01	-0.02	-0.36	0.03	0.05	-0.10	-0.13	0.06	0.39	1.00					
MSCI World/Water Utilities GR USD (water)	70	0.07	-0.01	0.57	0.60	0.33	-0.04	0.23	0.12	0.21	0.11	1.00				
Citi USD EuroDep 3 Mon USD (cash)	138	-0.06	-0.10	-0.31	0.00	0.12	-0.04	-0.09	-0.03	0.02	0.40	-0.02	1.00			
Citi WGBI USD (global government bonds)	110	0.26	0.36	-0.04	0.20	-0.16	-0.08	-0.17	0.09	0.02	0.07	0.17	0.13	1.00		
BarCap US Intern Credit TR USD (US corporate bonds)	158	0.08	0.55	0.50	0.41	0.00	-0.09	0.02	0.09	-0.05	0.04	0.17	0.18	0.62	1.00	
MSCI AC World GR USD (global equities)	98	-0.03	-0.29	0.91	0.93	0.77	-0.02	0.49	0.23	0.12	0.05	0.27	-0.02	0.06	0.15	1.00

Grey block: correlation of so-called "traditional assets" (cash, Treasuries, corporate bonds, stocks) vs. real assets thru 12/2014 Sources: Ibbotson/Morningstar

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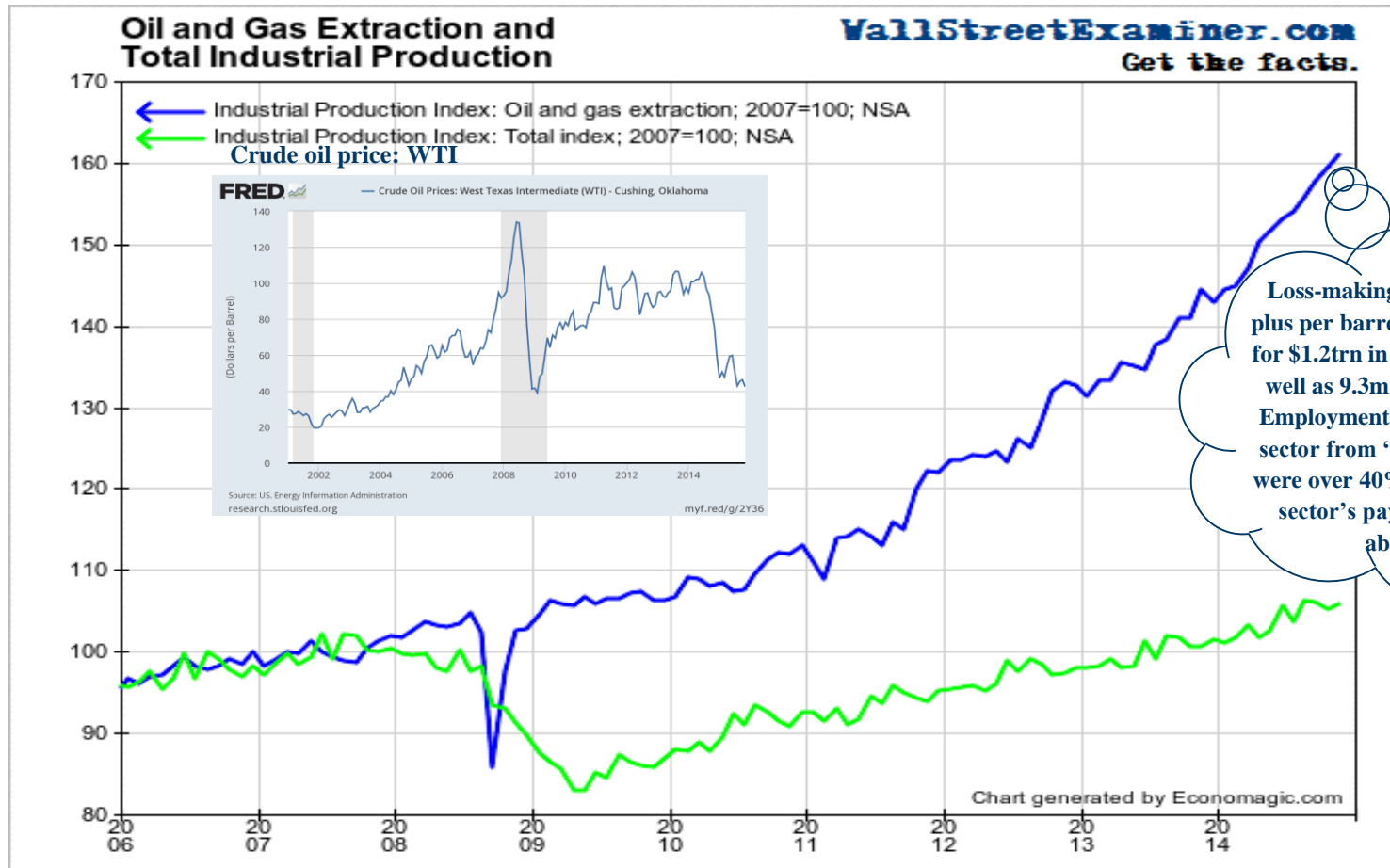


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Oil & gas fracking and the industrial economy

5m more bpd & huge economic lift for over 6 years going into reverse!



Sources: <http://wallstreetexaminer.com/wp-content/uploads/2014/12/M1080121022701161156596920979619.gif>, Perryman Group

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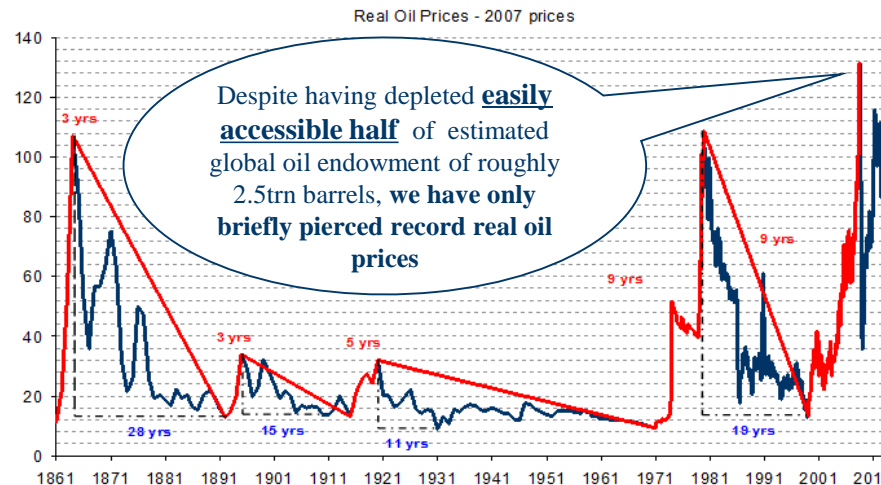
Dense energy (fossil fuel) assets

