

Weathering the 3-D Hurricane of Deficits, Debt, and Demographics

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Research Affiliates, LLC**

Outlook for Capital Market Returns



What is the “3-D Hurricane”?

Setting Realistic Return Expectations

Asset Allocation—Where are the opportunities?

The Fundamental Index®

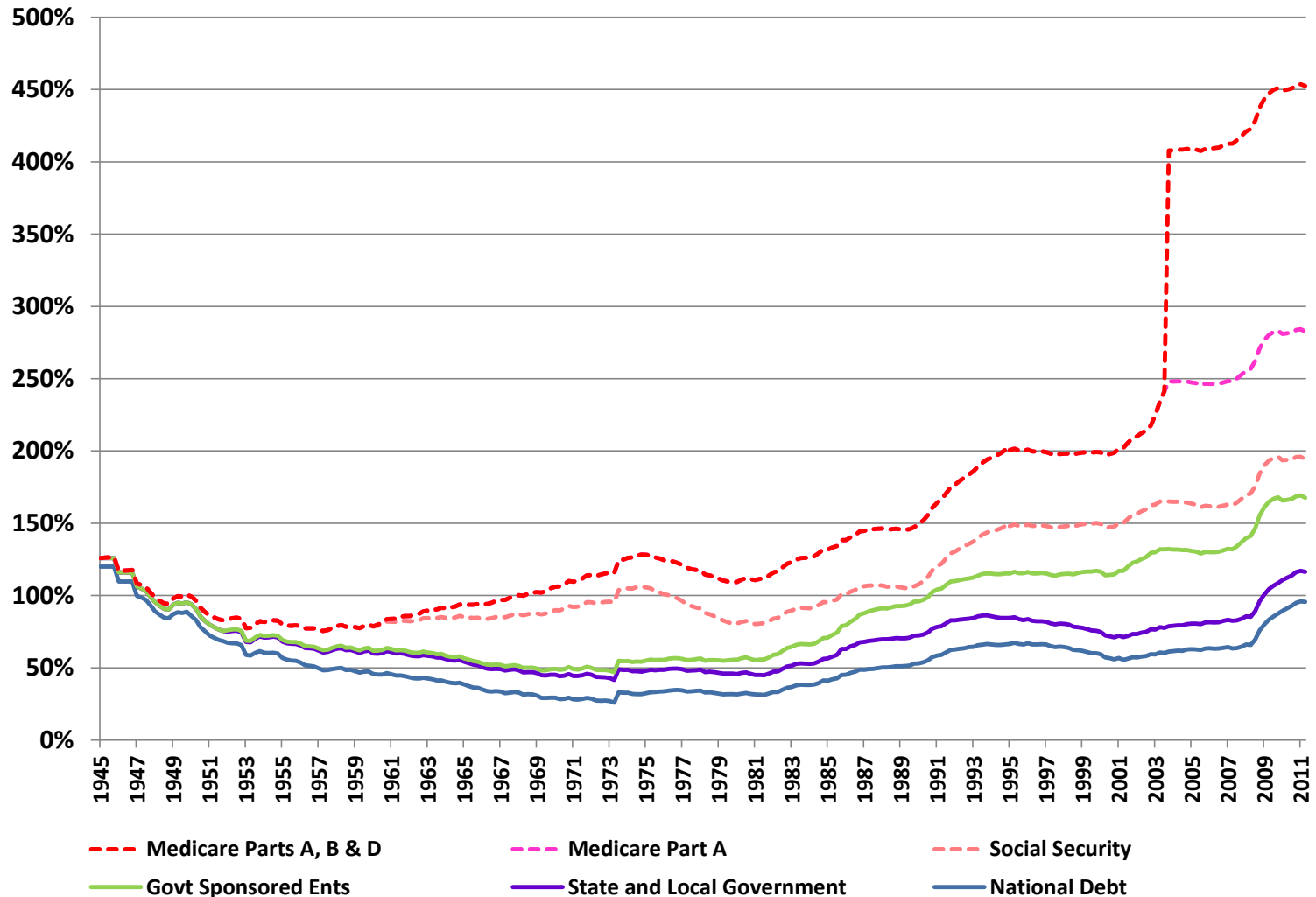
