

**IPPFA Midwest Pension Conference
Lake Geneva, Wisconsin**

Charts & Graphs!

What the heck do they mean?

10:00 AM to 10:50 AM
Thursday, October 3, 2013

Gary Karshna

Capital Gains Incorporated

8060 W. Oakton Street, Suite 102, Niles, IL 60714

(847) 318-9975

gkarshna@capitalgainsinc.com



Types of Charts Used by Investment Professionals

Vertical Bar Charts

Horizontal Bar Charts

Scatter Graphs

Pie Charts

Line Graphs

Filled Line Graphs



Institutions Generating Financial Charts and Graphs

Morningstar

Bloomberg

Chicago Tribune

Wall Street Journal

BusinessWeek Magazine

Financial Times

Barron's

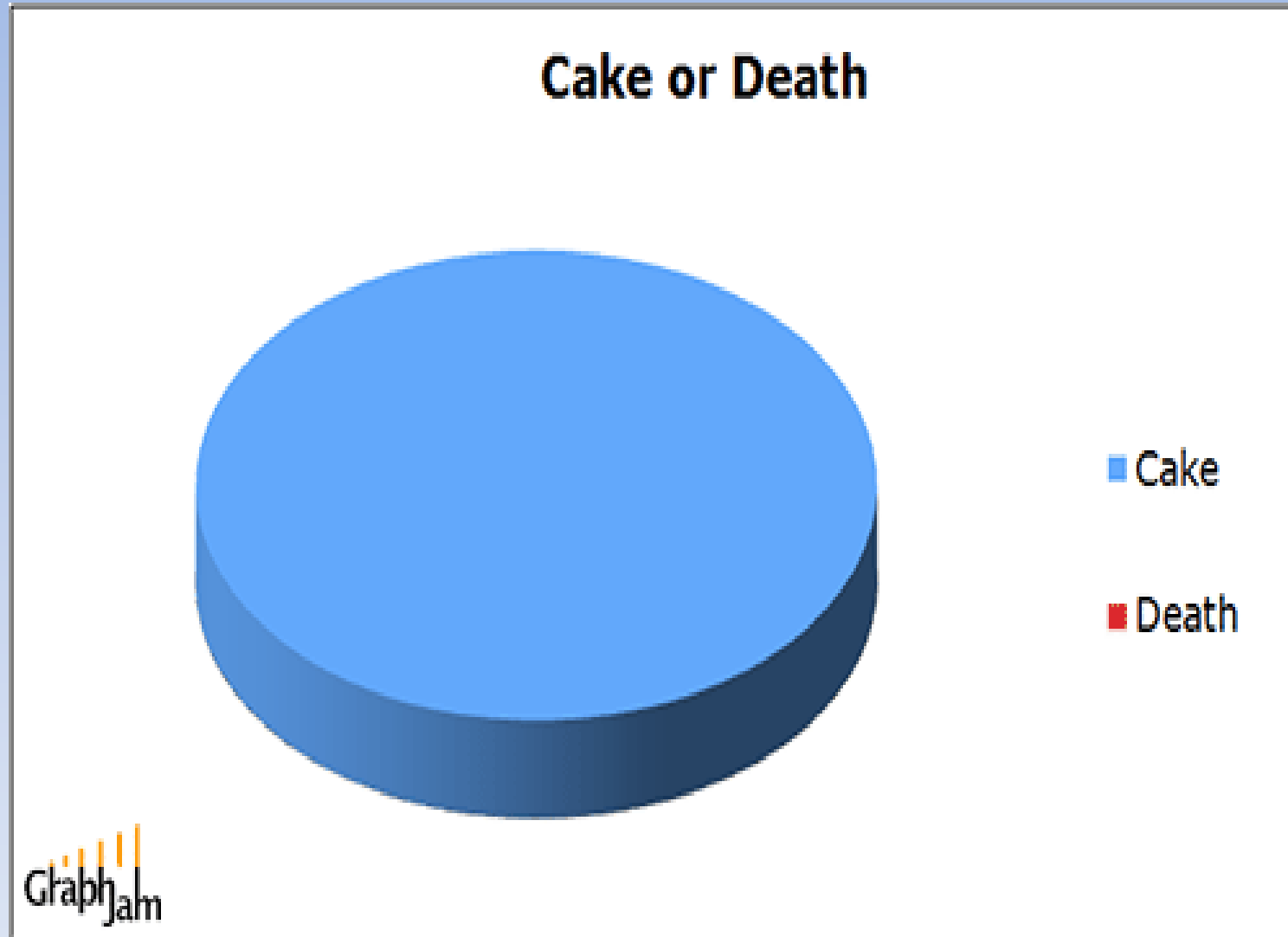
The Economist Magazine

Brokerage Firms

Research Organizations

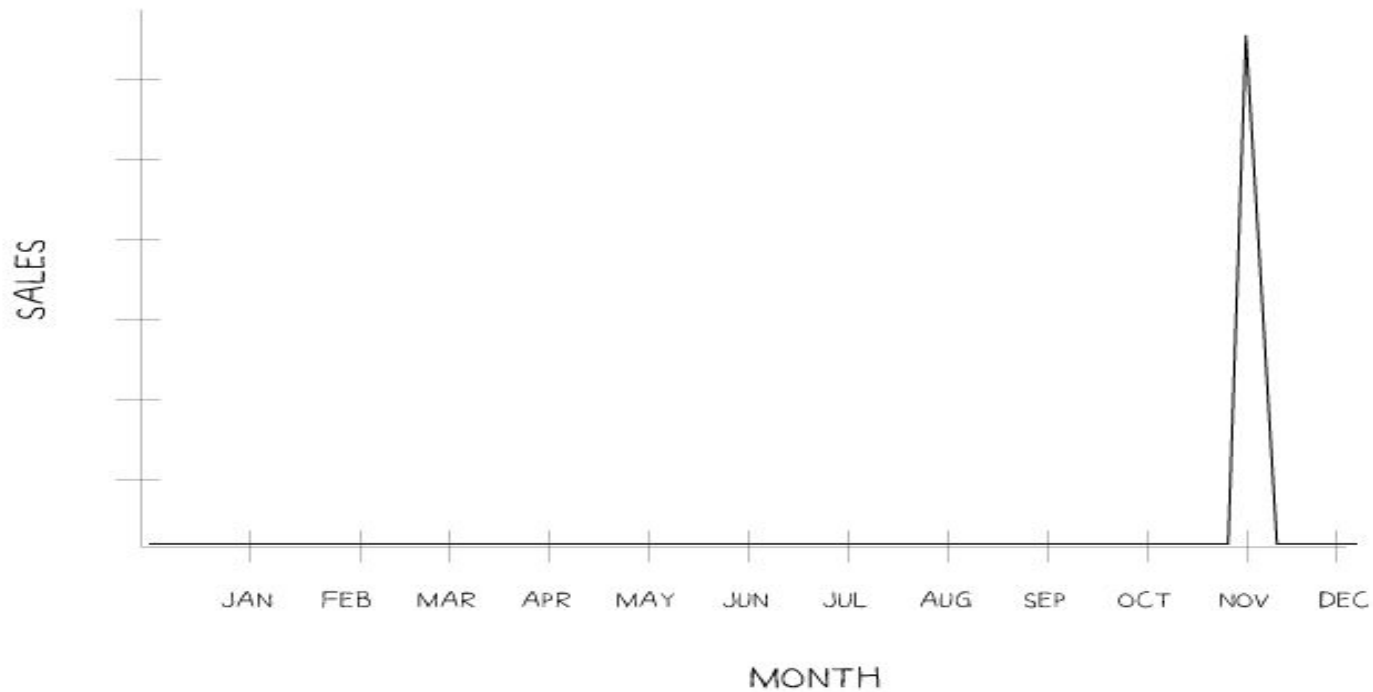
Your Investment Manager or Consultant

Some Charts are Easy to Read & Understand



Some Slides Need No Explanation!!!!

CRANBERRY SAUCE SALES

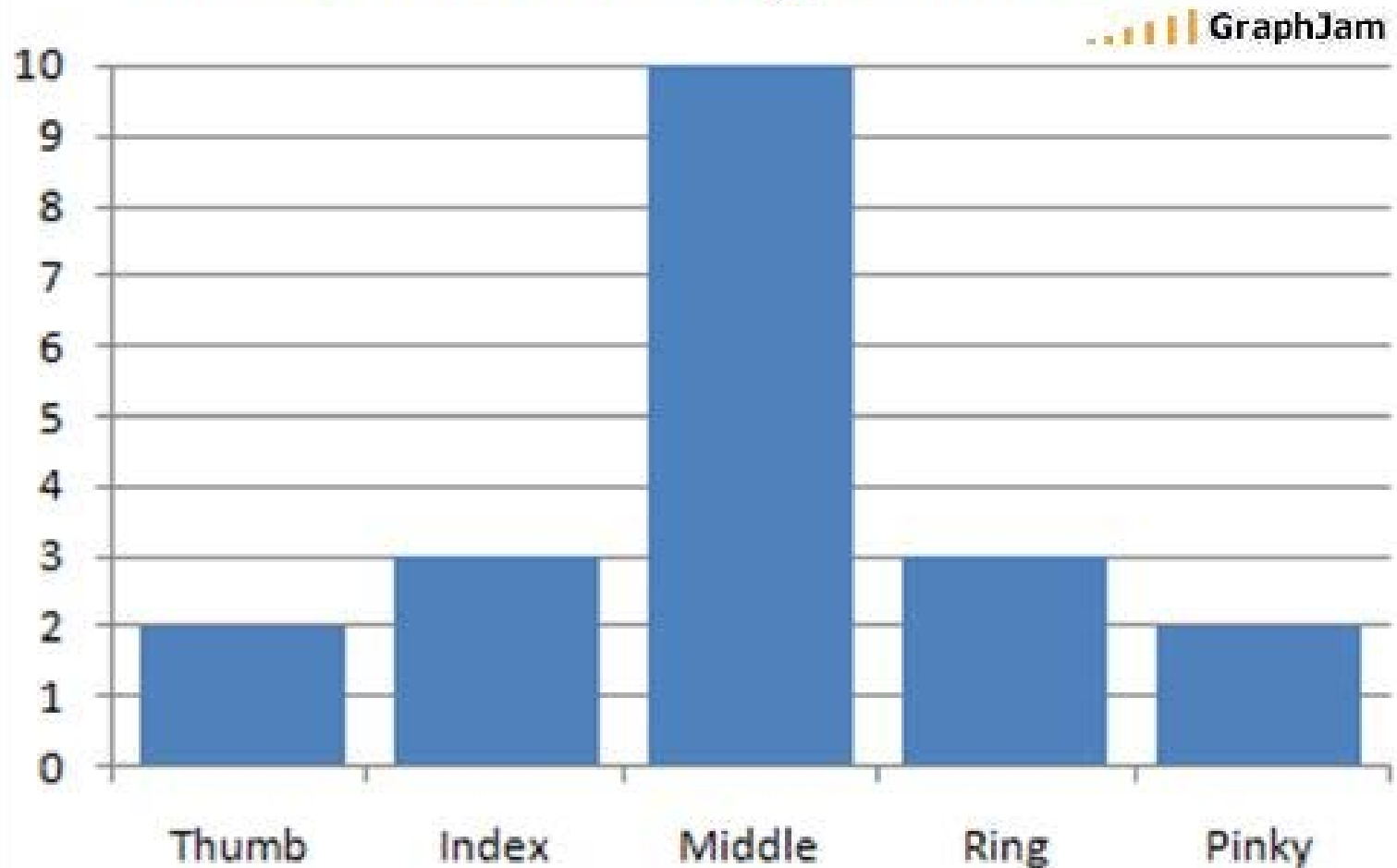


HOTCHKISSCOMICS.COM

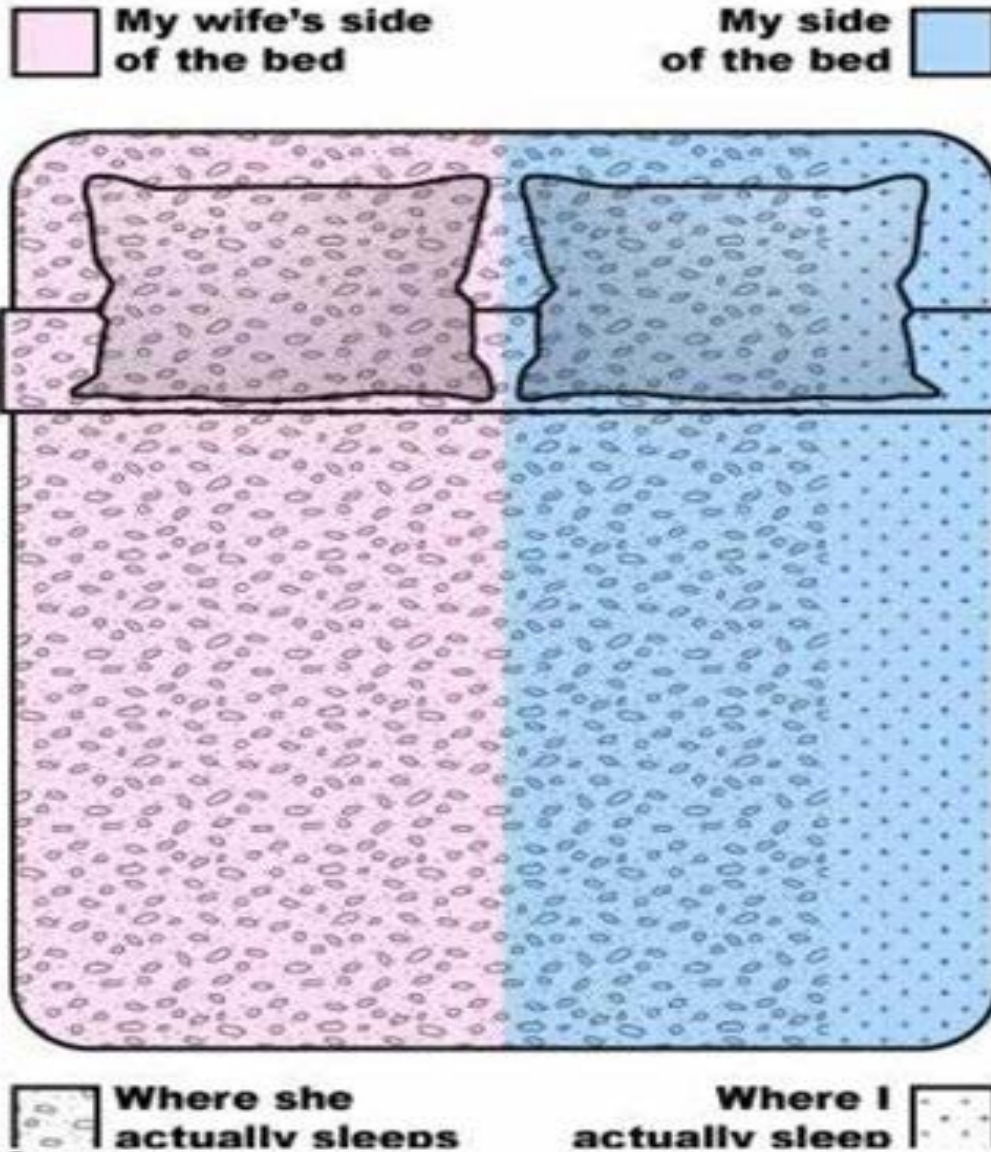
I found this on CupofZup.com

Or This One!!!

Usefulness of fingers in traffic



Scatter Graph



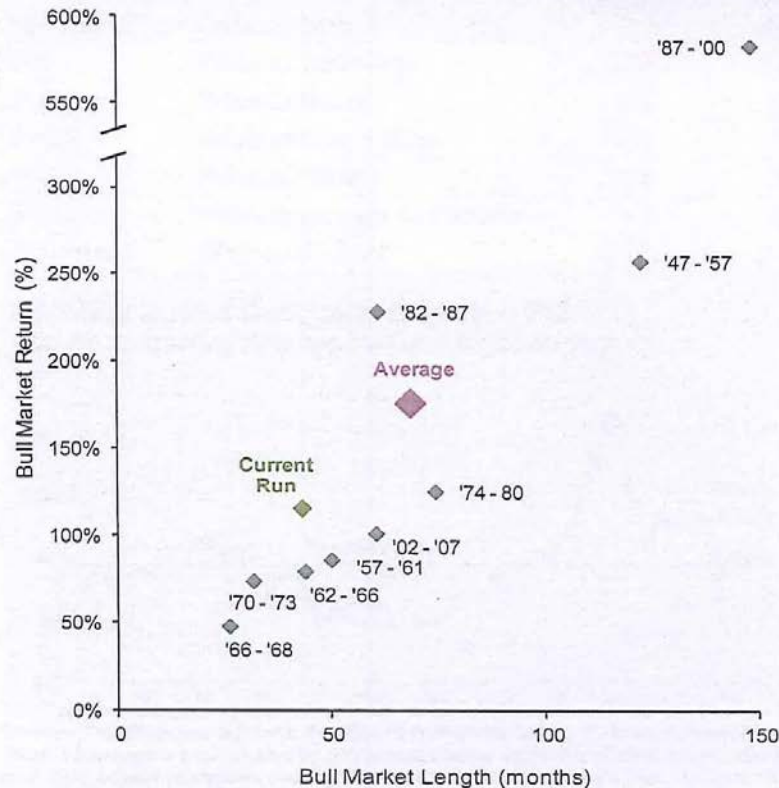
But Some Do!