Capitalize on scarcity via real assets amidst unprecedented global “money printing”



Fossil fuel assets: scarcity play

- Need to offset global oil production decline of 5% - 8% p.a. or 2bn barrels > than Iran's production (#4 producer)
- Fracking generating unsustainable losses; 4m bpd of crude oil supply out of 93.4m global bpd of supply at risk?
- High energy density coal harder to extract; coal = all net global energy supply growth over last decade!
- Fossil fuel dependency for energy-intensive lifestyles:
 - ✓ One barrel of oil = 11.5 years of ag field work!
 - ✓ 4.7 barrels of oil per capita consumed p.a. supplies only 31% of global per capita energy needs
 - ✓ If Asia's per capita energy usage rose from 25% to 33% of efficient Europe's, demand would rise 19%
 - ✓ Harnessing dense energy (lots of heat) = productivity!



Oilfield depletion: from finding 4x oil used to using 4x oil found

Year	Bn of barrels of oil found globally	Bn of barrels of oil used globally	Annual surplus/deficit
1930	10.0	1.5	8.5
1964	48.0	12.0	36.0
1988	23.0	23.0	0.0
2005	5.5	30.5	-25.0
2010	6.0	32.0	-26.0
2013	12.4	33.0	-20.3

Nearly \$700bn spent globally in 2013, all-time record

Source: DataStream, CS Global Strategy / IDC

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Global oil supply and demand balance

Global Oil Supply and Demand in million barrels per day											
Production	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016E
Non-OPEC Supply	49.8	50.1	49.9	50.5	52.1	51.5	52.0	53.7	56.1	57.4	56.8
Former Soviet Union	12.2	12.6	12.6	12.9	13.2	13.5	13.6	13.8	13.9	14.0	13.9
USA	8.3	8.5	8.6	9.1	9.7	10.1	11.1	12.4	14.1	15.0	14.6
OPEC Supply	34.6	34.2	35.5	33.9	35.3	37.0	38.4	37.3	37.2	38.3	39.2
Crude Oil Portion	30.5	30.1	31.3	29.1	29.8	30.8	31.9	30.9	30.8	31.7	32.2
Other Liquids	4.1	4.1	4.2	4.8	5.5	6.2	6.5	6.5	6.5	6.7	7.0
Global oil production	84.4	84.3	85.4	84.3	87.4	88.5	90.4	91.1	93.4	95.7	96.0
Consumption	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016E
OECD Demand	49.5	49.3	47.7	46.4	47.0	46.3	45.9	46.0	45.7	46.3	46.6
USA	20.7	20.7	19.5	18.8	19.2	18.9	18.5	19.0	19.1	19.4	19.5
Europe	16.4	16.3	16.2	15.4	15.3	14.9	14.4	14.2	14.1	14.4	14.5
Japan	5.2	5.0	4.8	4.4	4.4	4.4	4.7	4.6	4.4	4.2	4.1
Non-OECD Demand	35.6	36.5	37.8	38.4	40.4	42.8	44.5	45.3	46.7	47.5	48.6
China	7.3	7.5	8.0	8.5	9.3	9.5	10.2	10.5	10.9	11.2	11.5
Former Soviet Union	4.2	4.1	4.2	4.1	4.2	4.7	4.6	4.7	4.9	4.8	4.8
Global oil consumption	85.1	85.8	85.5	84.8	87.4	89.1	90.4	91.2	92.4	93.8	95.2
Market balance	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016E
Stocks movements	-0.7	-1.6	-0.1	-0.4	0.0	-0.6	0.0	-0.2	1.0	1.9	0.8

Source: EIA, Credit Suisse / IDC

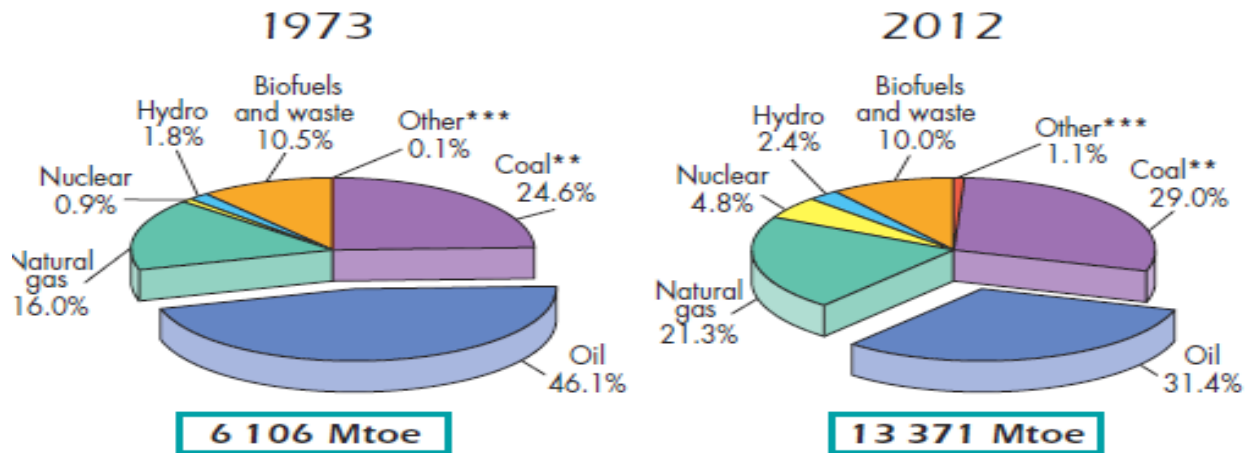
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Global primary energy supply breakdown: 81.7% fossil fuel-based; renewables ("other") generate only 1.1% of supply



*World includes international aviation and international marine bunkers.
 **In these graphs, peat and oil shale are aggregated with coal.
 ***Includes geothermal, solar, wind, heat, etc.