Looking to the Future

A 3-D Hurricane: Our Deficit, Debt, and Demographics



US Public Debt and Entitlement Obligations are Growing at a Frightful Pace

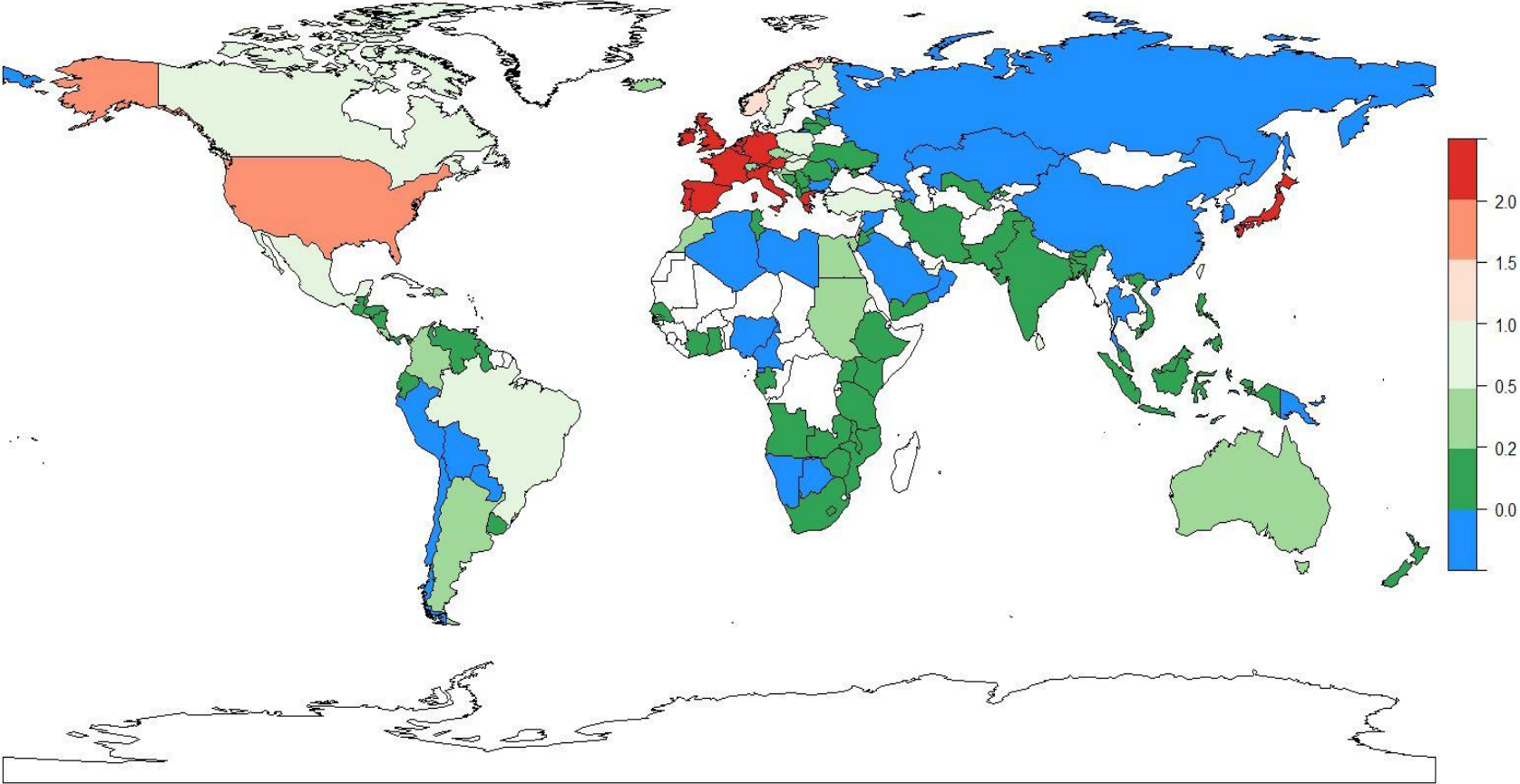
Public Debt and Unfunded Obligations, % of GDP, from 1945



Source: Research Affiliates, based on data from Federal Reserve Flow of Funds, 2011 Q2 Release.