MARKET
INSIGHTS

Bull and Bear Markets

Equities

Historical Bull Markets: Duration and Magnitude*



Bear Market Cycles vs. Subsequent Bull Runs

Market Peak	Market Low	Bear Market Return	Length of Decline	Bull Run	Length of Run	Yrs. to Reach Old Peak
5/29/46	5/19/47	-28.6%	12	257.6%	122	3.1 yrs.
7/15/57	10/22/57	-20.7%	3	86.4%	50	0.9 yrs.
12/12/61	6/26/62	-28.0%	6	79.8%	44	1.2 yrs.
2/9/66	10/7/66	-22.2%	8	48.0%	26	0.6 yrs.
11/29/68	5/26/70	-36.1%	18	74.2%	31	1.8 yrs.
1/5/73	10/3/74	-48.4%	21	125.6%	74	5.8 yrs.
11/28/80	8/12/82	-27.1%	20	228.8%	60	0.2 yrs.
8/25/87	12/4/87	-33.5%	3	582.1%	148	1.6 yrs.
3/24/00	10/9/02	-49.1%	31	101.5%	60	4.6 yrs.
10/9/07	3/9/09	-56.8%	17	112.9%	43*	
Average:		-35.0%	14 mo's	176.0%	68 mo's	2.2 yrs.

Source: Standard & Poor's, FactSet, J.P. Morgan Asset Management.

Chart is for illustrative purposes only. Past performance does not guarantee future results. A bear market is defined as a peak-to-trough decline in the S&P 500 Index (price only) of 20% or more. The bull run data reflect the market expansion from the bear market low to the subsequent market peak. All returns are S&P 500 Index returns and do not include dividends. *Current bull run from 3/9/09 through 9/28/12.

Data are as of 9/30/12.



Morningstar – Good Equity Portfolio

Northwest Quadrant



Risk Analysis

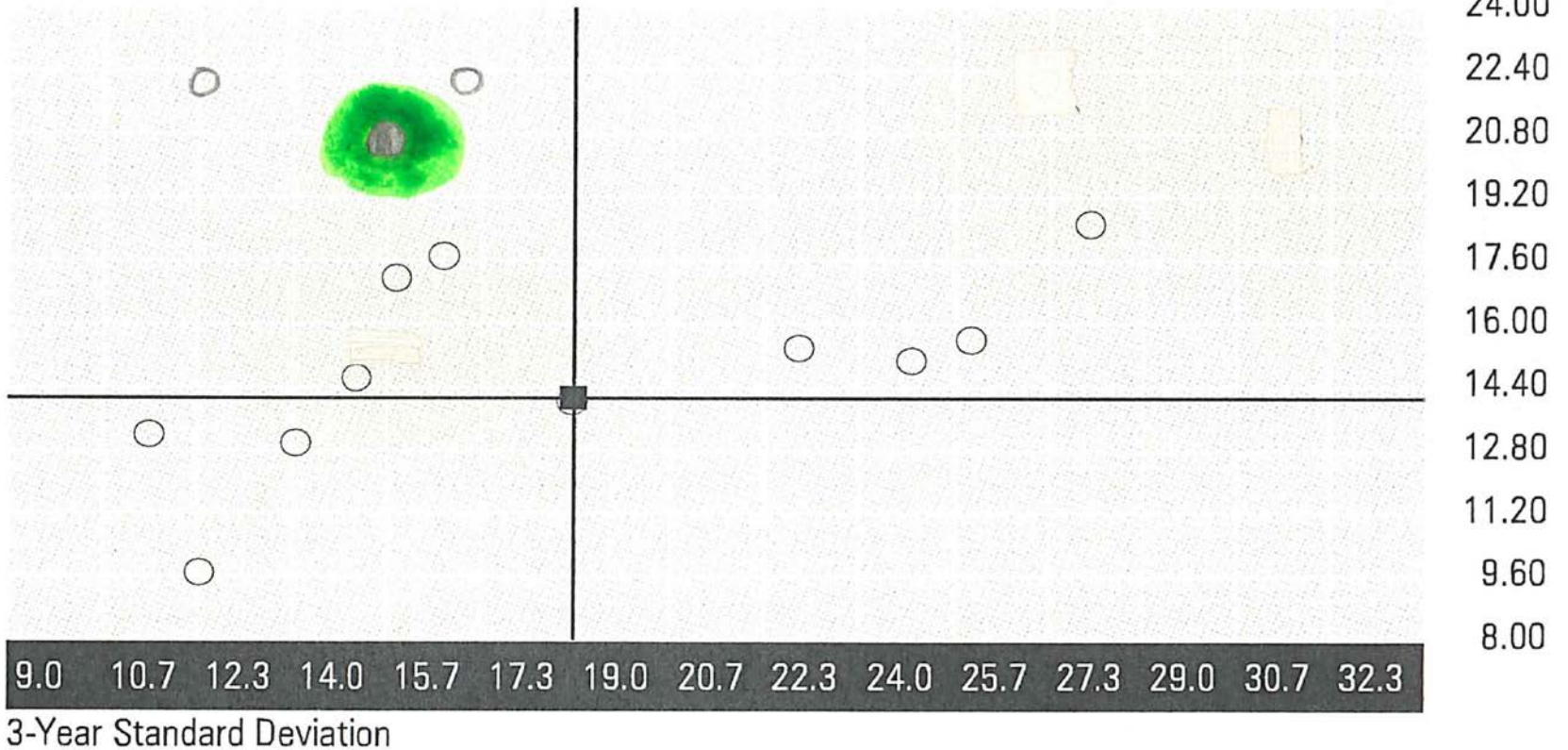
Risk/Reward Scatterplot

● Portfolio

○ Individual Holding

■ B-mark

3-Year Mean



Morningstar – Bad Equity Portfolio

Southeast Quadrant



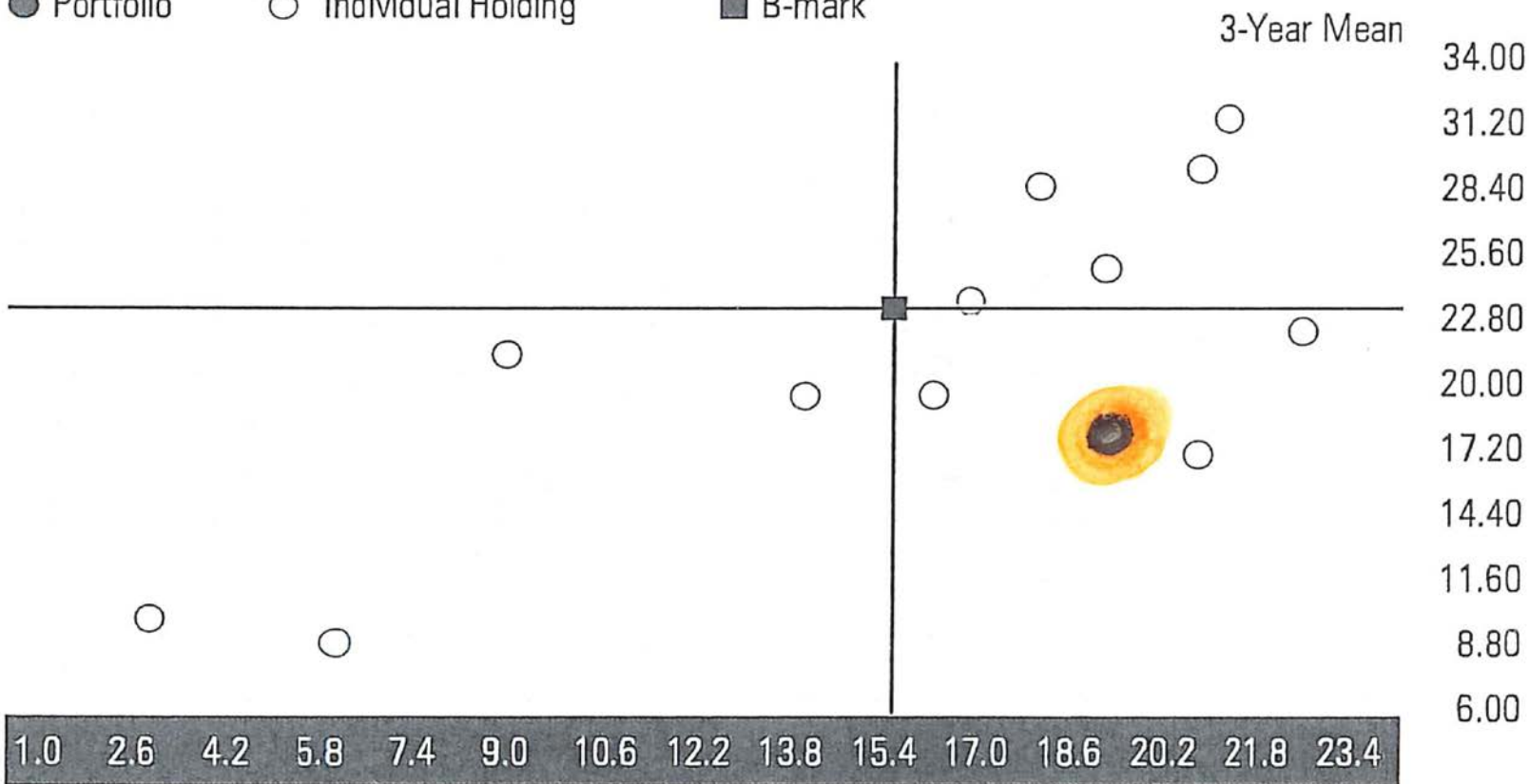
Risk Analysis

Risk/Reward Scatterplot

● Portfolio

○ Individual Holding

■ B-mark



3-Year Standard Deviation

MARKET INSIGHTS

Asset Class Returns

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2Q'13	YTD '13	10-yrs. '03 - '12	
												Cum.	Ann.
MSCI EME 56.3%	REITs 31.6%	MSCI EME 34.5%	REITs 35.1%	MSCI EME 39.8%	Barclays Agg 5.2%	MSCI EME 79.0%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Russell 2000 3.1%	Russell 2000 15.9%	MSCI EME 376.0%	MSCI EME 16.9%
Russell 2000 47.3%	MSCI EME 26.0%	DJ UBS Cmdty 21.4%	MSCI EME 32.6%	DJ UBS Cmdty 16.2%	Cash 1.8%	MSCI EAFE 32.5%	Russell 2000 26.9%	Barclays Agg 7.8%	MSCI EME 18.6%	S&P 500 2.9%	S&P 500 13.8%	REITs 204.6%	REITs 11.8%
MSCI EAFE 39.2%	MSCI EAFE 20.7%	MSCI EAFE 14.0%	MSCI EAFE 26.9%	MSCI EAFE 11.6%	Market Neutral 1.1%	REITs 28.0%	MSCI EME 19.2%	Market Neutral 4.5%	MSCI EAFE 17.9%	Market Neutral 1.4%	REITs 5.8%	Russell 2000 152.8%	Russell 2000 9.7%
REITs 37.1%	Russell 2000 18.3%	REITs 12.2%	Russell 2000 18.4%	Market Neutral 9.3%	Asset Alloc. -24.0%	Russell 2000 27.2%	DJ UBS Cmdty 16.8%	S&P 500 2.1%	Russell 2000 16.3%	Cash 0.0%	Asset Alloc. 4.5%	MSCI EAFE 130.3%	MSCI EAFE 8.7%
S&P 500 28.7%	Asset Alloc. 12.5%	Asset Alloc. 8.3%	S&P 500 15.8%	Asset Alloc. 7.4%	Russell 2000 -33.8%	S&P 500 26.5%	S&P 500 15.1%	Cash 0.1%	S&P 500 16.0%	Asset Alloc. -0.6%	MSCI EAFE 4.5%	Asset Alloc. 117.7%	Asset Alloc. 8.1%
Asset Alloc. 25.1%	S&P 500 10.9%	Market Neutral 6.1%	Asset Alloc. 15.2%	Barclays Agg 7.0%	DJ UBS Cmdty -35.6%	Asset Alloc. 22.2%	Asset Alloc. 12.5%	Asset Alloc. -0.6%	Asset Alloc. 11.3%	MSCI EAFE -0.7%	Market Neutral 2.2%	S&P 500 98.6%	S&P 500 7.1%
DJ UBS Cmdty 23.9%	DJ UBS Cmdty 9.1%	S&P 500 4.9%	Market Neutral 11.2%	S&P 500 5.5%	S&P 500 -37.0%	DJ UBS Cmdty 18.9%	MSCI EAFE 8.2%	Russell 2000 -4.2%	Barclays Agg 4.2%	REITs -2.1%	Cash 0.0%	Barclays Agg 65.7%	Barclays Agg 5.2%
Market Neutral 7.1%	Market Neutral 6.5%	Russell 2000 4.6%	Cash 4.8%	Cash 4.8%	REITs -37.7%	Barclays Agg 5.9%	Barclays Agg 6.5%	MSCI EAFE -11.7%	Market Neutral 0.9%	Barclays Agg -2.3%	Barclays Agg -2.4%	Market Neutral 61.5%	Market Neutral 4.9%
Barclays Agg 4.1%	Barclays Agg 4.3%	Cash 3.0%	Barclays Agg 4.3%	Russell 2000 -1.6%	MSCI EAFE -43.1%	Market Neutral 4.1%	Cash 0.1%	DJ UBS Cmdty -13.3%	Cash 0.1%	MSCI EME -8.0%	MSCI EME -9.4%	DJ UBS Cmdty 49.3%	DJ UBS Cmdty 4.1%
Cash 1.0%	Cash 1.2%	Barclays Agg 2.4%	DJ UBS Cmdty 2.1%	REITs -15.7%	MSCI EME -53.2%	Cash 0.1%	Market Neutral -0.8%	MSCI EME -18.2%	DJ UBS Cmdty -1.1%	DJ UBS Cmdty -9.5%	DJ UBS Cmdty -10.5%	Cash 18.2%	Cash 1.7%

Asset Class

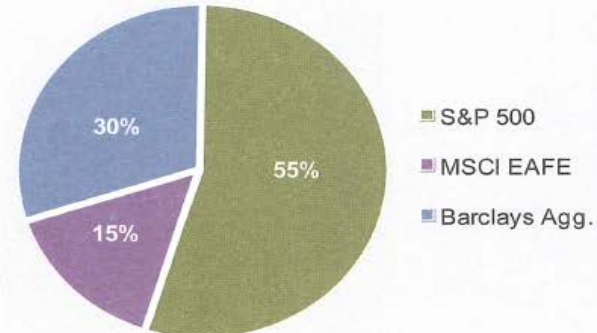
Source: Russell, MSCI, Dow Jones, Standard & Poor's, Credit Suisse, Barclays Capital, NAREIT, FactSet, J.P. Morgan Asset Management. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EMI, 25% in the Barclays Capital Aggregate, 5% in the Barclays 1-3m Treasury, 5% in the CS/Tremont Equity Market Neutral Index, 5% in the DJ UBS Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. All data represents total return for stated period. Past performance is not indicative of future returns. Data are as of 6/30/13, except for the CS/Tremont Equity Market Neutral Index, which reflects data through 5/31/13. "10-yrs" returns represent period of 1/1/03 - 12/31/12 showing both cumulative (Cum.) and annualized (Ann.) over the period. Please see disclosure page at end of index definitions. *Market Neutral returns include estimates found in disclosures. Data are as of 6/30/13.