Mtoe = Millions tons of oil equivalent

Energy supply (demand) has been growing at 2.0% p.a. over 39 years (1973 – 2012)

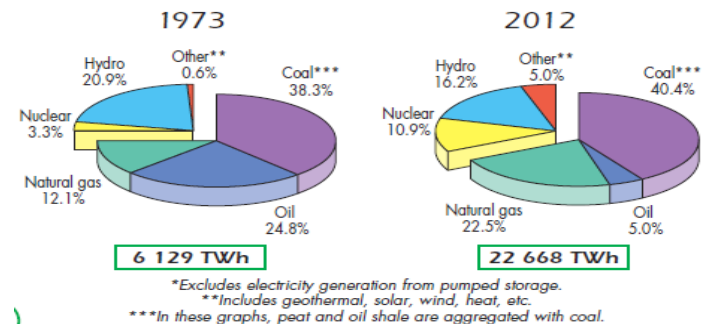
Supply growth breakdown over same period:

Oil: 1.0% p.a.
 Coal: 2.5%
 Gas: 2.8%
 Nuclear: 6.5%
 Hydro: 2.8%
 "Other:" 8.5%

(In 2013, fossil fuels accounted for 86.7% of primary energy (!!!) and "other," or so-called renewables, 2.2%)

Global composition of electricity by TWh in 2012 (on right)

Noteworthy: in 2012, fossil fuels, nuclear, & hydro = 95.0% of power generation; "other" accounted for 5.0%



*Excludes electricity generation from pumped storage.
 **Includes geothermal, solar, wind, heat, etc.
 ***In these graphs, peat and oil shale are aggregated with coal.

Sources: IEA Key World Energy Statistics, BP, www.c2es.org/technology/overview/electricity

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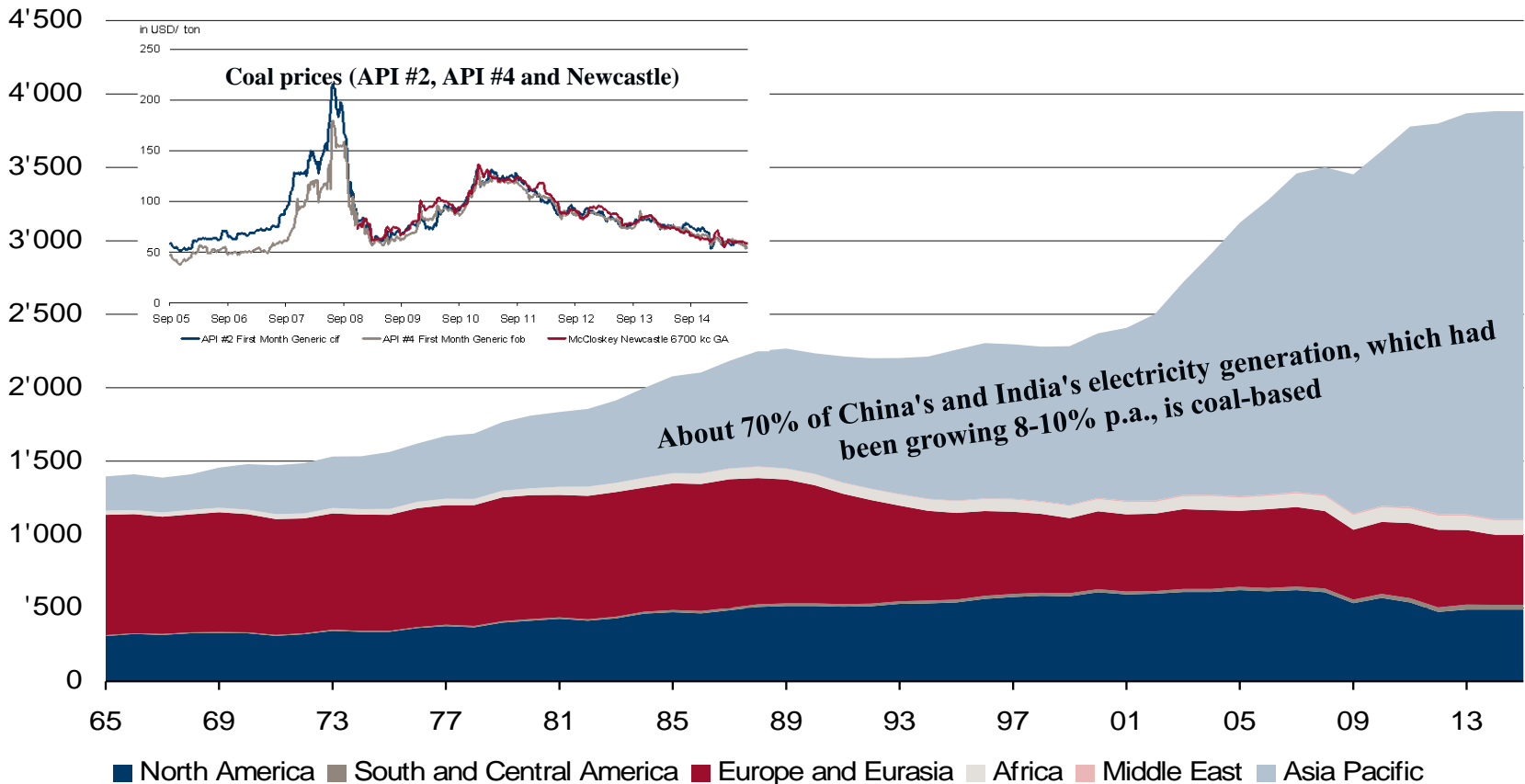