Comparing Explicit Bond Debt: Developed vs. Emerging Countries

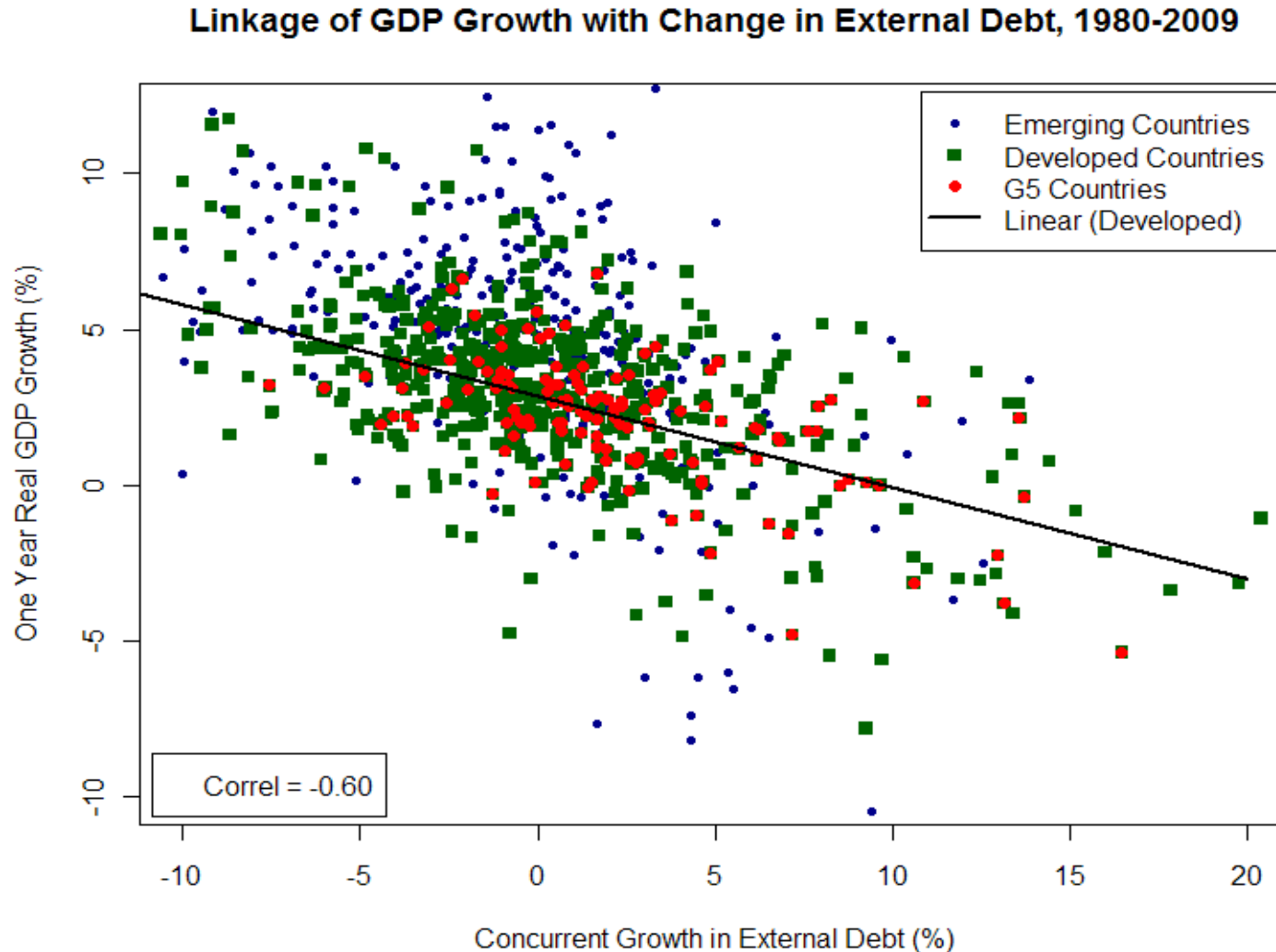
Net Debt / Debt Service Capacity, Relative to World Average
Excludes All Off-Balance Sheet Debt and Entitlement Programs



Net Debt is More than Double RAFI® Scale **Net Debt is less than 20% of RAFI® Scale** **Negative Net Debt**