MARKET INSIGHTS

Diversification and the Average Investor

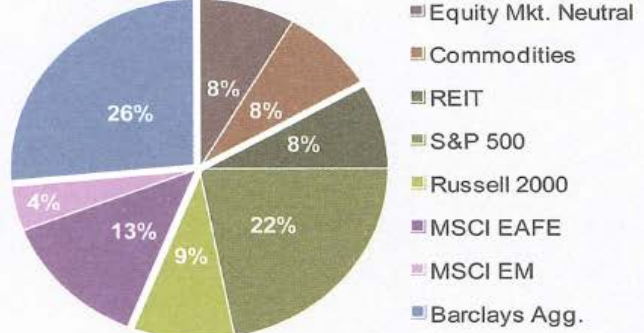
Maximizing the Power of Diversification (1994 – 2012)

Traditional Portfolio



Return: 7.43%
Standard Deviation: 10.80%

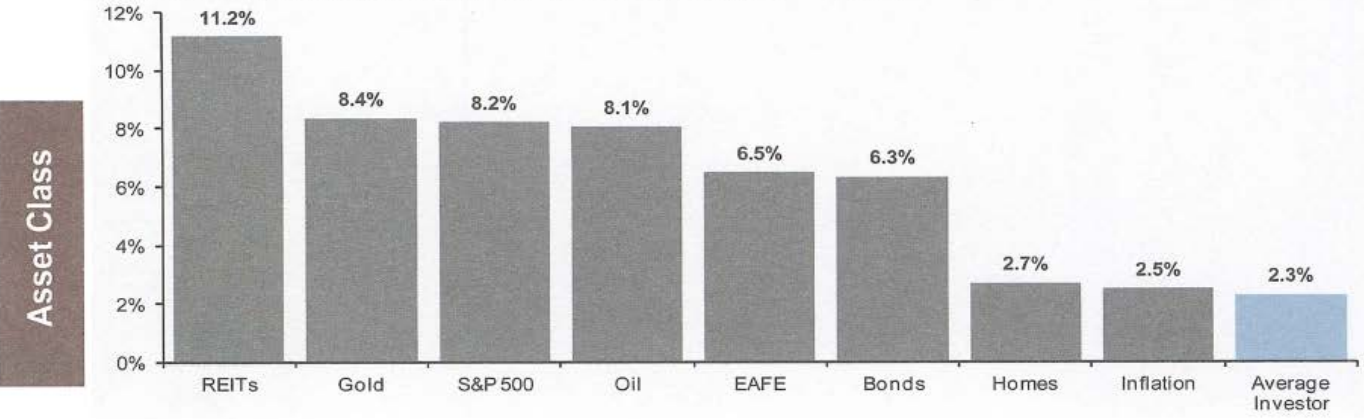
More Diversified Portfolio



Return: 7.72%
Standard Deviation: 9.87%

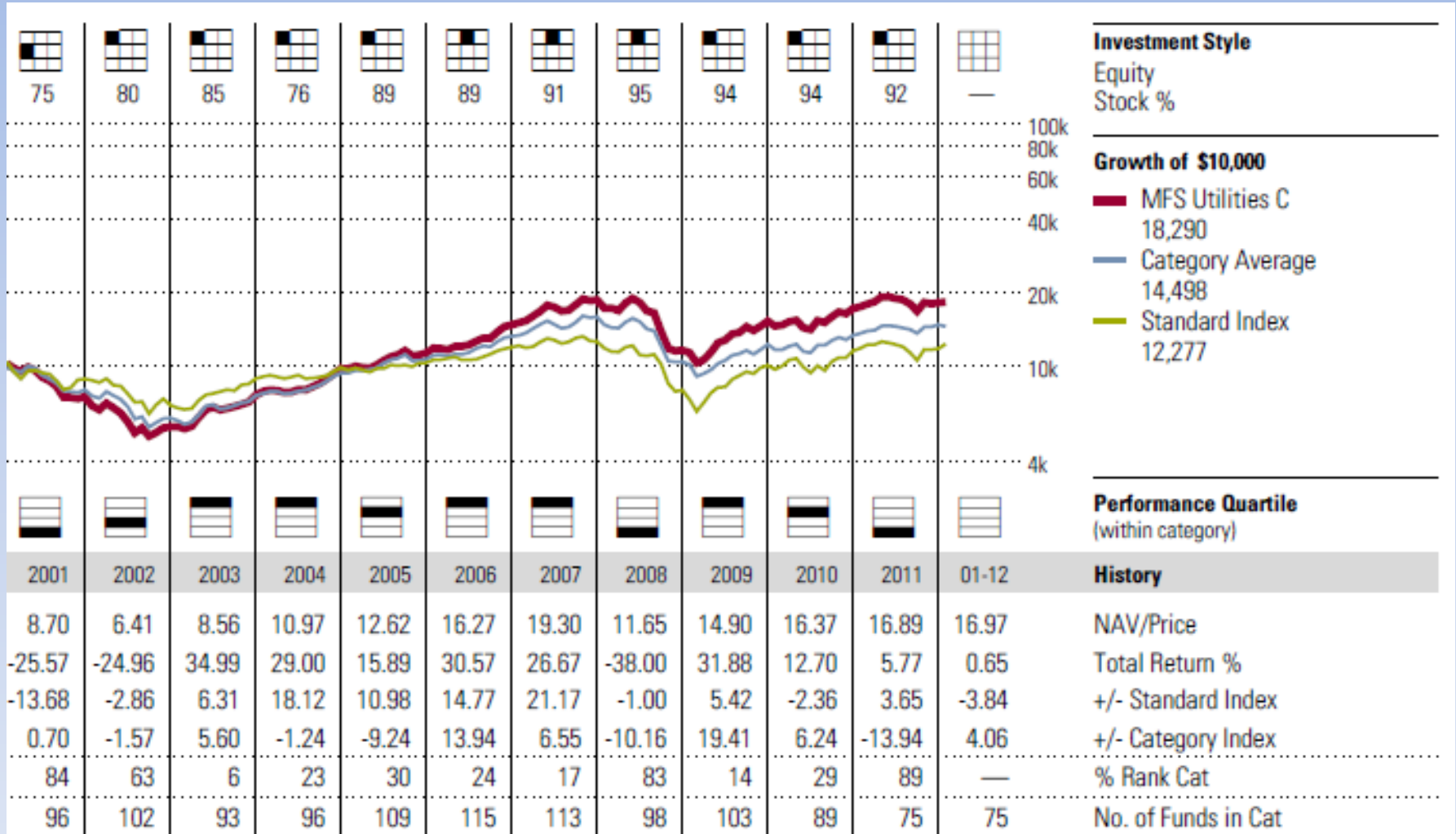
(Top) Indexes and weights of the traditional portfolio are as follows: U.S. Stocks: 55% S&P 500; U.S. Bonds: 30% Barclays Capital Aggregate; International Stocks: 15% MSCI EAFE. Portfolio with 25% in alternatives is as follows: U.S. Stocks: 22.2% S&P 500, 8.8% Russell 2000; International Stocks: 4.4% MSCI EM, 13.2% MSCI EAFE; U.S. Bonds: 26.5% Barclays Capital Aggregate; Alternatives: 8.3% CS/Tremont Equity Market Neutral: 8.3%, DJ/UBS Commodities: 8.3% NAREIT Equity REIT Index. Return and standard deviation calculated using Morningstar Direct. Charts are shown for illustrative purposes only. Past performance is not indicative of future returns. Diversification does not guarantee investment returns and does not eliminate risk of loss. Data are as of 6/30/13.

20-year Annualized Returns by Asset Class (1993 – 2012)

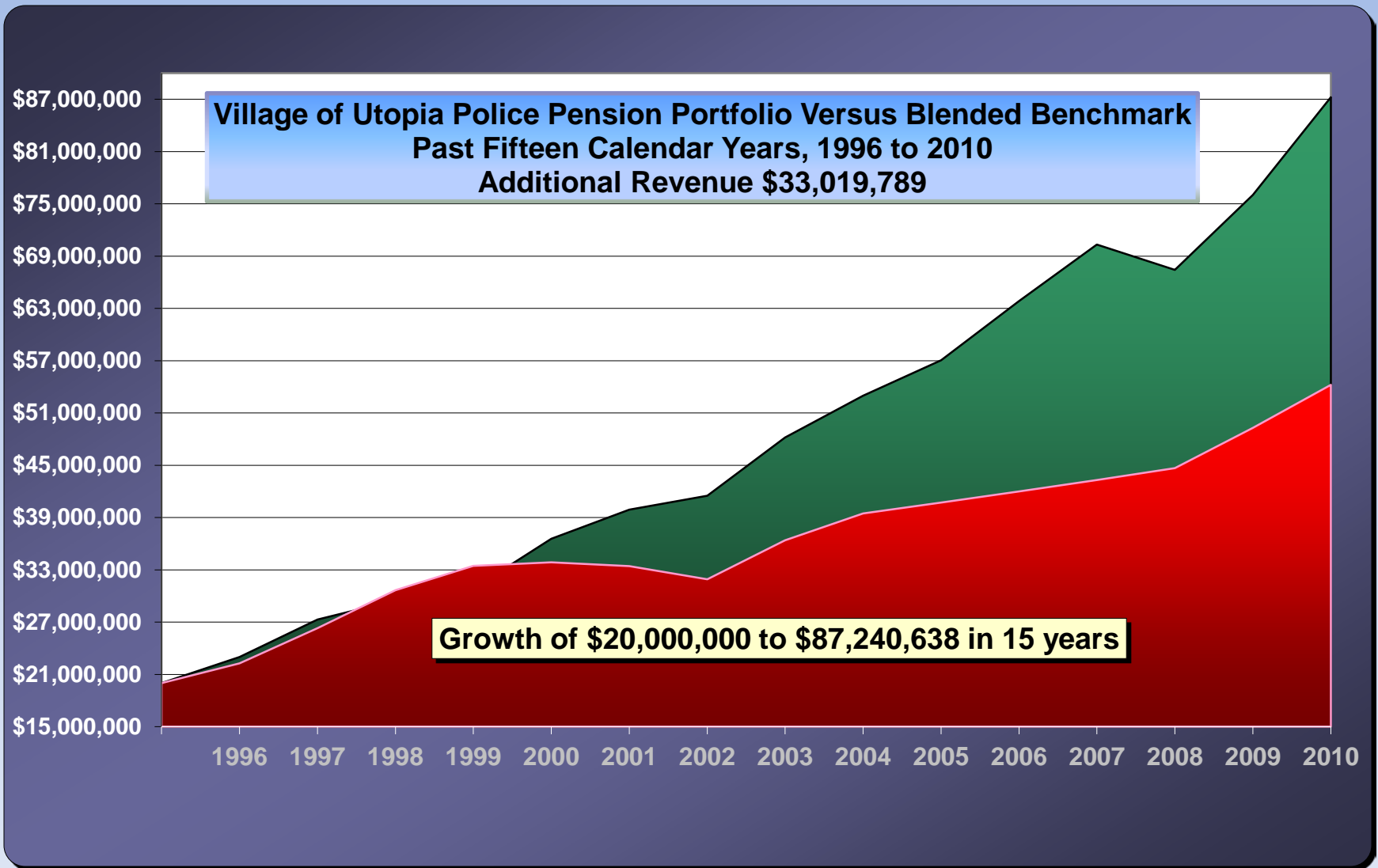


(Bottom) Indexes used are as follows: REITS: NAREIT Equity REIT Index, EAFE: MSCI EAFE, Oil: WTI Index, Bonds: Barclays Capital U.S. Aggregate Index, Homes: median sale price of existing single-family homes, Gold: USD/troy oz, Inflation: CPI. Average asset allocation investor return is based on an analysis by Dalbar Inc., which utilizes the net of aggregate mutual fund sales, redemptions and exchanges each month as a measure of investor behavior. Returns are annualized (and total return where applicable) and represent the 20-year period ending 12/31/12 to match Dalbar's most recent analysis.