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Global coal consumption

Global coal consumption, in million tons oil equivalent



Source: BP Statistical Review, Credit Suisse / IDC

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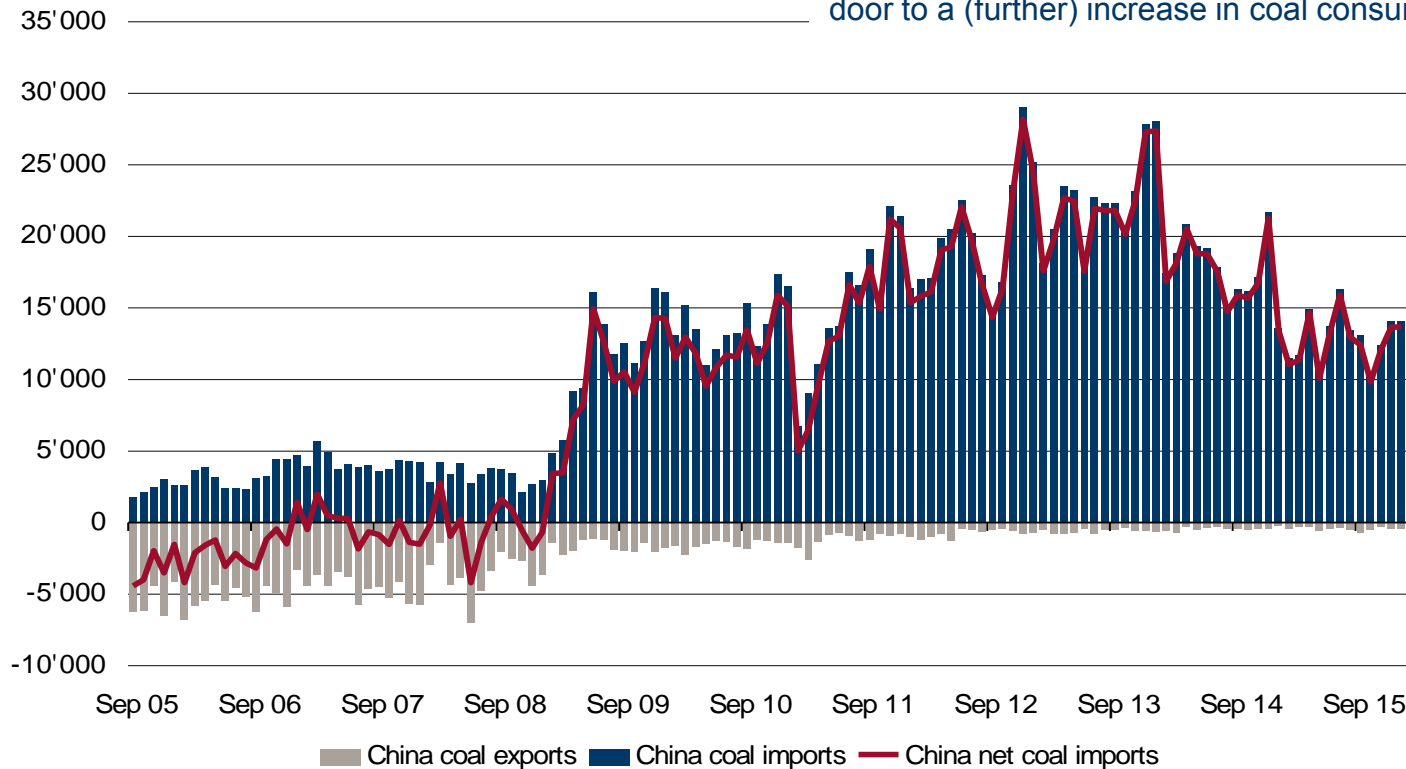
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Coal supply/demand trends in pivotal China and beyond

China still big importer while G7 coal imports and coal energy use have grown

China coal trade balance

in kt



“The arbitrary decision to close Germany’s nuclear sector after Japan’s Fukushima disaster opens the door to a (further) increase in coal consumption. “

Sources: Bloomberg, Credit Suisse, <http://www.theguardian.com/environment/2015/jun/08/five-g7-nations-increased-their-coal-use-over-a-five-year-period-research-shows>
<http://www.worldcoal.com/special-reports/13052015/Japan-coal-demand-what-does-the-future-hold-coal2265/>, <http://blogs.ft.com/nick-butler/2015/05/24/the-burning-issue-of-german-coal/>

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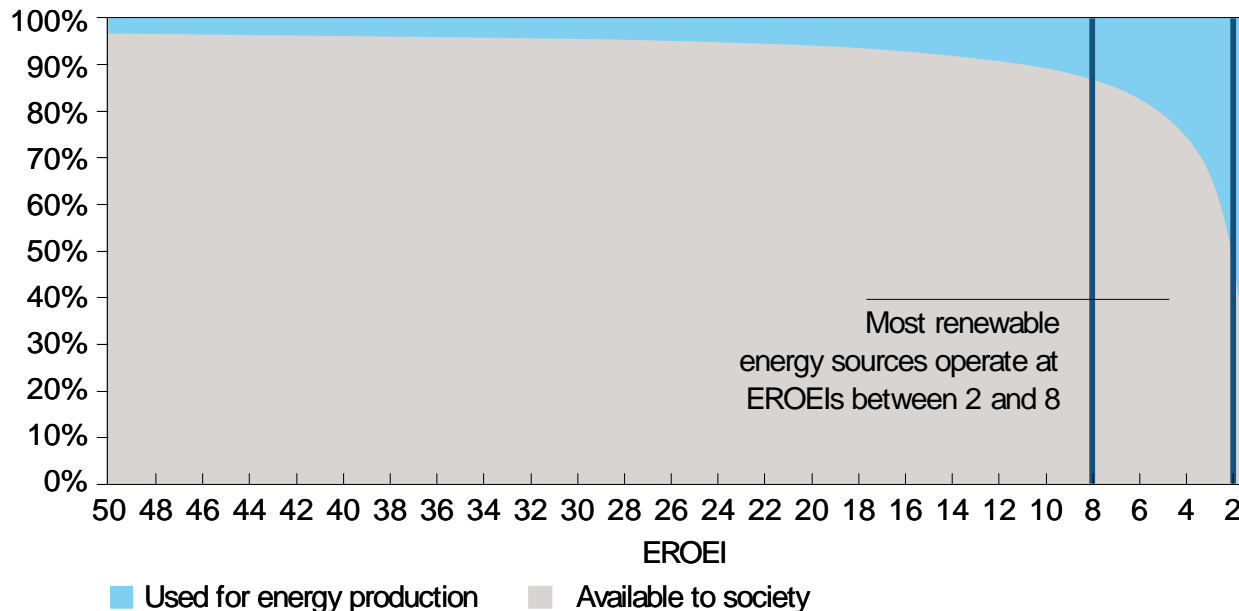


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Lower EROEI and declining energy density impact: larger share of GDP devoted to assuring energy supplies

Energy returned on energy invested (EROEI)