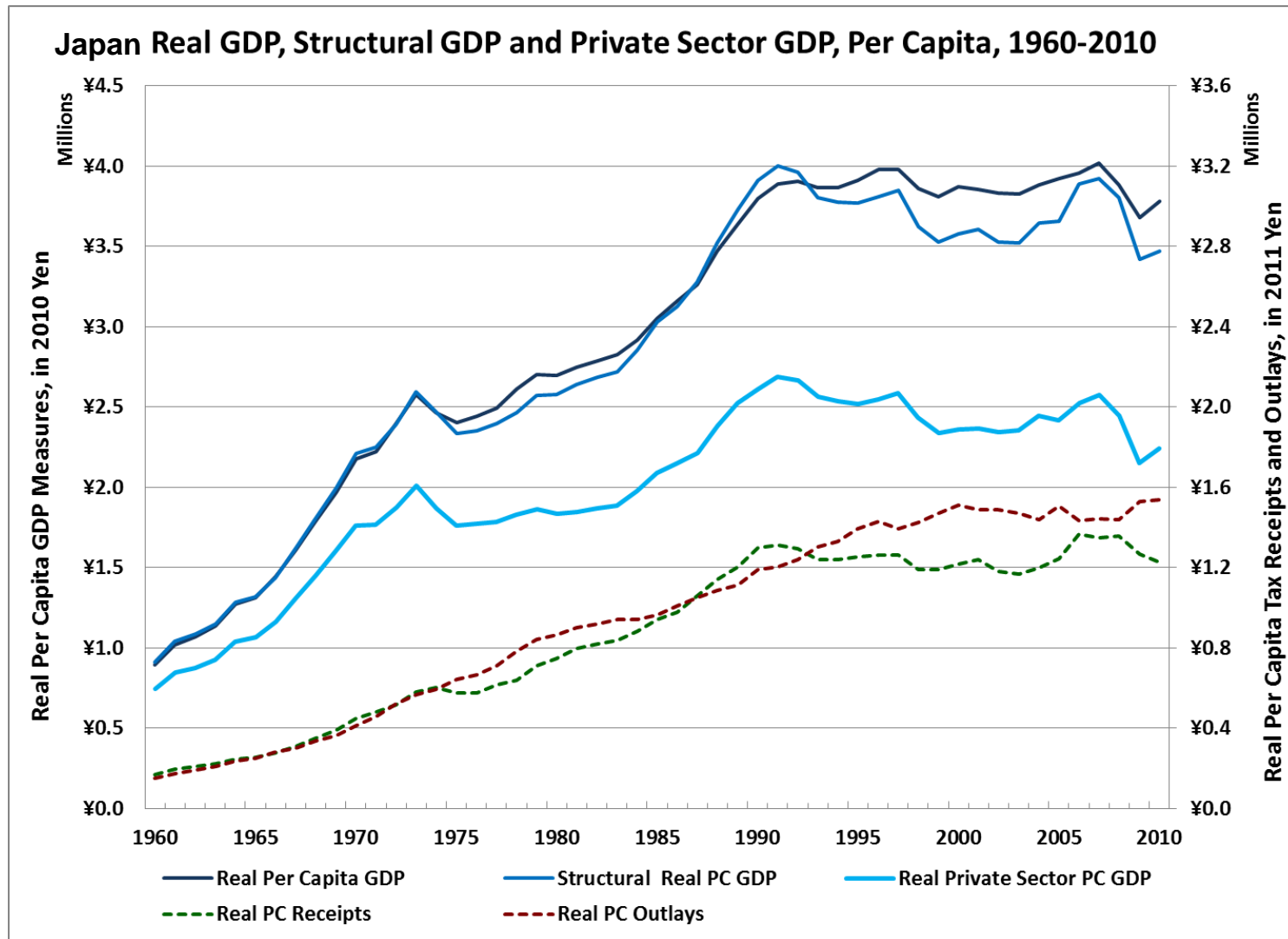
Source: Research Affiliates, LLC, based on data from CIA World Fact Book 2010, International Monetary Fund.

Comparing Debt Levels: Effects on Growth – Keynes' Multiplier is Negative



Source: Research Affiliates, LLC, based on data from CIA World Fact Book 2010, International Monetary Fund.

GDP is the Wrong Measure for Prosperity, Anyway! Structural GDP (Net of New Borrowing), is Much More Important



Source: Research Affiliates, LLC, based on data from OMB, Department of Commerce and NIPA.

Demography Matters... More Than We Might Expect



Our Findings (cont.)