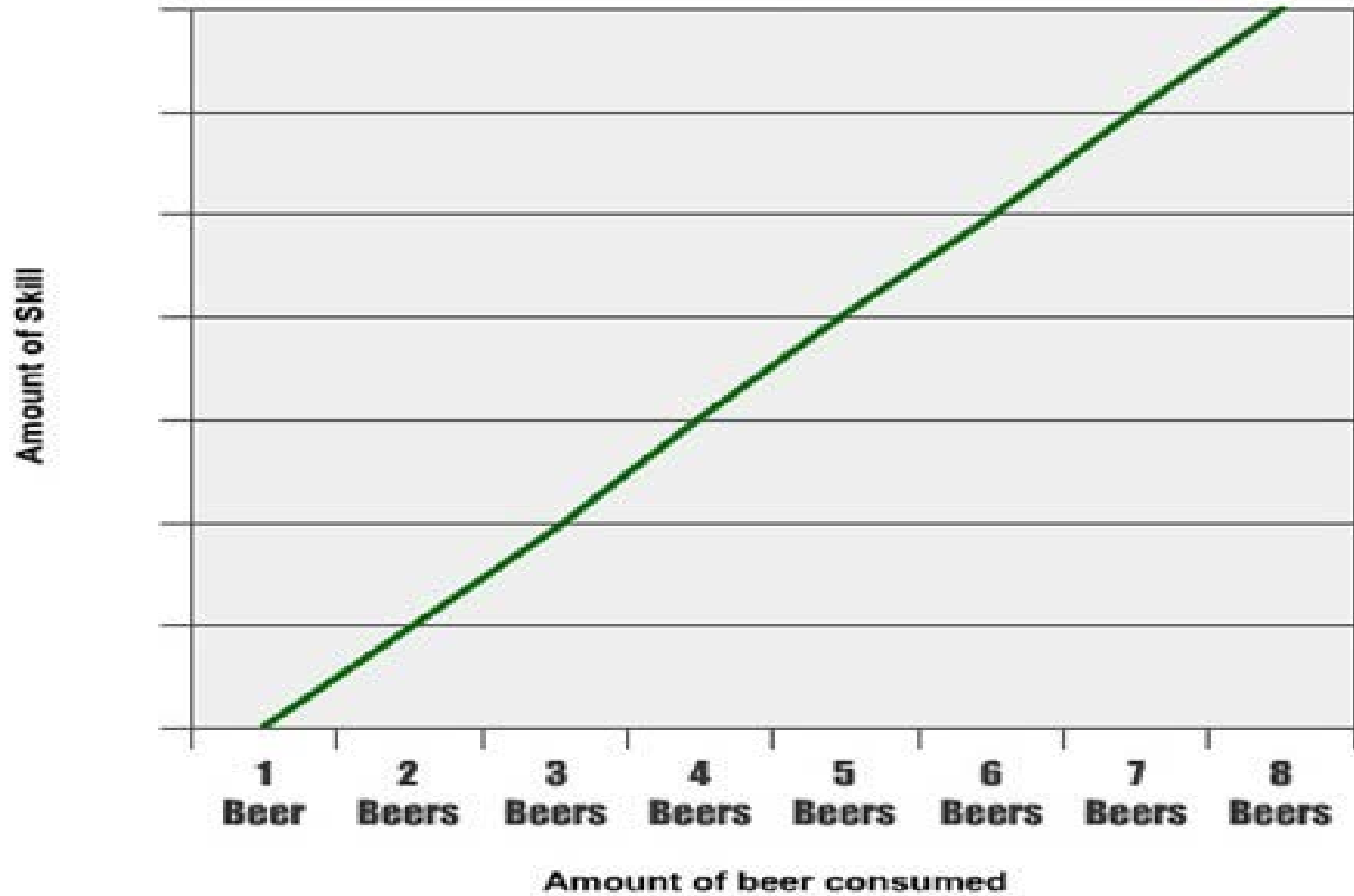
MFS Utility Mutual Fund vs S&P 500



Growth of \$20 million portfolio



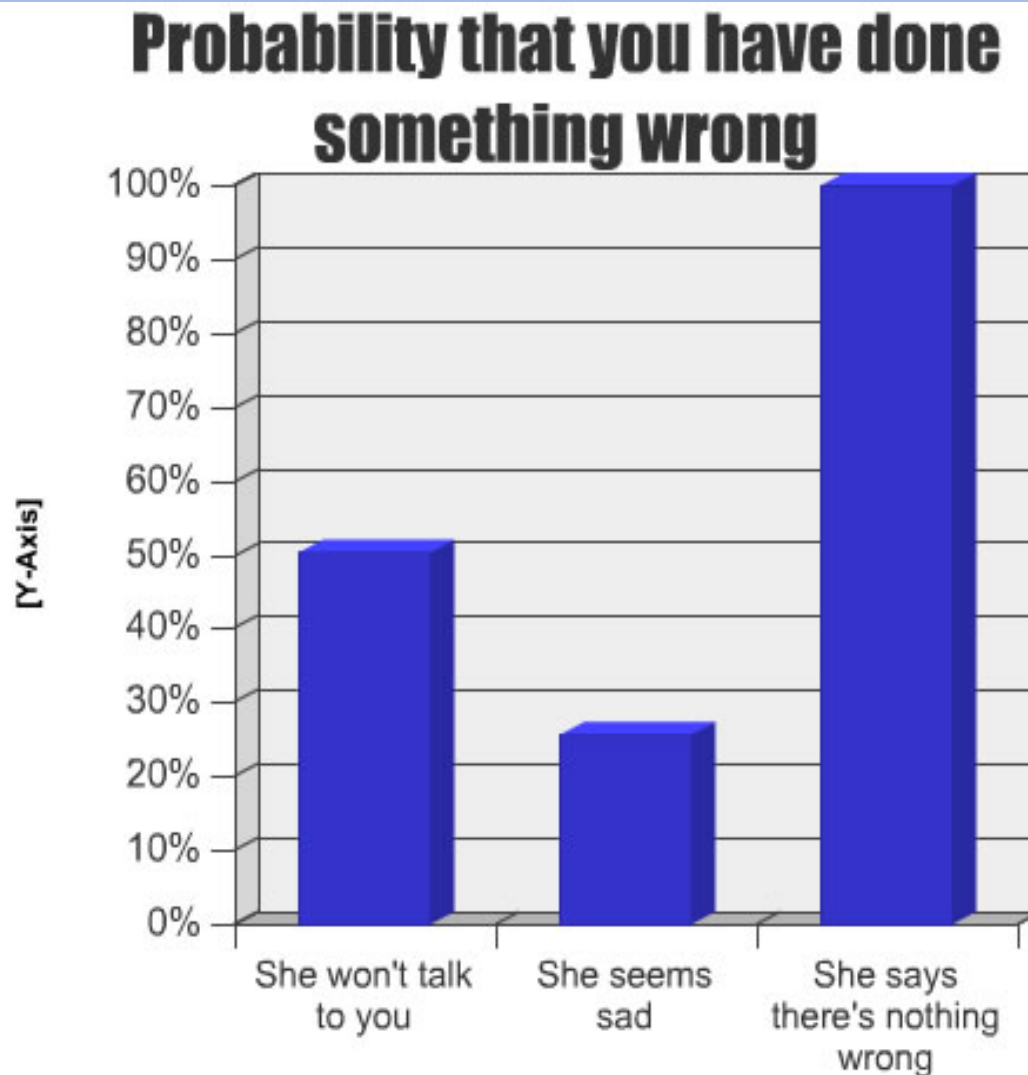
Pool Playing Skills



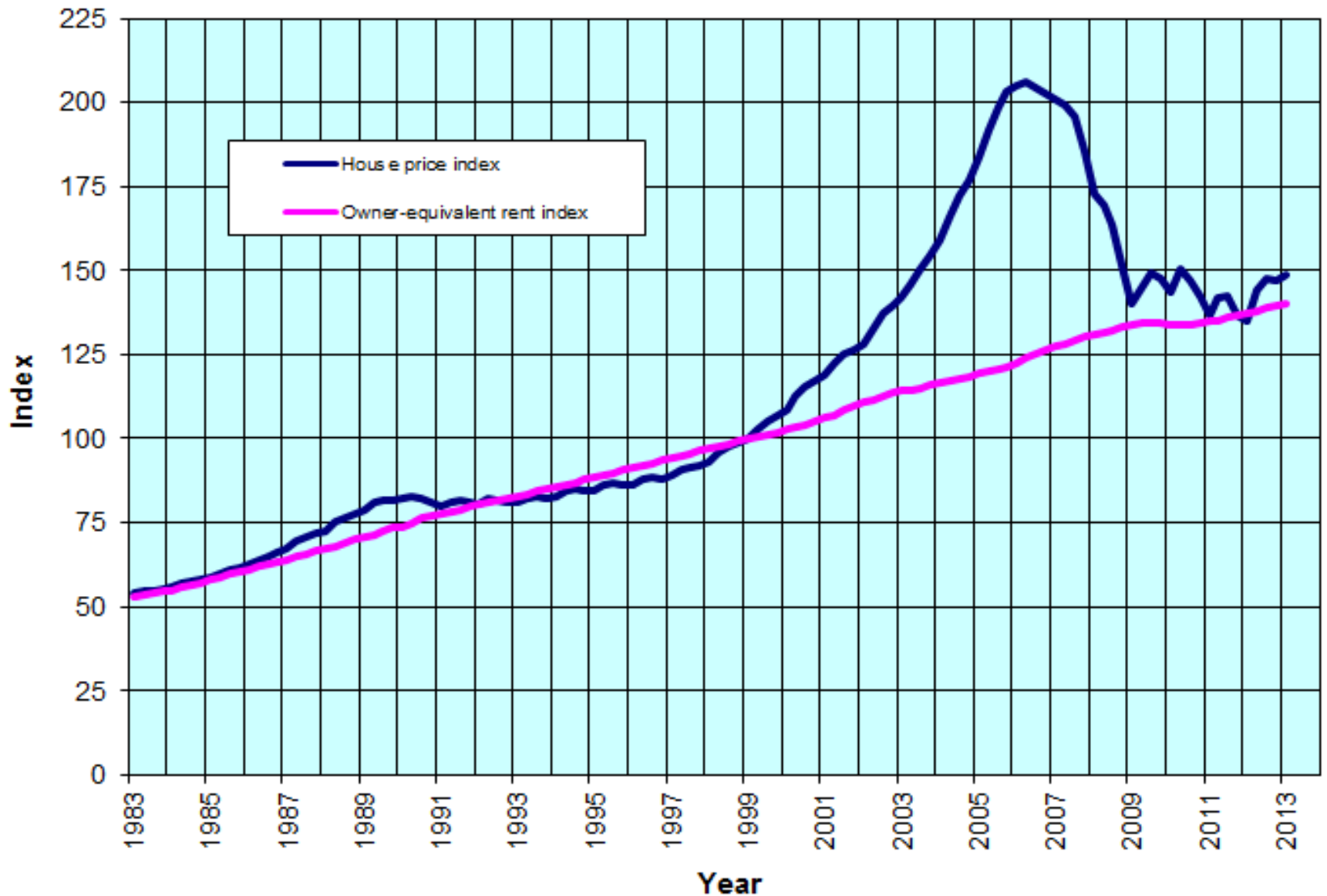
Chances of a Man Winning an Argument



Vertical Bar Chart of Spousal Issues



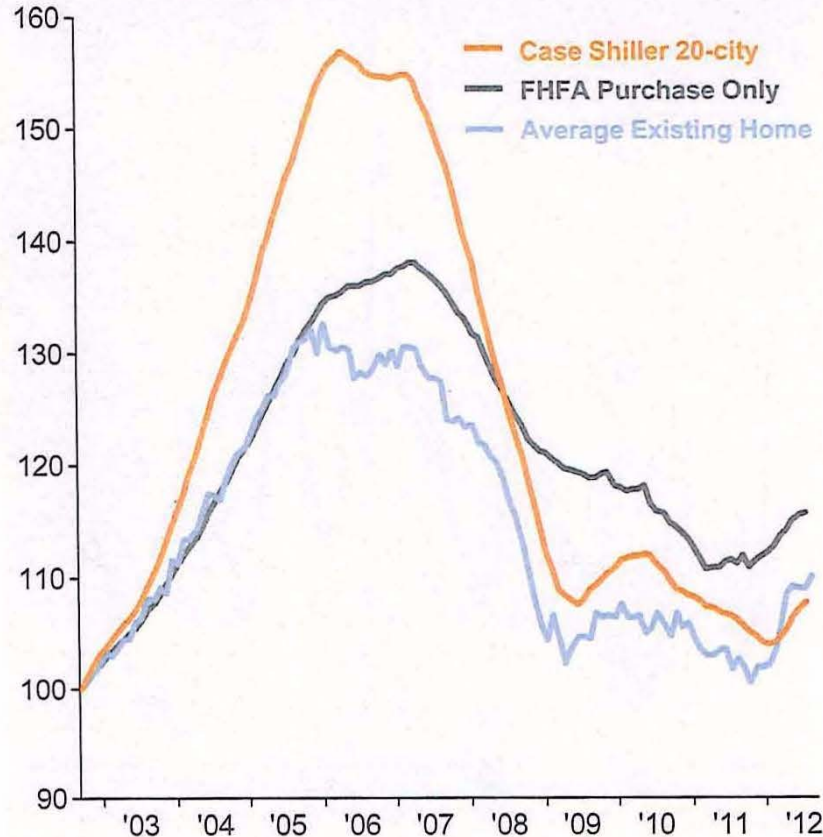
U.S. House Prices vs. Owner-Equivalent Rent



Economy

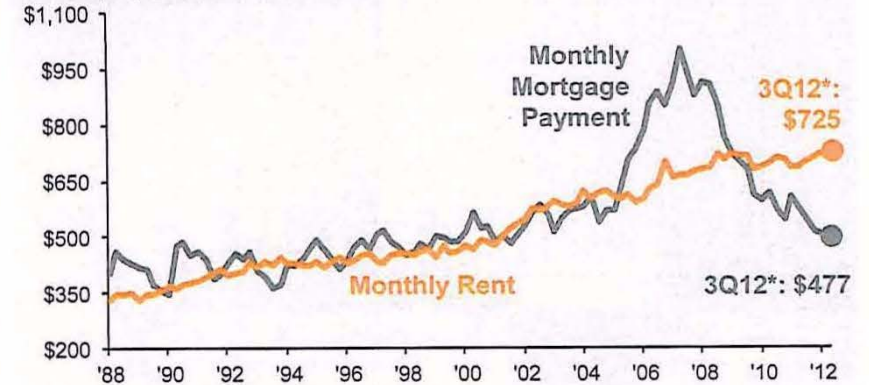
Home Prices

Indexed to 100, seasonally adjusted



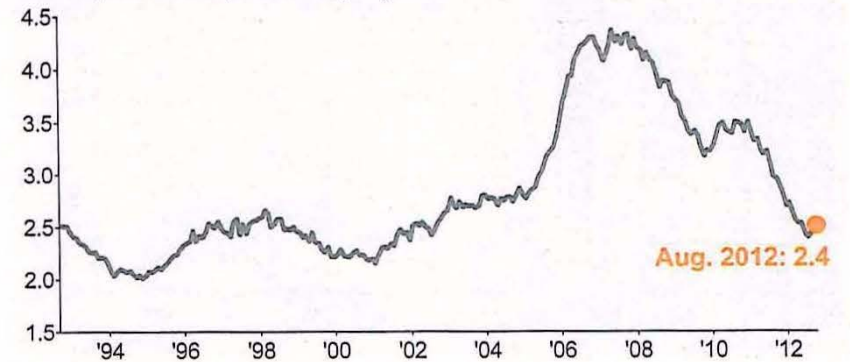
Monthly Rent vs. Monthly Mortgage Payment

Vacant properties



Home Inventories

Millions, annual rate, seasonally adjusted



Sources: (Left) National Association of Realtors, Standard & Poor's, FHFA, FactSet, J.P. Morgan Asset Management. (Top right) Census Bureau, J.P. Morgan Asset Management. Monthly mortgage payment assumes a 20% down payment at prevailing 30-year fixed-rate mortgage rates; analysis based on median asking rent and median mortgage payment based on asking price. (Bottom right) Census Bureau, National Association of Realtors, J.P. Morgan Asset Management. *3Q12 rent and mortgage payment values are J.P. Morgan Asset Management estimates.



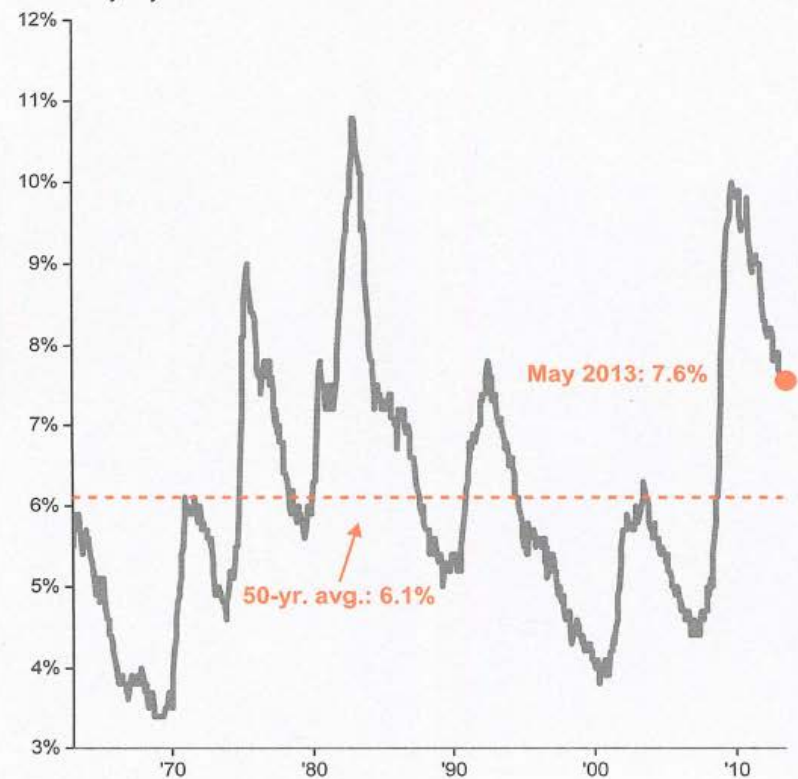
MARKET INSIGHTS

Employment

Economy

Civilian Unemployment Rate

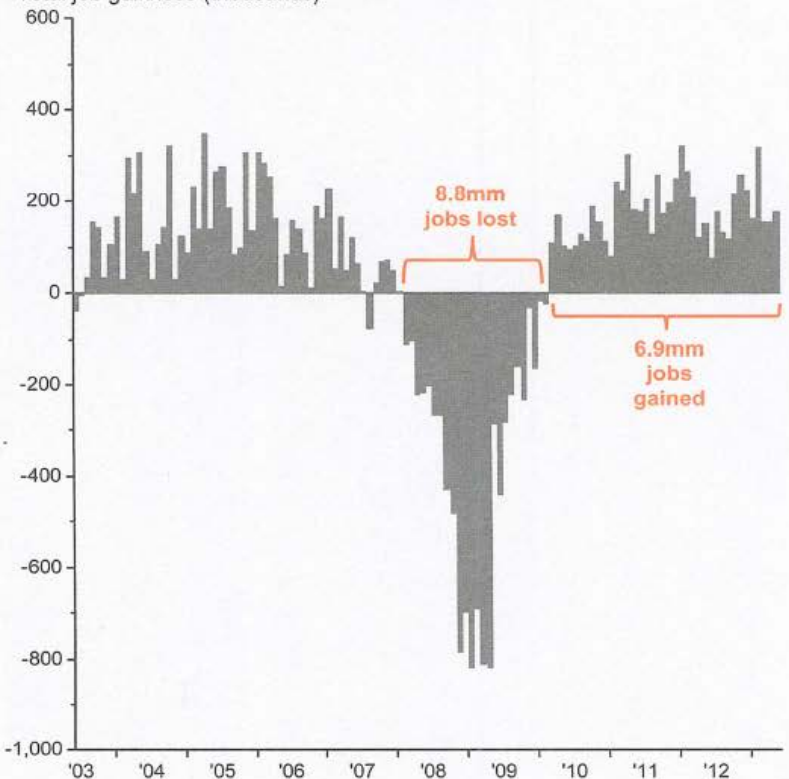
Seasonally adjusted



Source: BLS, FactSet, J.P. Morgan Asset Management. Data are as of 6/30/13.

Employment – Total Private Payroll

Total job gain/loss (thousands)



Source: BLS, FactSet, J.P. Morgan Asset Management.