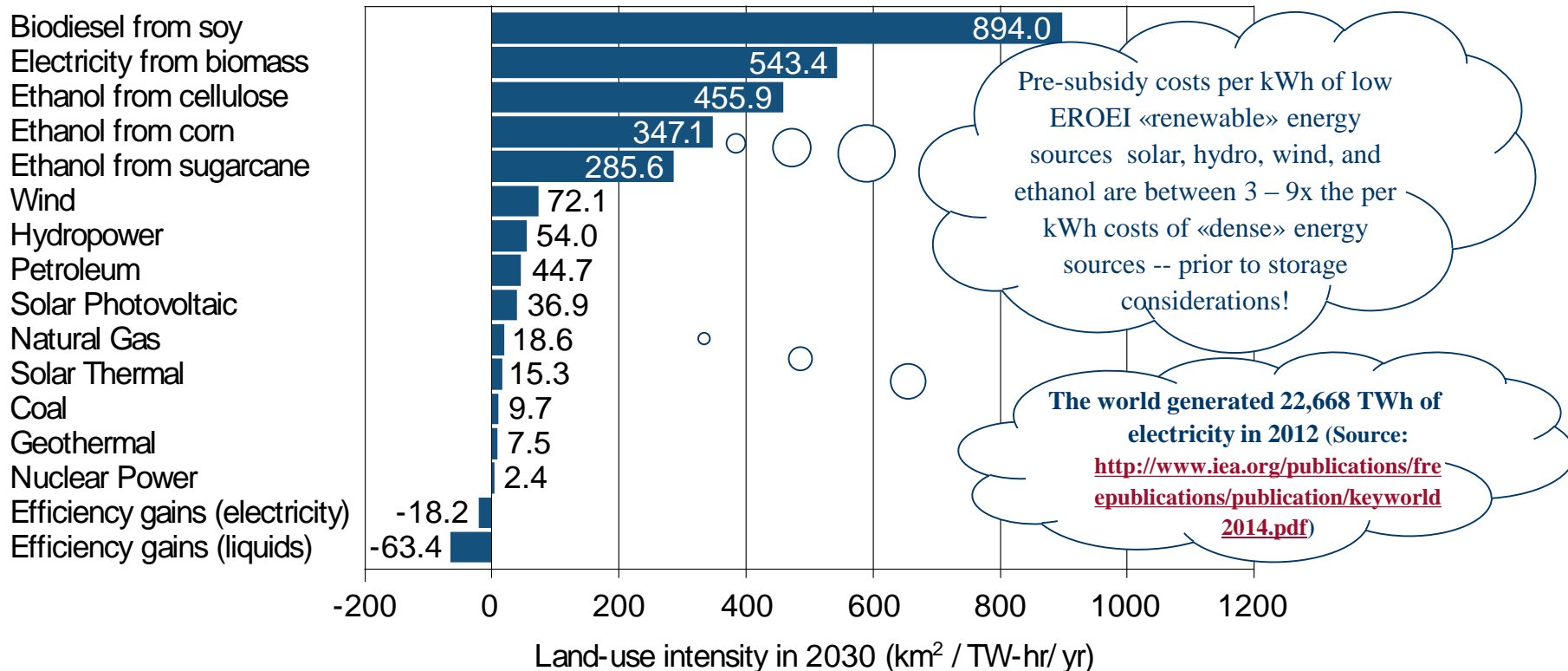
- 100 years ago, oil's EROEI was roughly 100:1 in "oil just below the ground" Siberia and Texas (offshore drilling EROEI: 5:1!)
- Over the past decades, energy production averaged "only" some 5% of GDP or an EROEI of 20:1
- As such, energy supply's economic significance is thus viewed as "minor" by mainstream economists and investors
- A declining EROEI will fundamentally change macro allocations and dense energy asset valuations (scarcity factor)
- *Upshot: dense energy and energy infrastructure should be strategic growth markets featuring rising asset prices!*

Sources: Euan Mearns, Resource Insights, Dr. Robert Hall, EIA; <http://Gregor.us>

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Projected land-use intensity per terawatt-hour per year (The lower the EROEI, the greater the land use intensity and cost!)



Source: <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0006802>. Please note: values shown are for 2030, as measured in km² of impacted area in 2030 per terawatt-hour produced/ conserved in that year. Numbers provided are the midpoint between the high and low estimates for different techniques. For liquid fuels, energy loss from internal combustion engines is not included in this calculation.

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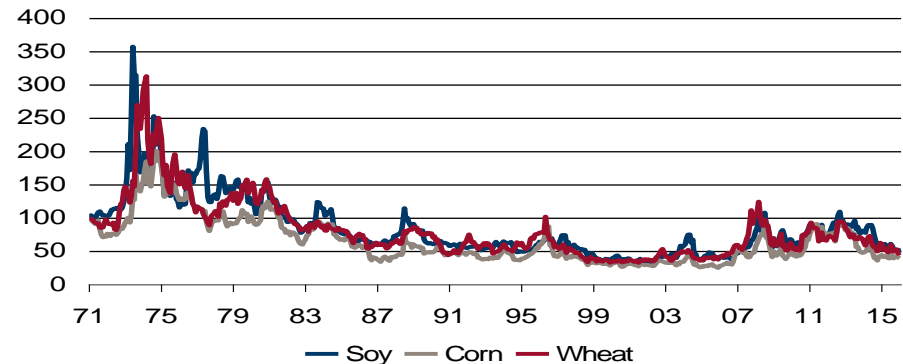
Agricultural assets

Capitalize on scarcity via real assets amidst unprecedented global money printing

Crops are effectively water sales/exports!!!



Real grain prices in current US cents, deflated using CPI



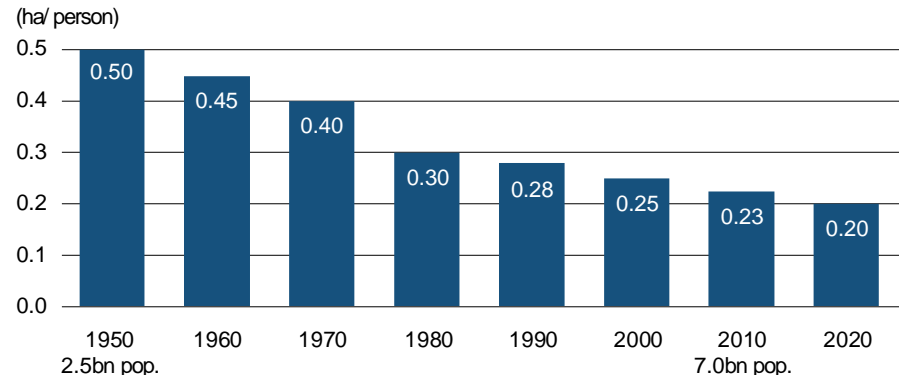
Source: Bloomberg, Credit Suisse / IDC

Agriculture: scarcity play

Agriculture assets, especially non-US farmland, water, and infrastructure/fertilizer-related, remain attractive given:

- *Constructive strategic supply/demand metrics* and the likelihood of substantially higher grain prices
- A meat-based diet requires about 6x the grains and 11x the water as a grain-based diet; EM consuming more!
- The positive implications of higher secular grain prices for farmer incomes and equipment purchases

Per capita world arable land is dwindling (as is water)



Sources: FAOSTAT, UN, Environmental Health Perspectives
(Data are rough estimates and can vary depending on assumptions – data shows relative trend)