GDP per capita growth

- Highest GDP growth associated with young adults 20–39
- Young children hurt GDP growth—a little
- Senior citizens hurt GDP growth—a lot

Stocks perform better

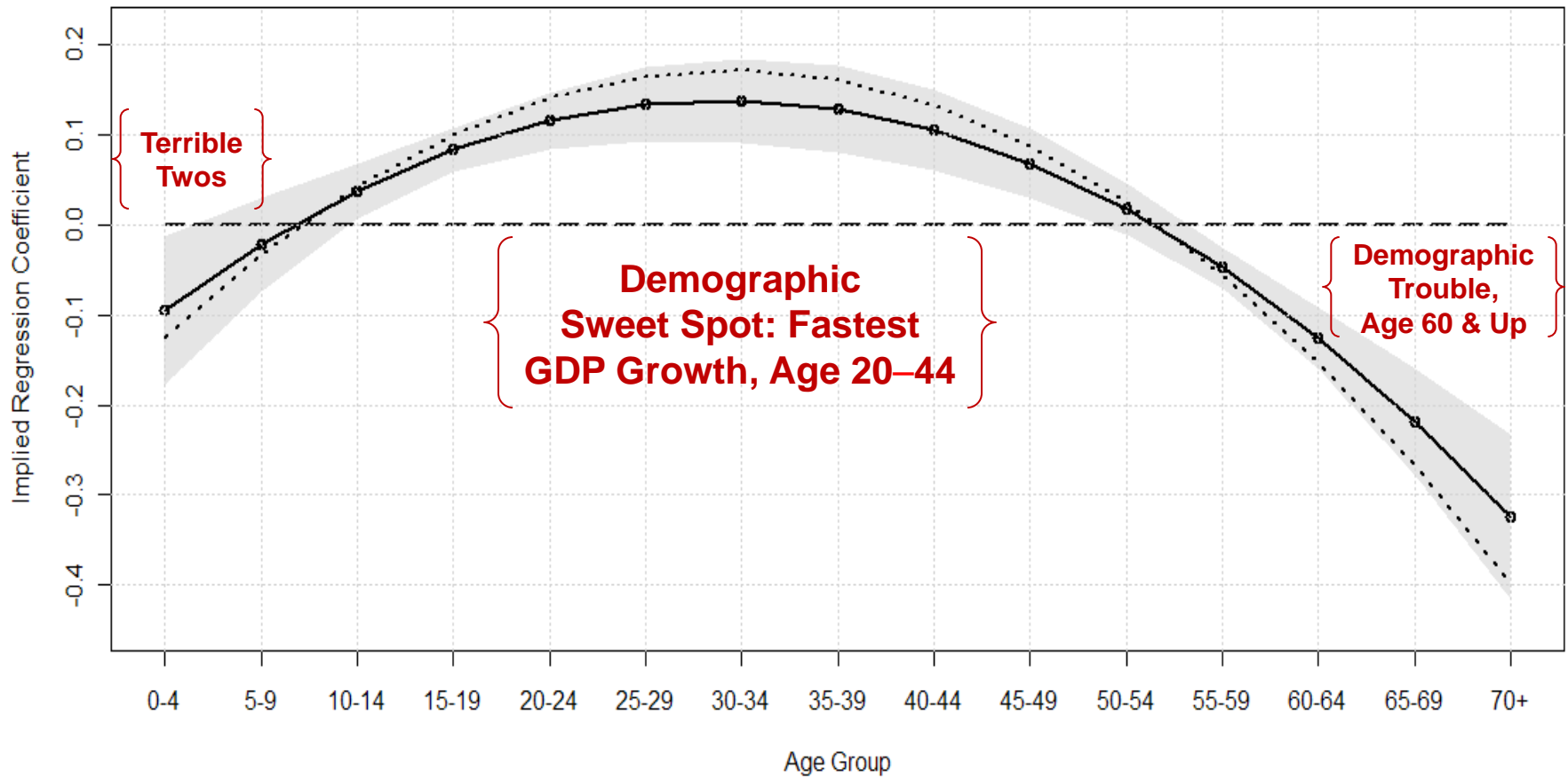
- When there are many in the 35–59 age cadres, *The Savers*
- And, much worse, when there are many senior citizens or children
- When 45–64 age cadres are growing faster
- But, much worse, with young adult or 70+ age cadres growing fast, *The Dissavers*
- Age shift for rates of demographic change