Success



what people think
it looks like

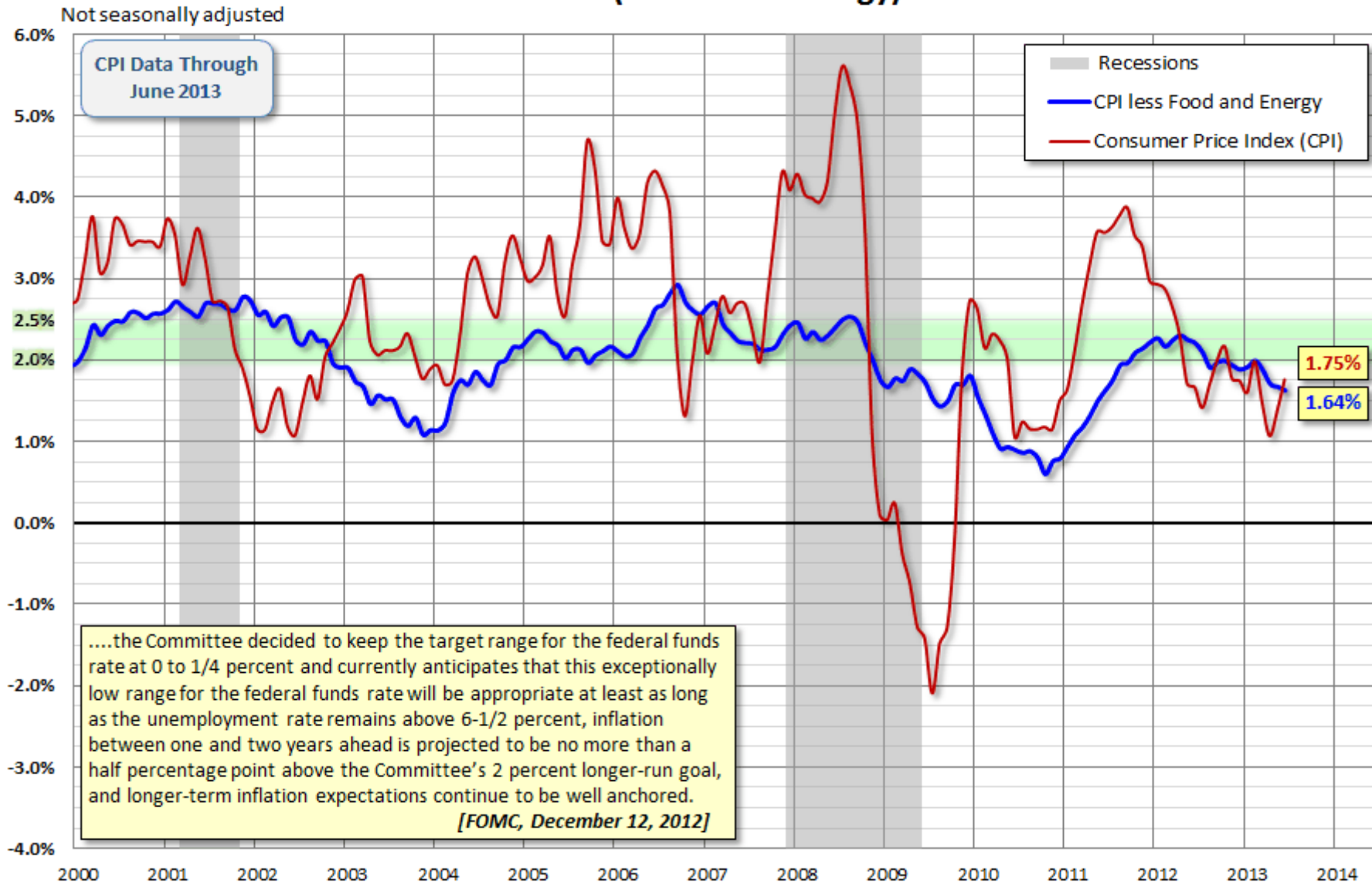
Success



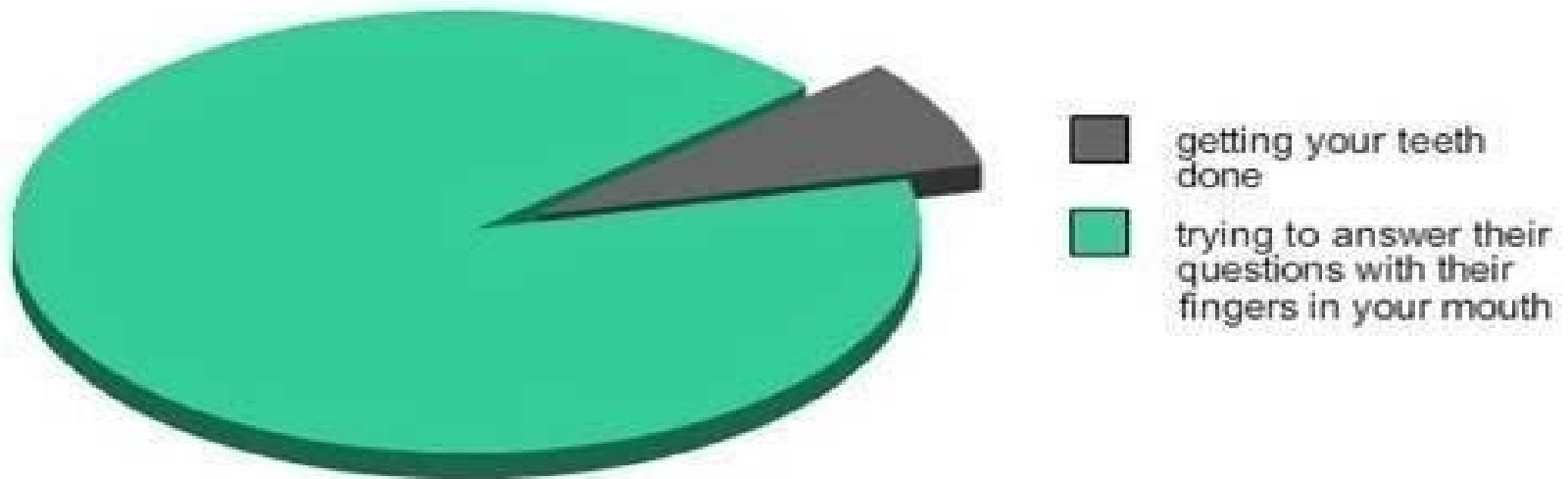
what it really
looks like

Consumer Price Index for Urban Consumers Headline and Core (ex Food & Energy) Since 2000

dshort.com
July 2013



time spent at the dentist



Yield History of the 10 Year Treasury Note

Where will rates go from here?

GRAB

USGG10YR Index 95 Save As 96 Actions 97 Edit 98 Table Yield Chart

03/30/1962 - 06/28/2013 Last Trade Line 1) Compare Mov. Avgs No Lower Chart USD

1D 3D 1M 6M YTD 1Y 5Y Max Quarterly Security/Study Event



2-'64 '65-'69 '70-'74 '75-'79 '80-'84 '85-'89 '90-'94 '95-'99 '00-'04 '05-'09 '10-'14

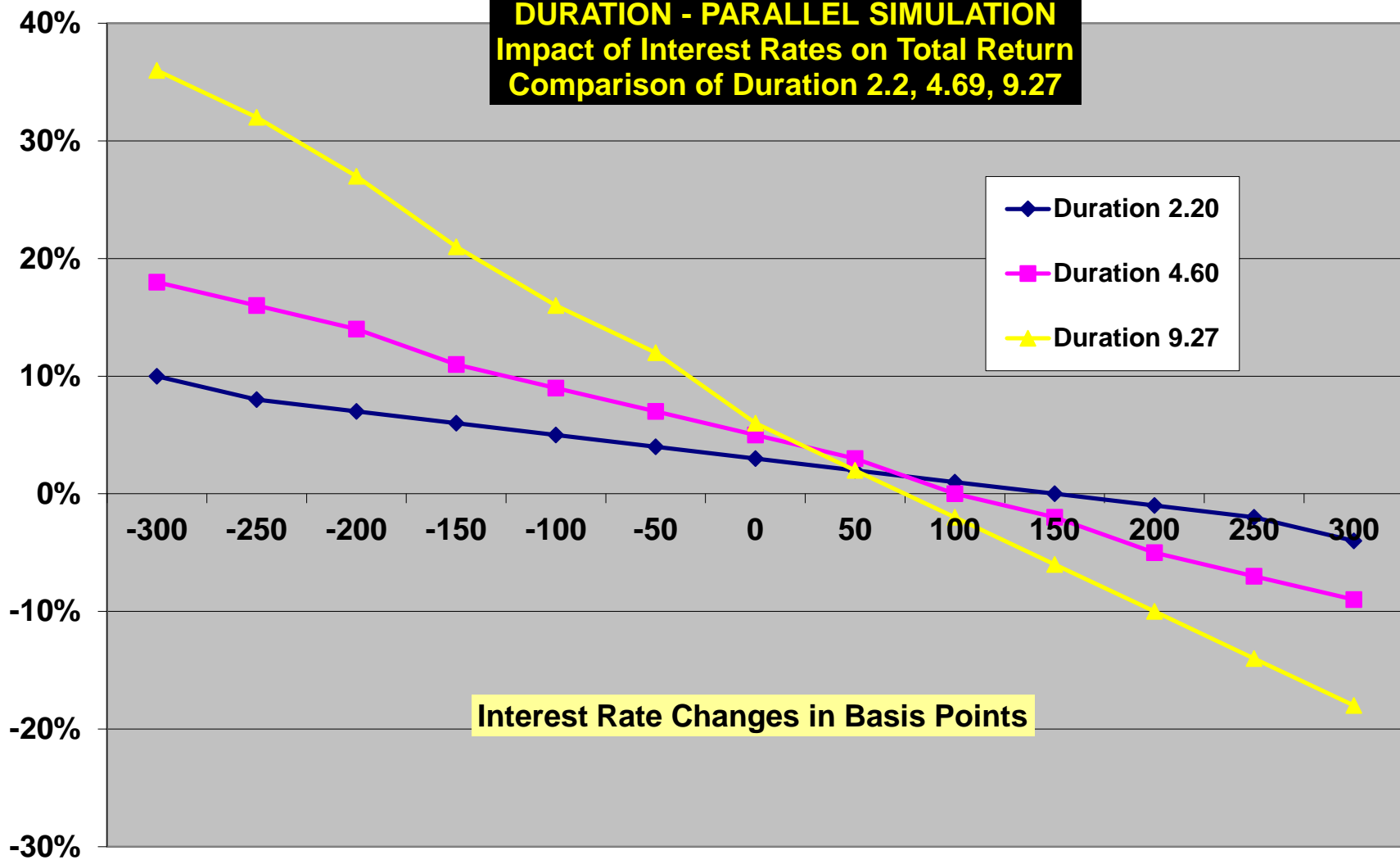
Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.
 SN 760027 H702-4806-0 13-Aug-13 14:33:35 CDT GMT-5:00



10 Year US Treasury Note Yield, Trading Range



DURATION - PARALLEL SIMULATION
Impact of Interest Rates on Total Return
Comparison of Duration 2.2, 4.69, 9.27

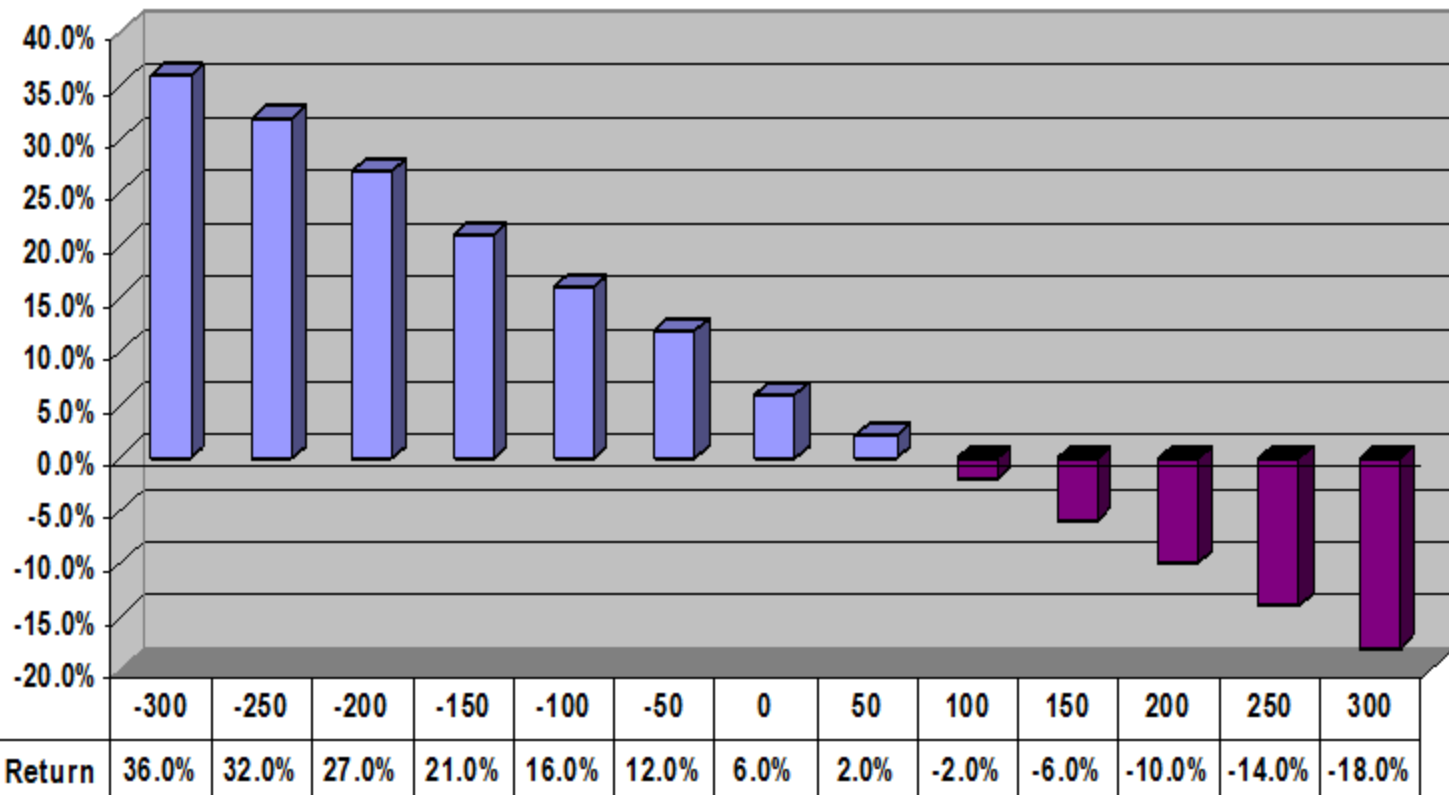


Interest Rate Changes in Basis Points

Duration - Parallel Simulation

Duration 9.27 Coupon Yield 6.05%

Impact of Interest Rate Changes On Total Return



This is why you want to buy corporate bonds!

2012 Bond Yield Curve

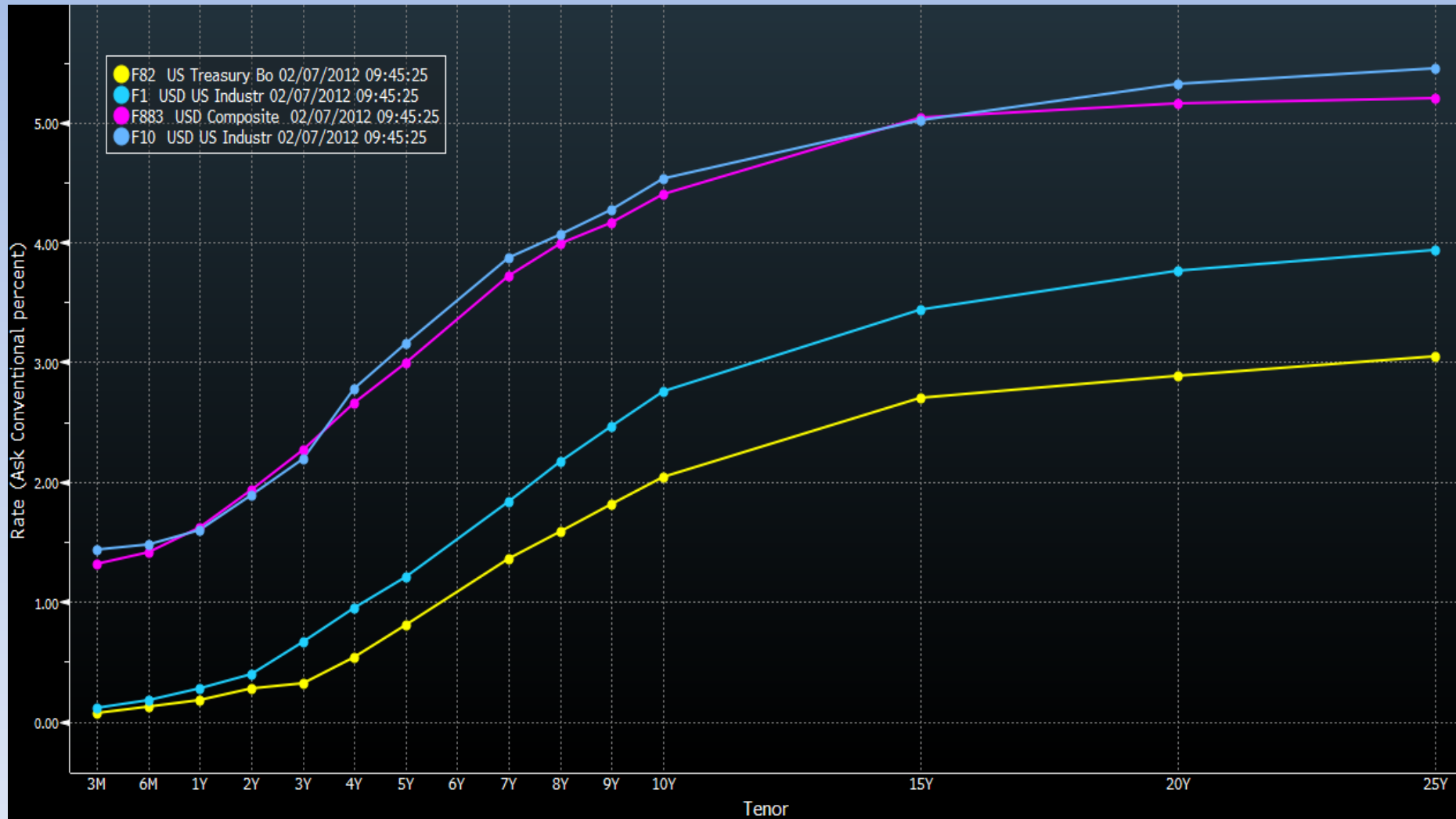
As of April 11, 2012

Corporate bonds yields are 2, 3, 4 10 times higher than US Treasury securities!!!