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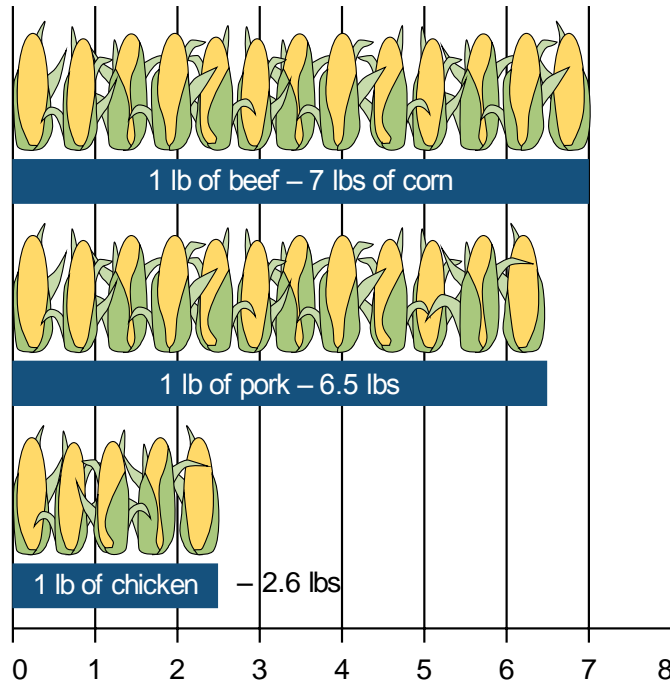
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Dietary shift to increase demand for grains and farmland

Meat production is very grain and water intensive

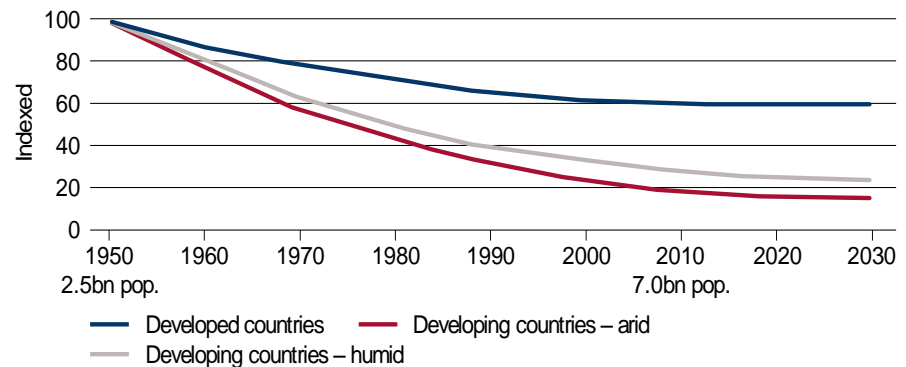
Meat production is feedstock intensive



Dietary shift towards more EM meat consumption will increase demand for grains and farmland as meat production is very grain intensive

Moreover, between 1,150 – 2,000 liters of water are necessary to produce one kg of wheat. In contrast, some 16,000 liters are required to produce one kg of beef (or, between 8 – 14x as much water!)

Indexed per capita water availability compared to 1950



Source: World Bank

Sources: USDA; Arjen Hoekstra, University of Twente, World Bank, worldwater.org

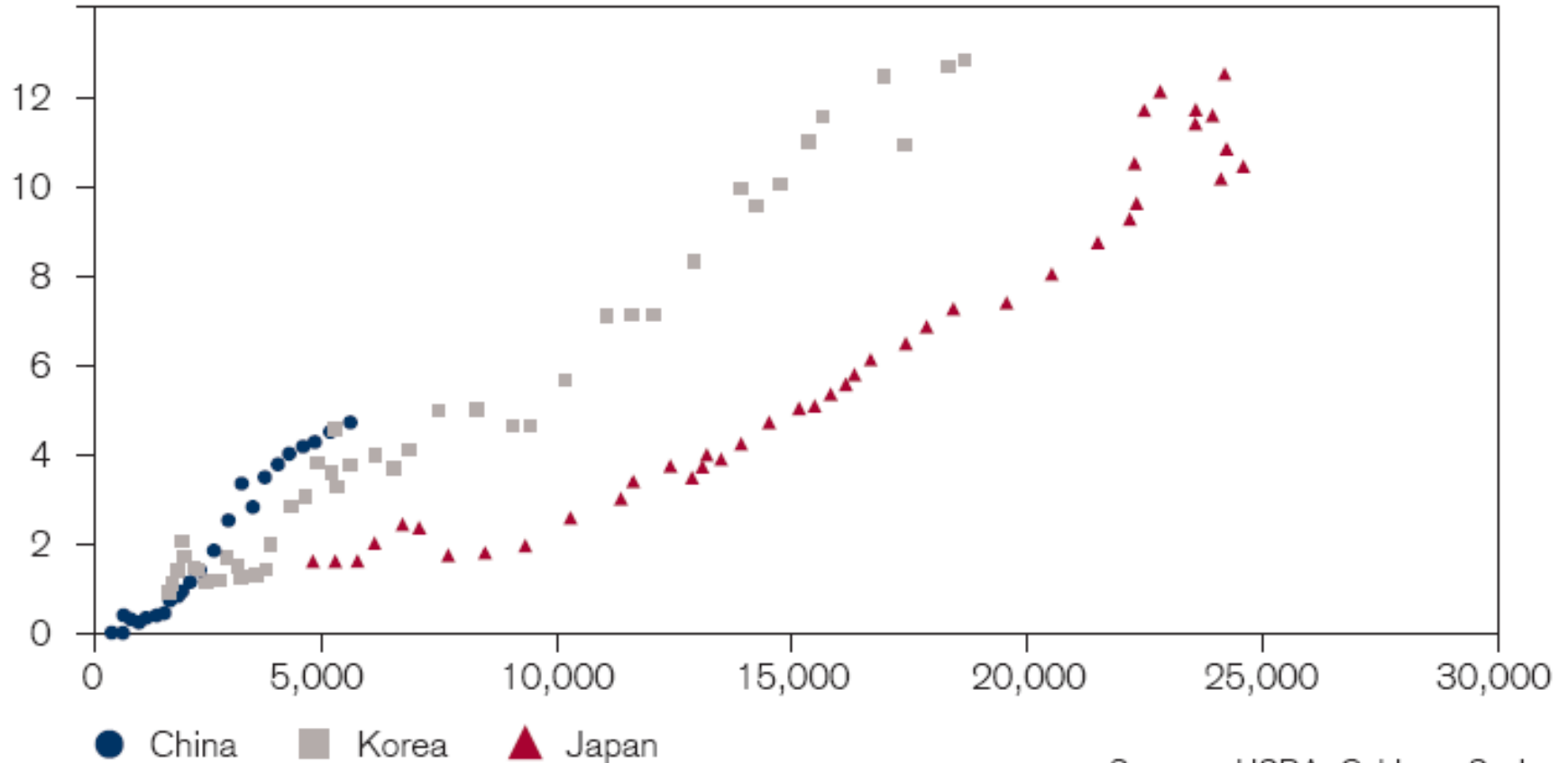
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Beef consumption vs. real USD GDP per capita in PPP terms (Kg of beef vertical axis, real GDP per capita horizontal axis)