Demography affects bonds

- With roughly a five-year age difference from stocks
- With greater statistical significance than stocks

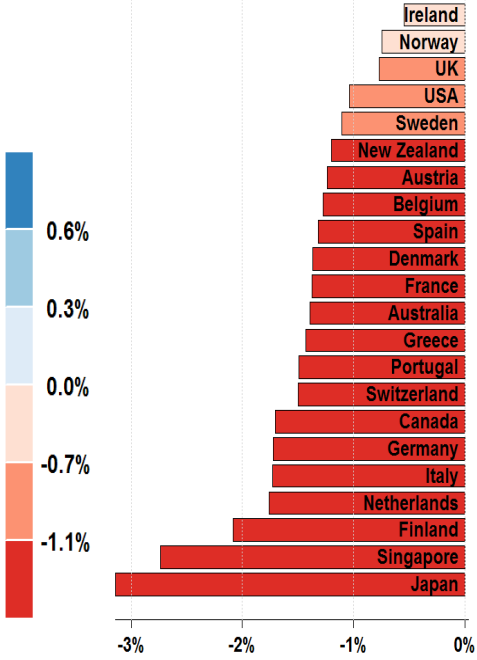
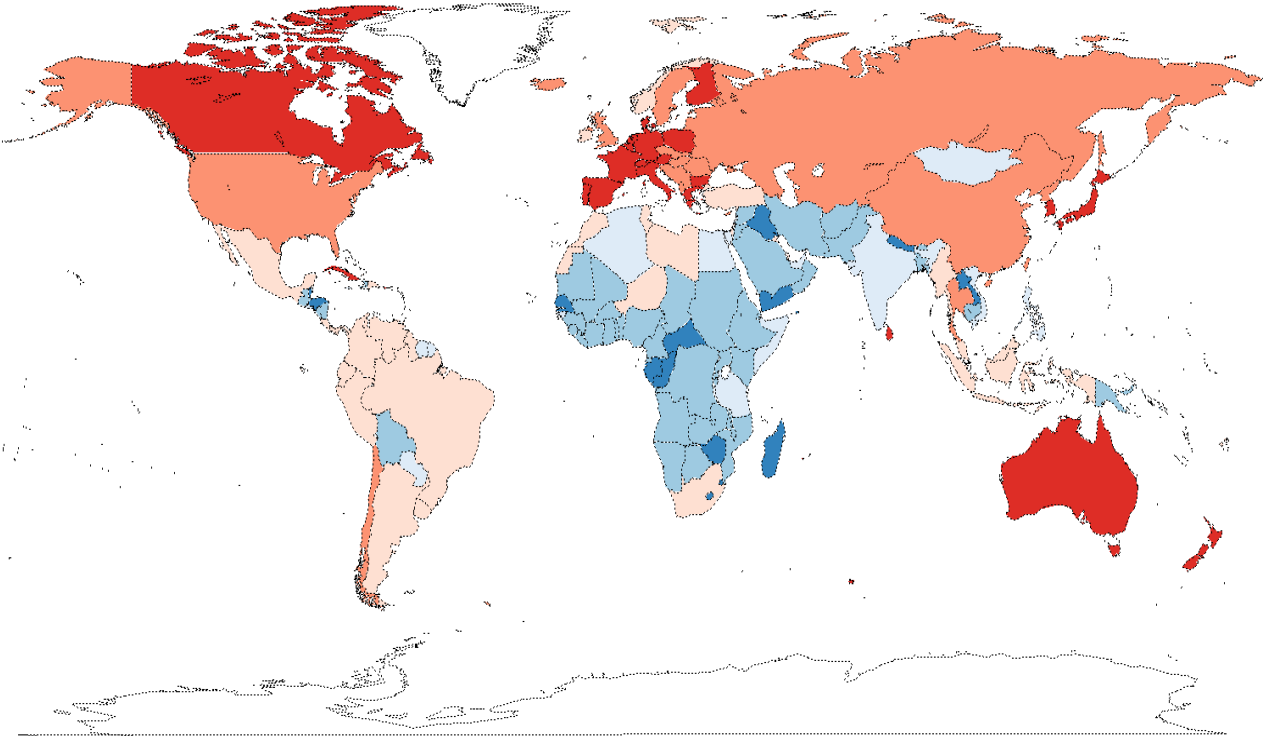
Relationship between GDP Growth and Demographic Composition ($R^2 = 0.30$), Net of Valuation Effects