	US Treasury	US Agency	IL Muni's	"A" Rated Corporate's
3 month	0.07%	0.15%	0.40%	0.75%
1 Year	0.15%	0.22%	0.65%	1.10%
2 Year	0.30%	0.38%	1.05%	2.00%
5 Year	0.90%	1.00%	2.15%	3.20%
10 Year	2.03%	2.45%	3.64%	4.35%
30 Year	3.18%	3.32%	4.70%	5.75%

Corporate Bond Spreads

US Treasury, AA, A, BBB as of 4/1/2012



JP Morgan S&P "A" rated



MARKET INSIGHTS

Fixed Income Sector Returns

Fixed Income

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YTD	2Q13	10-yrs. '03 - '12 Cum.	'12 Ann.
High Yield	29.0%	11.9%	12.3%	11.8%	11.6%	13.7%	58.2%	15.1%	13.6%	17.9%	1.4%	-1.4%	200.3%	11.6%
EMD	26.9%	11.1%	Asset Alloc. 3.6%	10.0%	9.0%	8.3%	34.2%	12.8%	10.7%	15.8%	-2.0%	-1.9%	174.3%	10.6%
Asset Alloc.	9.7%	TIPS 8.5%	Muni 3.5%	MBS 5.2%	Barclays Agg 7.0%	Barclays Agg 5.2%	Corp. 18.7%	Corp. 9.0%	Treas. 9.8%	Corp. 9.8%	Treas. -2.1%	MBS -2.0%	Asset Alloc. 94.3%	Asset Alloc. 6.9%
TIPS	8.4%	Asset Alloc. 6.3%	TIPS 2.8%	Asset Alloc. 5.1%	MBS 6.9%	Asset Alloc. -1.4%	Asset Alloc. 15.8%	Asset Alloc. 7.6%	Asset Alloc. 8.9%	Asset Alloc. 7.8%	Barclays Agg -2.4%	Barclays Agg -2.3%	TIPS 90.4%	TIPS 6.7%
Corp.	8.2%	Corp. 5.4%	Treas. 2.8%	Muni 4.8%	Asset Alloc. 6.2%	TIPS -2.4%	Muni 12.9%	Barclays Agg 6.5%	Corp. 8.1%	TIPS 7.0%	Muni -2.7%	Muni -3.0%	Corp. 84.7%	Corp. 6.3%
Muni	5.3%	MBS 4.7%	High Yield 2.7%	Barclays Agg 4.3%	EMD 5.2%	Muni -2.5%	TIPS 11.4%	TIPS 6.3%	Barclays Agg 7.8%	Muni 6.8%	Asset Alloc. -3.1%	Asset Alloc. -3.1%	Barclays Agg 65.7%	Barclays Agg 5.2%
Barclays Agg	4.1%	Muni 4.5%	MBS 2.6%	Corp. 4.3%	Corp. 4.6%	Corp. -4.9%	Barclays Agg 5.9%	Treas. 5.9%	EMD 7.0%	Barclays Agg 4.2%	Corp. -3.4%	Corp. -3.3%	Muni 64.5%	Muni 5.1%
MBS	3.1%	Barclays Agg 4.3%	Barclays Agg 2.4%	Treas. 3.1%	Muni 3.4%	EMD -14.7%	MBS 5.9%	MBS 5.4%	MBS 6.2%	MBS 2.6%	EMD -6.5%	EMD -5.1%	MBS 64.1%	MBS 5.1%
Treas.	2.2%	Treas. 3.5%	Corp. 1.7%	TIPS 0.4%	High Yield 1.9%	High Yield -26.2%	Treas. -3.6%	Muni 2.4%	High Yield 5.0%	Treas. 2.0%	TIPS -7.4%	TIPS -7.0%	Treas. 59.0%	Treas. 4.7%

Source: Barclays Capital, FactSet, J.P. Morgan Asset Management.

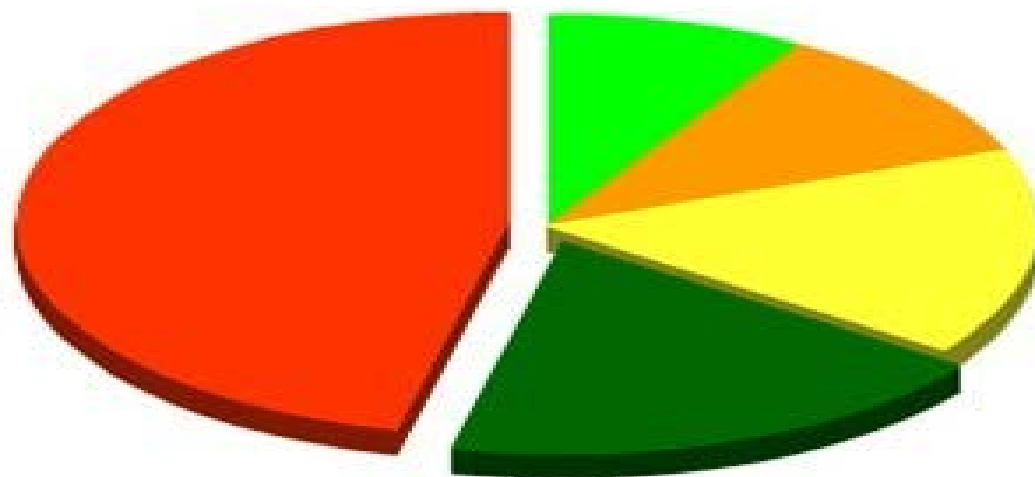
Past performance is not indicative of future returns. Fixed income sectors shown above are provided by Barclays Capital and are represented by: Barclays Capital U.S. Aggregate Index; MBS: Fixed Rate MBS Index; Corporate: U.S. Corporates; Municipals: Muni Bond Index; Emerging Debt: Emerging Markets USD Index; High Yield: Corporate High Yield Index; Treasuries: Barclays Capital U.S. Treasury; TIPS: Barclays Capital TIPS. The "Asset Allocation" portfolio assumes the following weights:

10% in MBS, 20% in Corporate, 15% in Emerging Debt, 10% in High Yield, 25% in Treasuries, 10% in TIPS.

Asset allocation portfolio assumes annual rebalancing.

Data are as of 6/30/13.

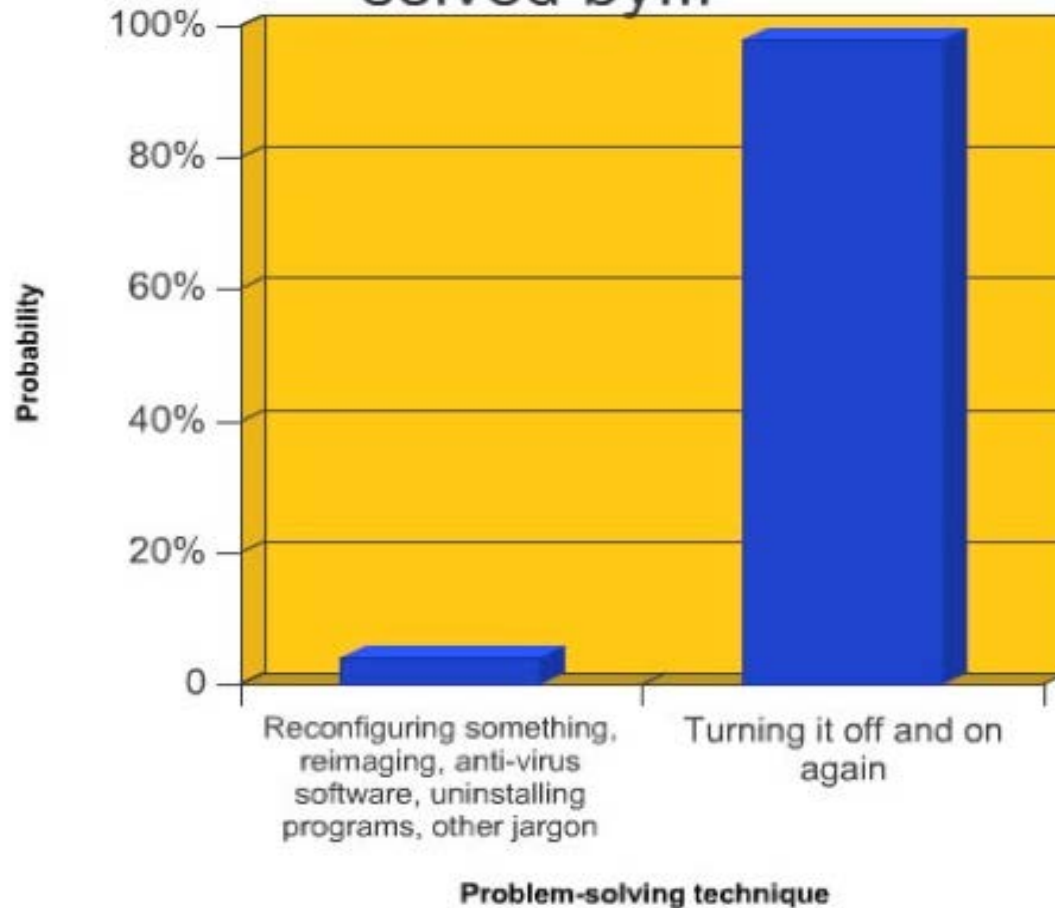
Signs you're shopping at a bad Wal-Mart



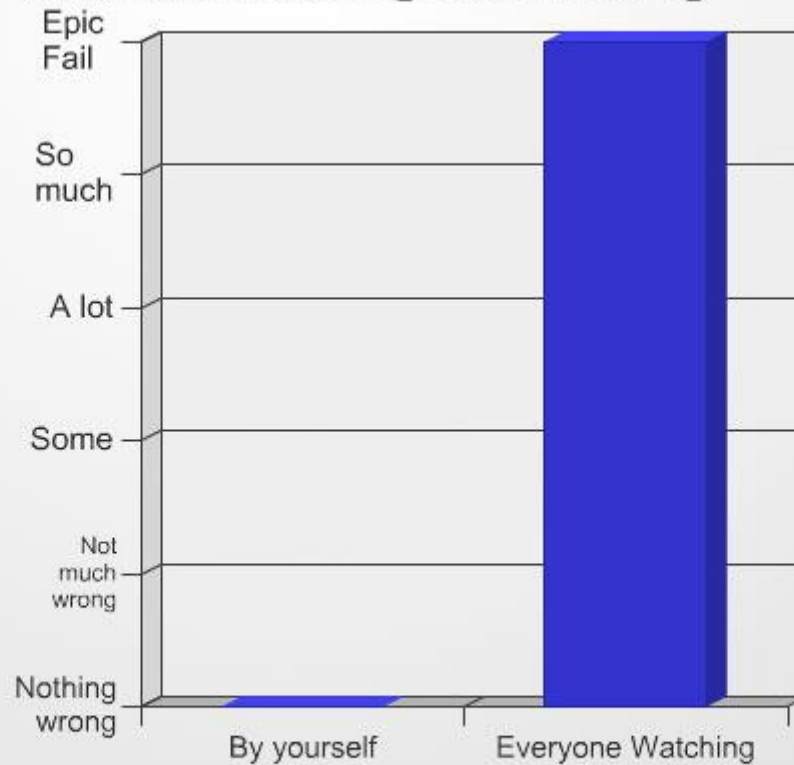
- There's a guy living in your shopping cart
- aisle 3 is a meth lab
- hard to navigate around all the crime scene tape
- you know you saw the store greeter on "America's Most Wanted" last night
- The store is on fire

Vertical Bar Chart

Likelihood of a computer issue being solved by...



Chance of doing stuff wrong

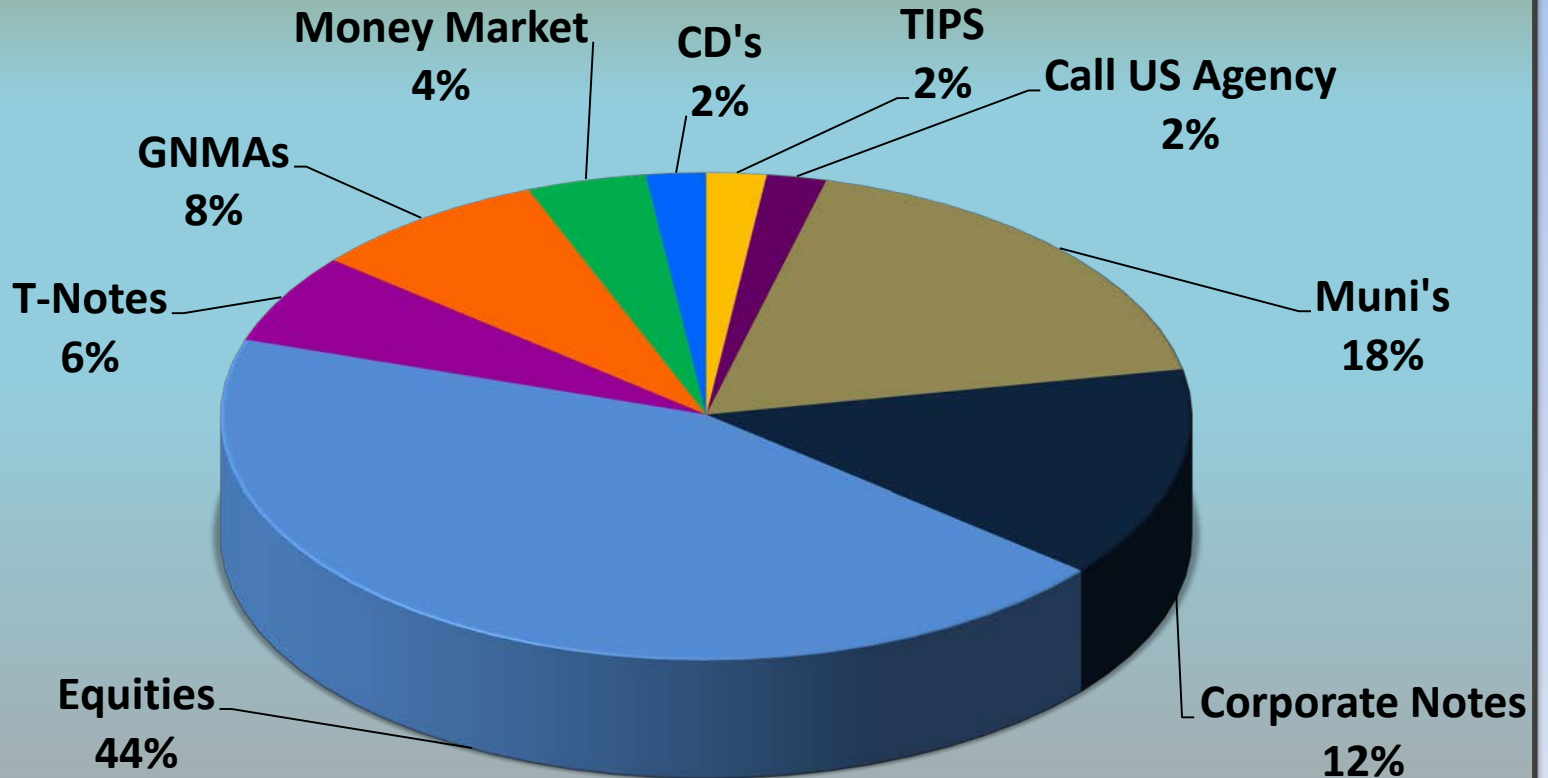


GraphJam.com



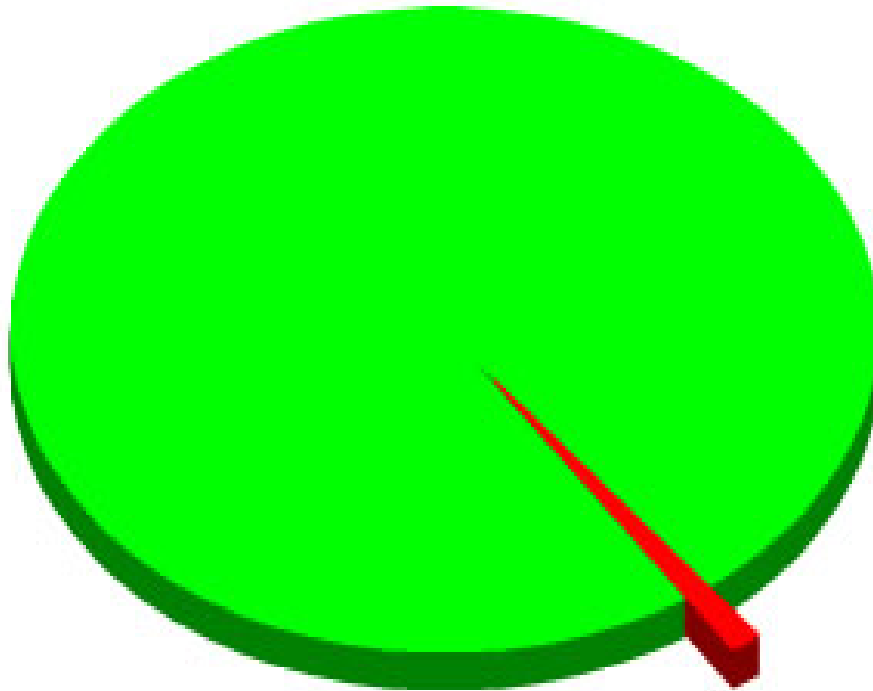
BOREDPANDA.COM - the only magazine for pandas.