Sources: USDA, Goldman Sachs

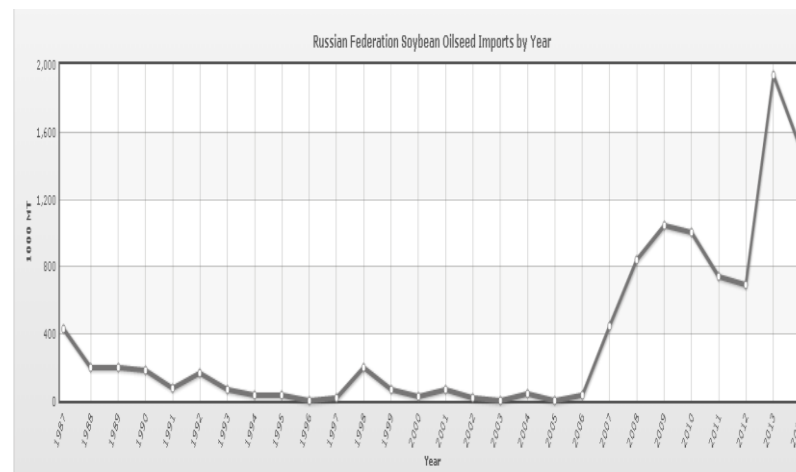
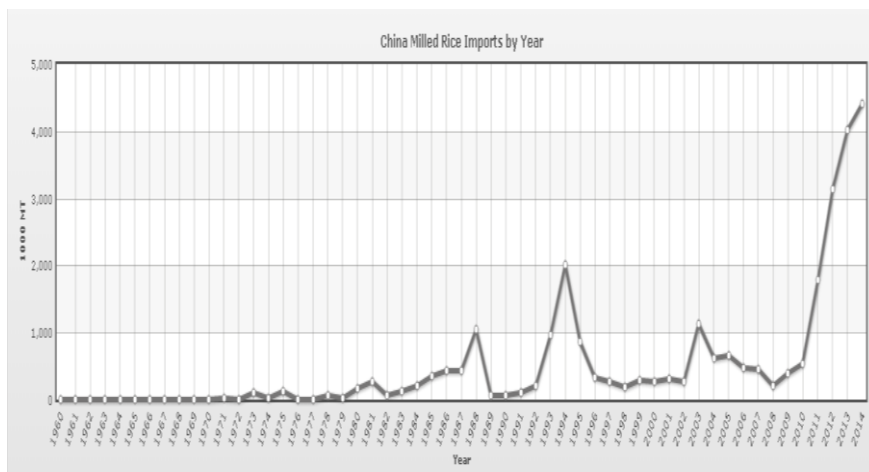
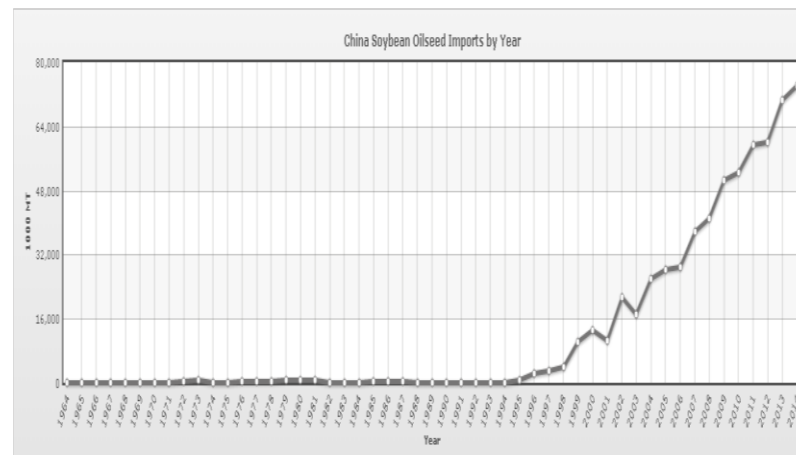
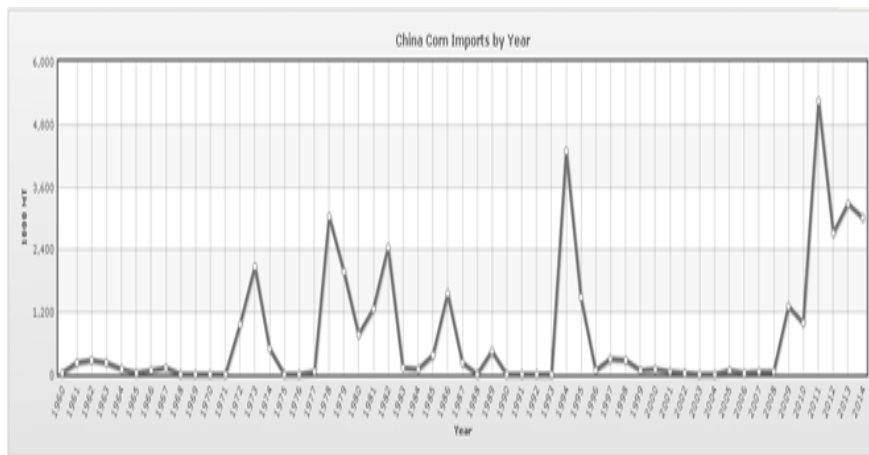
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Chinese and Russian grain imports in metric tons



Sources: USDA, www.indexmundi.com/agriculture

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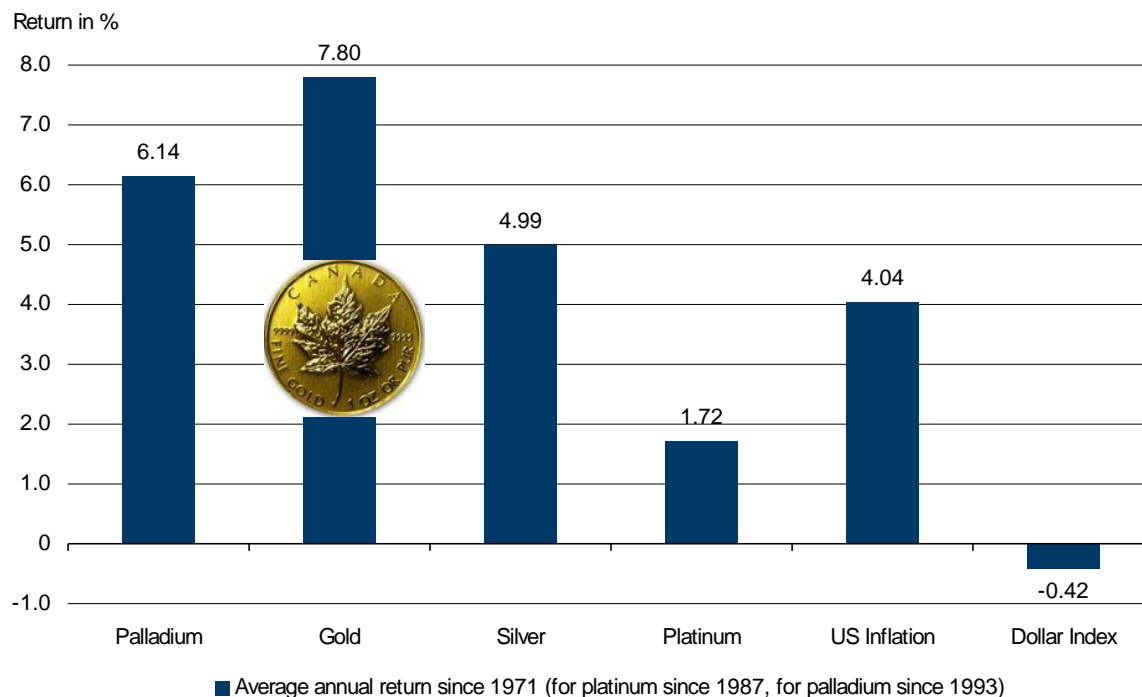
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Physical gold, a monetary reserve asset

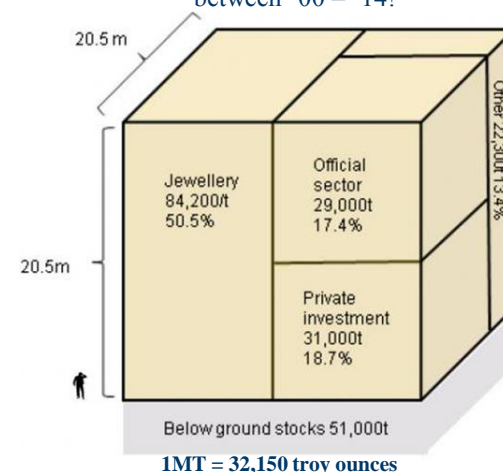
Capitalize on scarce real money (gold & silver) protection amidst unprecedented global money printing

(An ounce of gold bought a tailored suit 100 years ago just as it does today; today the \$ cost of that suit is between 50x – 100x higher)



(The Bretton Woods dollar gold standard was terminated in 1971)

Current value of all above ground gold: about \$6.0trn
Global stock & bond valuations up \$8.5trn p.a. on avg between '00 – '14!



Source: Bloomberg, Credit Suisse / IDC

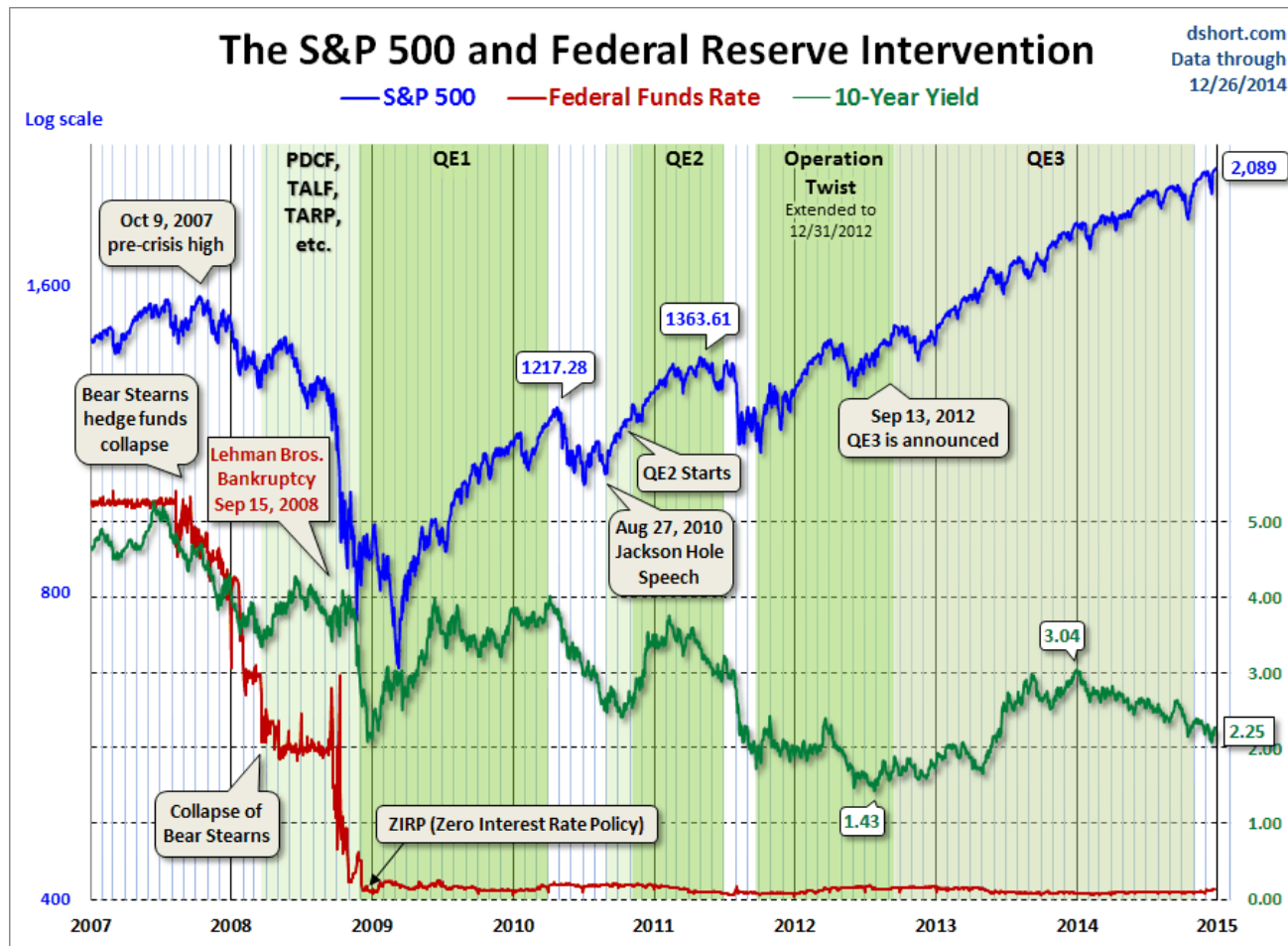
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Does QE Bond-Buying Lower Rates or Raise SP500?



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