Total Portfolio Structure Pie Chart



Pie Chart

Thoughts When A Car Alarm Goes Off



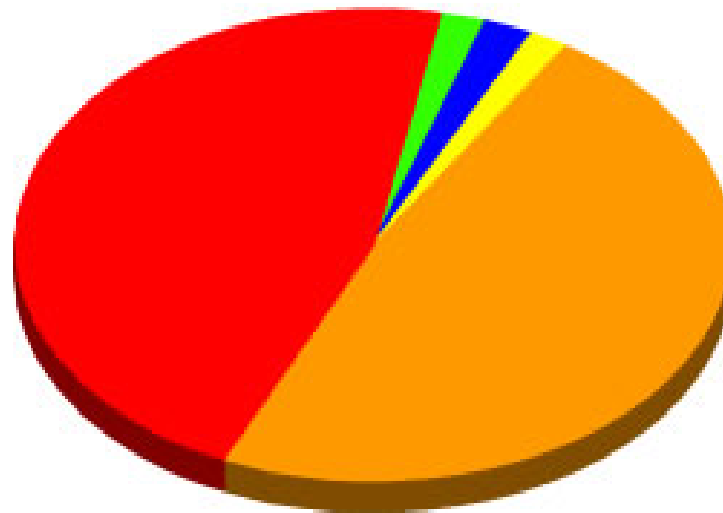
That's annoying,
go deactivate it



Someone's car is
being stolen!

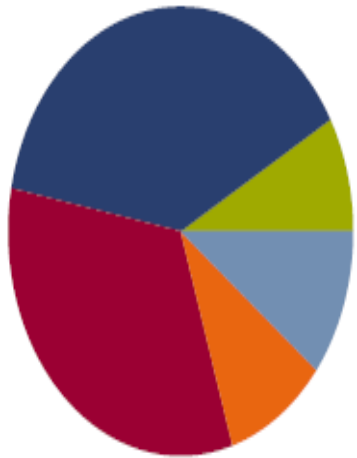
Pie Chart

Things I Learned From Watching CSI



- How to take a fingerprint sample.
- How to tell which direction the blood splattered from.
- How to think out of the box when faced with problems.
- All female CSIs can double as supermodels.
- You can kill someone with anything.

Equity Portfolio Style Weighting Charts



- Cash
- US Stock
- Non US Stock
- Bond
- Other
- Not Classified

Total 100.00 100.00

	Portfolio	B-mark
Cash	8.29	0.00
US Stock	38.65	99.91
Non US Stock	32.92	0.09
Bond	9.56	0.00
Other	10.58	0.00
Not Classified	0.00	0.00
Total	100.00	100.00

Equity Investment Style %

			Style
			Value Core Growth
22	19	17	Large Size
9	12	9	Medium
6	5	1	Small
Not Classified			0.00 %



Pie Chart

People who find you on Facebook



■ High School people you hated

■ College people you hated

■ Work colleagues you hate

■ Actual friends

GraphJam

Pie Chart

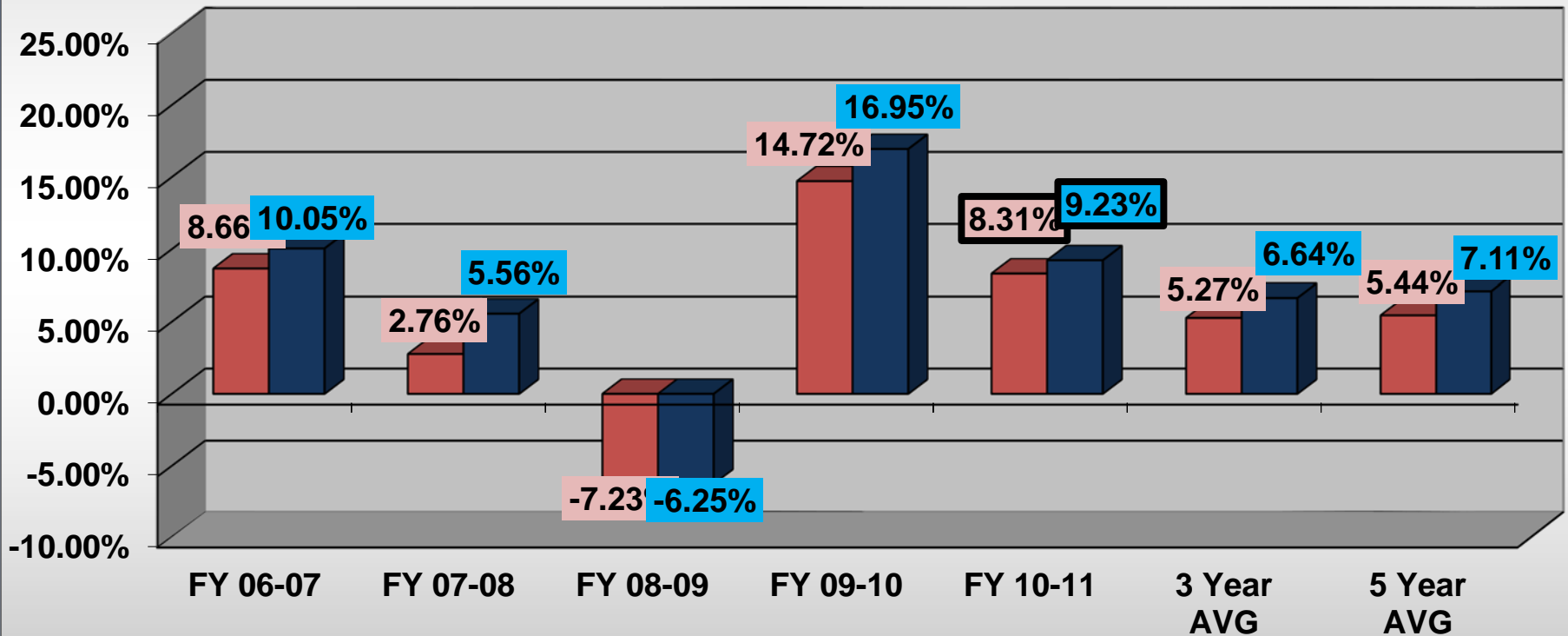
Why do men attend weddings?



GraphJam.com

**Utopia Police Pension Fund Investment Returns
Blended Benchmark = BIGBI + S&P 500 Index (Same
Percentages of Equity & Bonds as Utopia Police)**

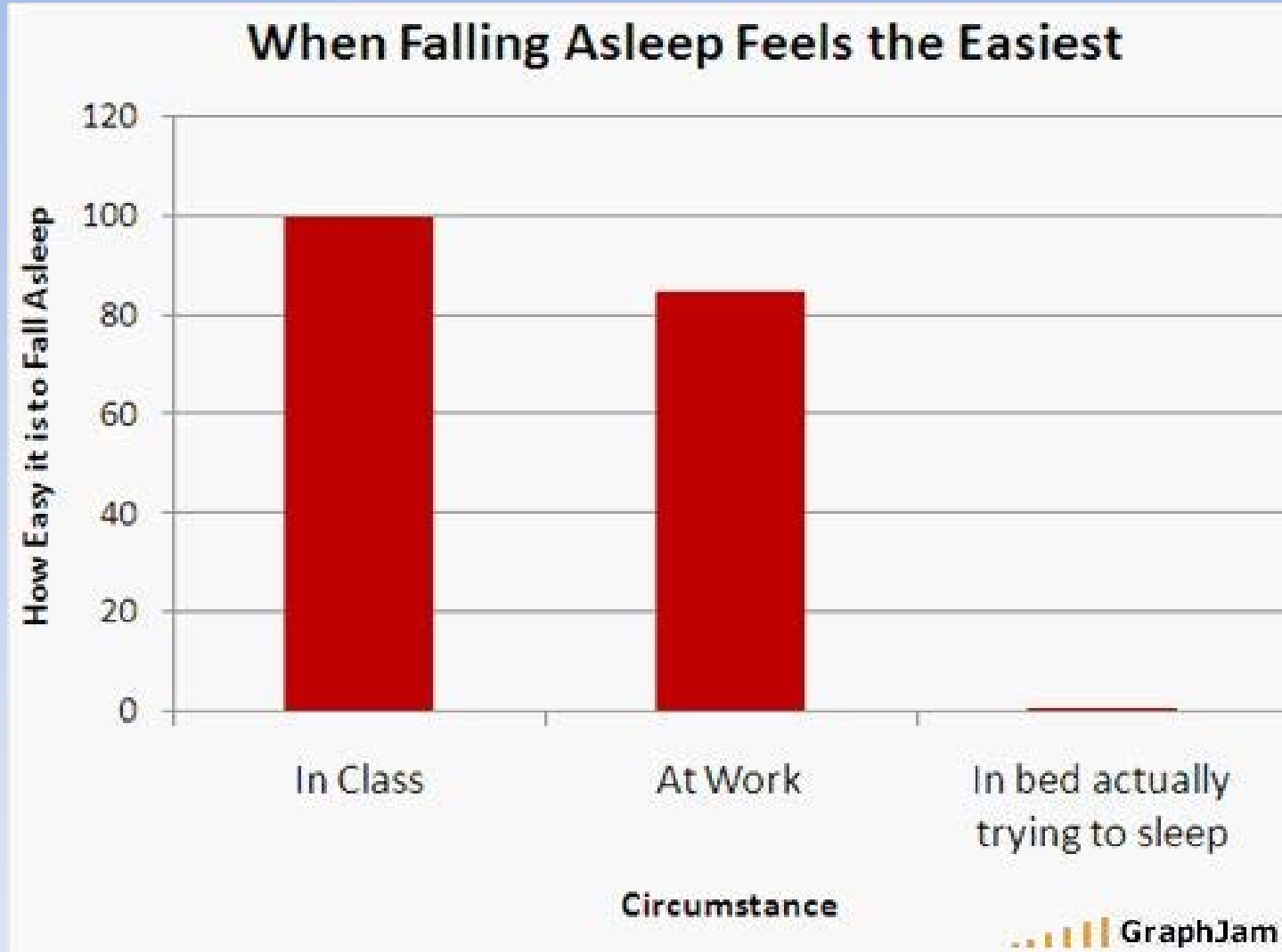
■ Blended Benchmark ■ Utopia Police



Vertical Bar Chart

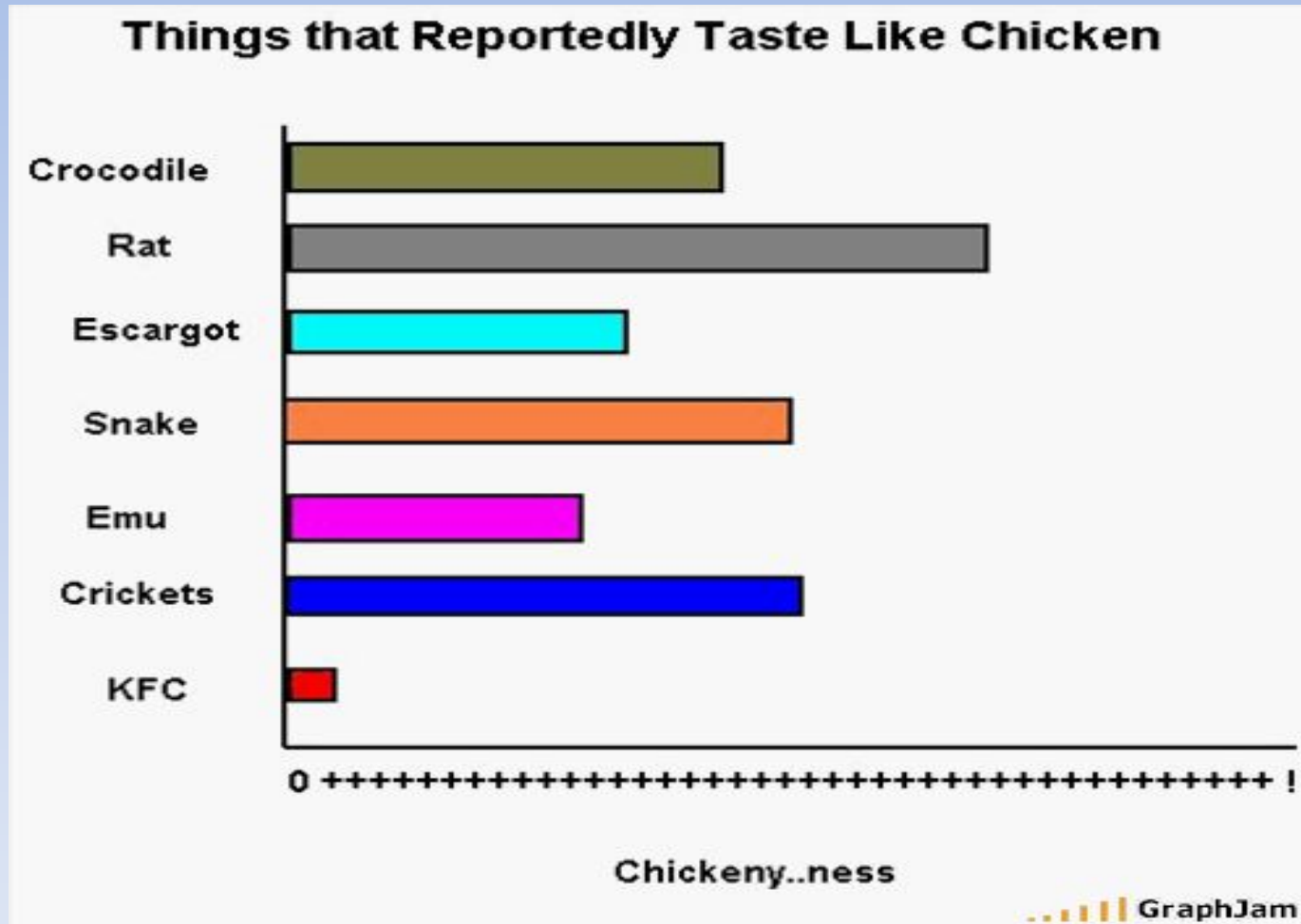


Vertical Bar Chart



Horizontal Bar Chart

Histogram

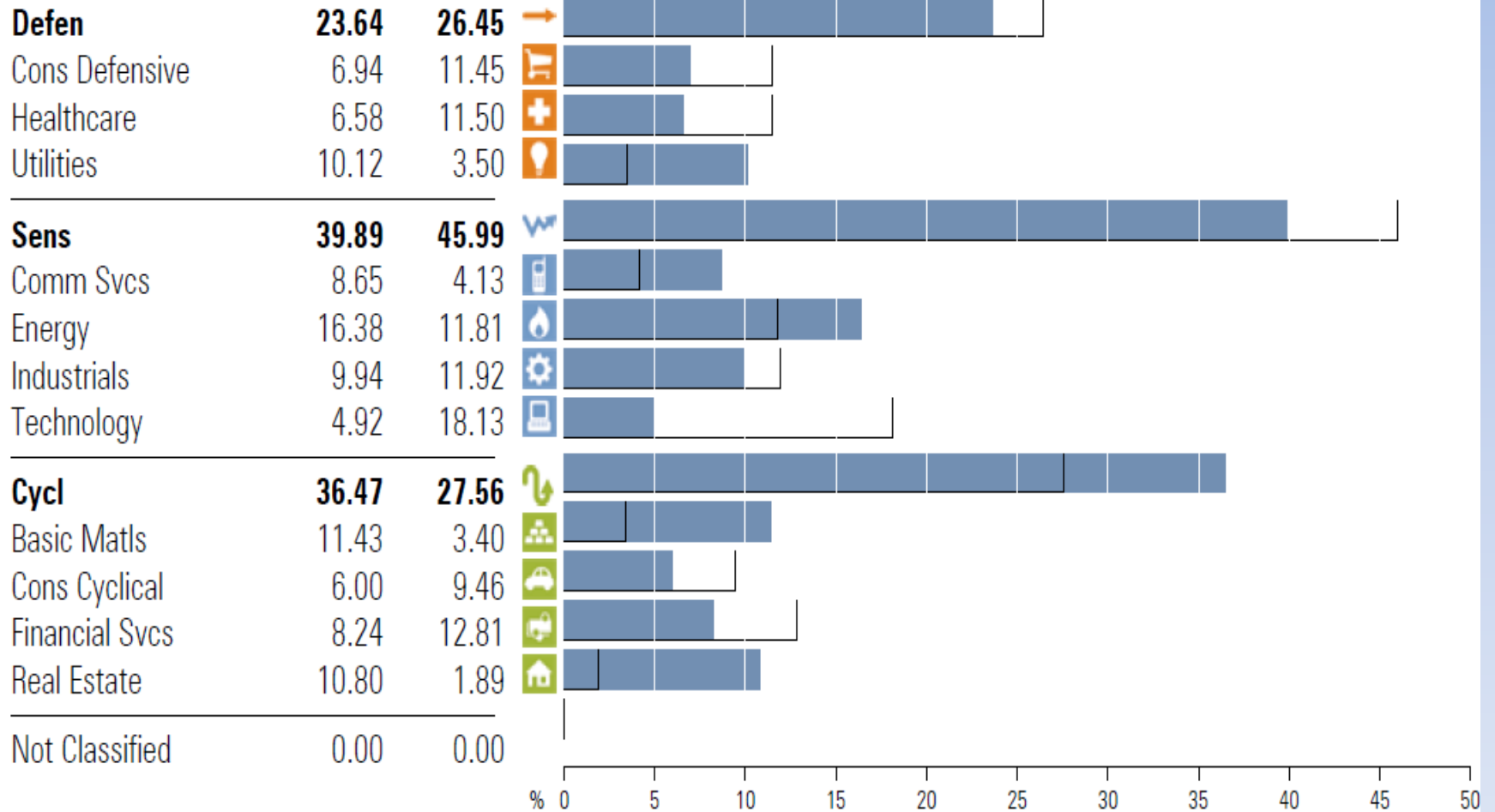


Horizontal Bar Chart – Equity Sector Weightings

Sector Weightings

% of Stocks

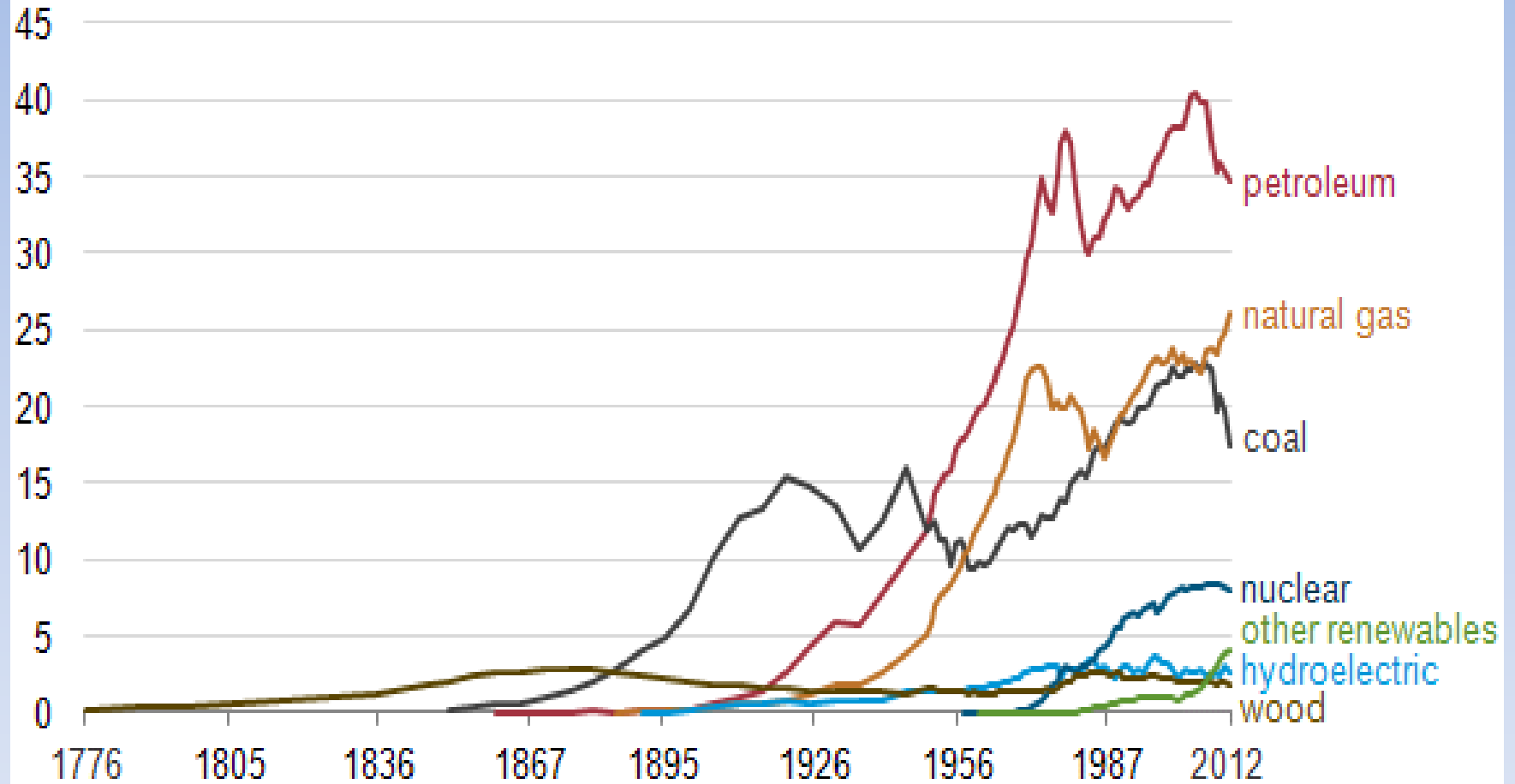
■ Portfolio ▬ B-mark



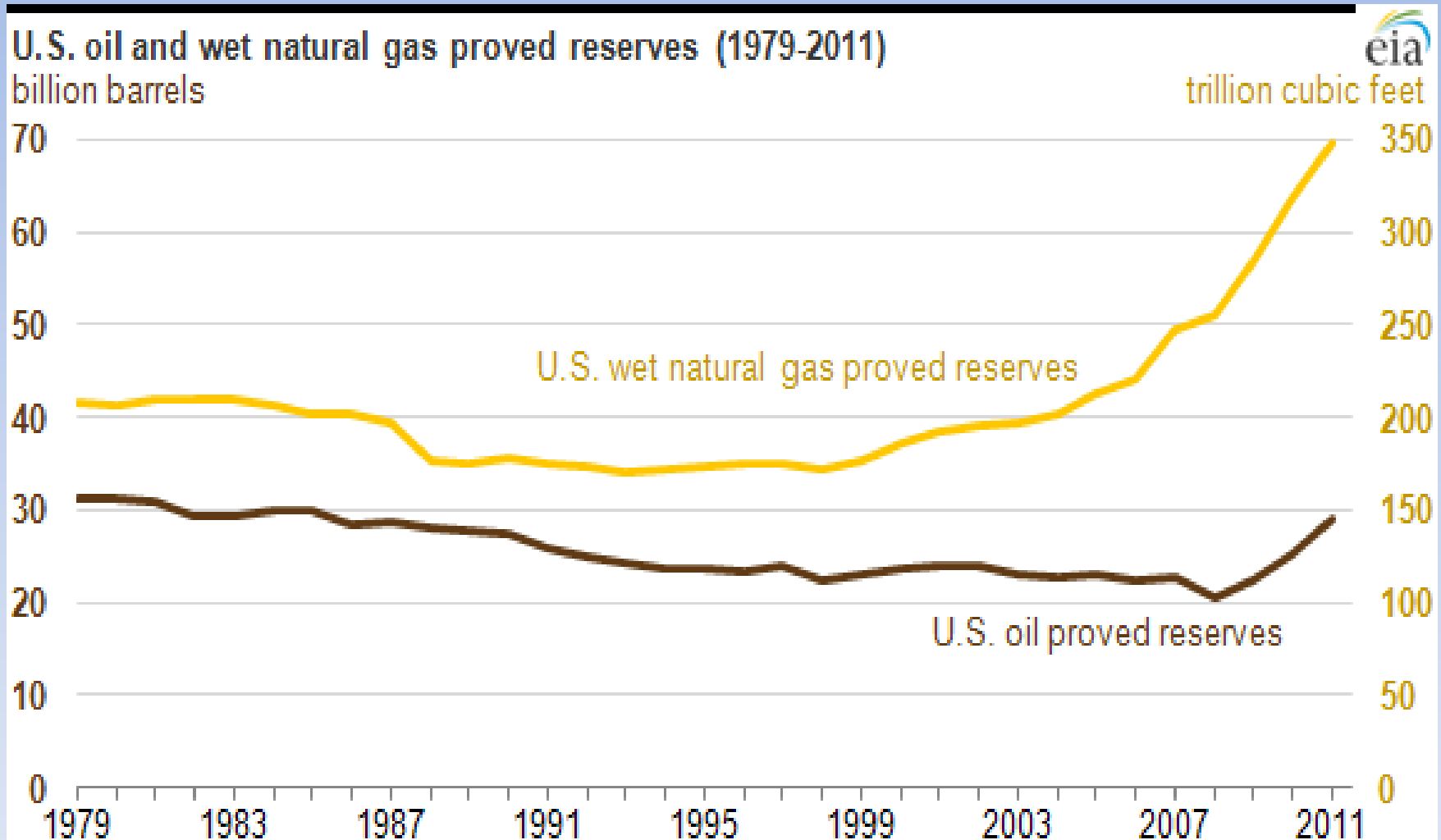
History of energy consumption in the United States (1776-2012)



quadrillion Btu

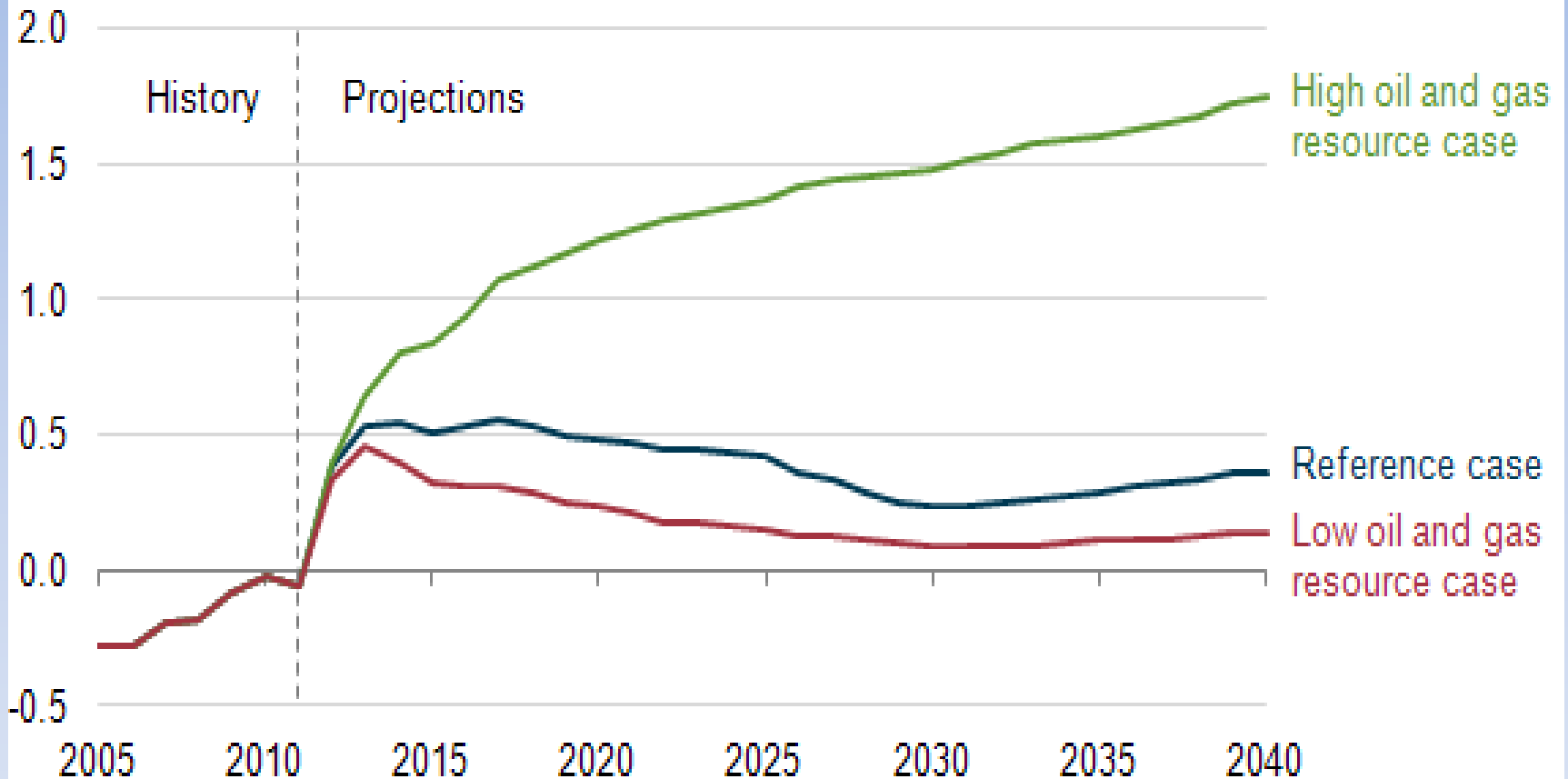


As of Jun 10, 2013 the Us Department of Energy estimates that the US currently has 1,161 trillion cubic feet of Natural Gas and 345 billion barrels of recoverable shale oil!

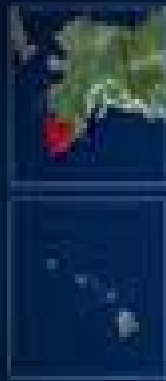


U.S. net exports of liquified petroleum gas (2005-40)

million barrels per day



WHERE WE ARE NOT DRILLING



■ DRILLING ALLOWED
■ UNTAPPED AREAS
SOURCE: EIA, MNS, DOI

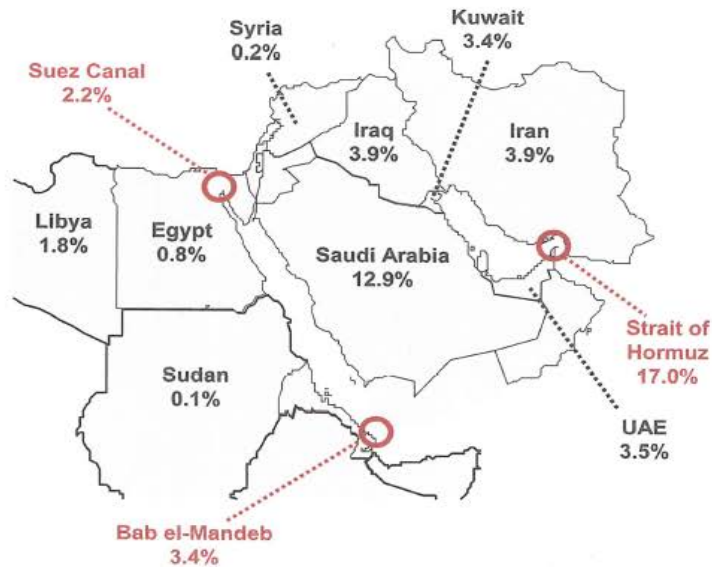
MARKET INSIGHTS

Global Energy Supply

Economy

Middle East Energy Production & Chokepoints

Percent of global liquid fuel production, 2012*



Major Producers

Percent of global total, 2012

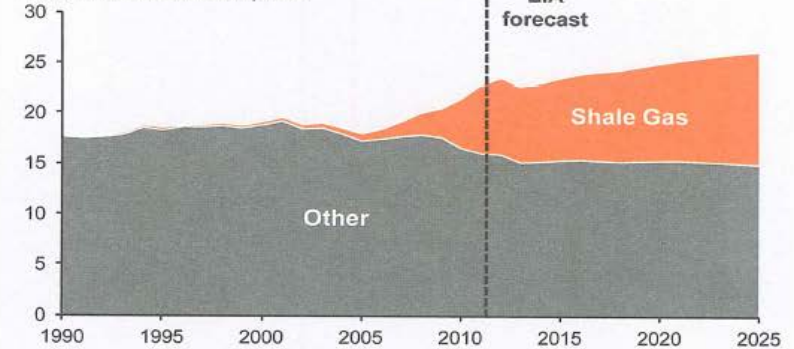
Saudi Arabia	13%	China	5%	United States	21%	India	4%
United States	12%	Canada	4%	China	11%	Saudi Arabia	3%
Russia	12%	Iran	4%	Japan	5%	Brazil	3%

Major Consumers

Percent of global total, 2012

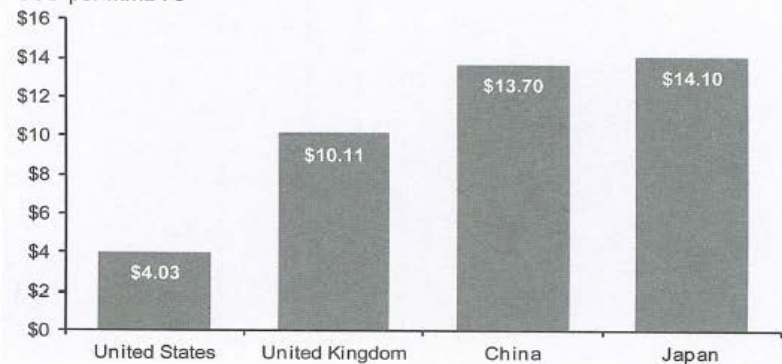
U.S. Natural Gas Production

Trillions of cubic meters, USD



Natural Gas Prices by Country

USD per mmbTU*



Source: EIA, J.P. Morgan Asset Management.

Forecasts are from the EIA Annual Energy Outlook 2013. *mmbTU represents 10,000 million British thermal units. Natural gas prices are as of June 2012. *Production numbers as of 2012, while chokepoints are 2011 data.

Brain Teaser Bar Chart

- Which candy bar contains the most chocolate?
 - Almond Joy
 - Nestle' Crunch
 - Krackel
 - Butterfinger
 - Hershey's Bar
 - Kit Kat
 - Baby Ruth

The Chocolate King is Hershey's!



Statistics don't lie, statisticians do!



Learn how to decipher charts and graphs!

THANK YOU!

I appreciate the opportunity
to make a presentation today!



A special
"thanks" to
Bill Rizer
Winfield Police
Pension Fund
for providing
many of the
humorous slides
in this
presentation.

Gary Karshna

Capital Gains Incorporated

8060 W. Oakton Street, Suite 102, Niles, IL 60714

(847) 318-9975

gkarshna@capitalgainsinc.com