Developed Markets
GDP Growth and Demographic Shares



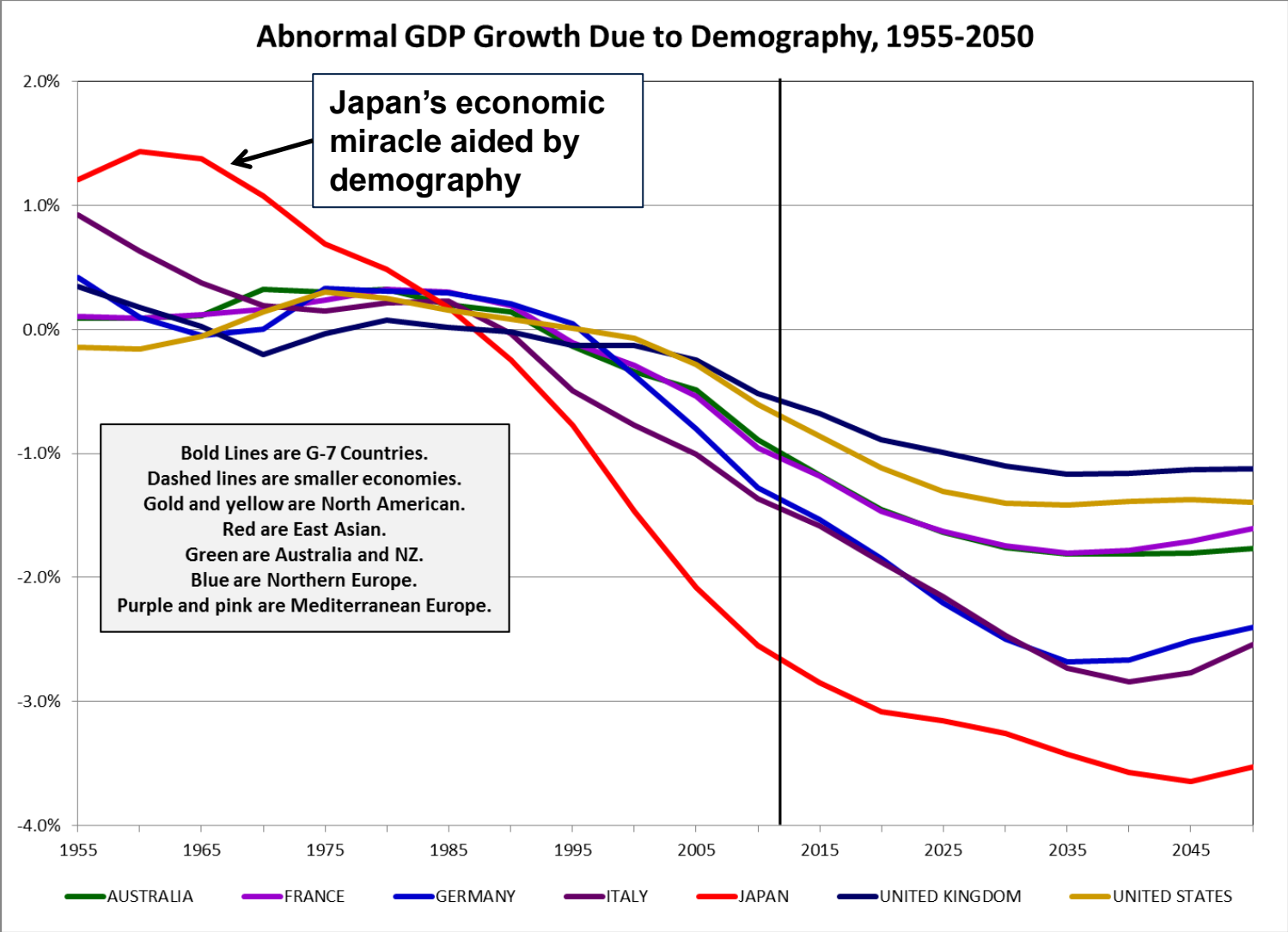
Source: Research Affiliates, based on data from United Nations, Penn World Table, and Global Financial Data.

Indications for GDP Growth, Based on Demographic Composition, 2011–2020



Source: Research Affiliates, based on data from United Nations, Penn World Table, and Global Financial Data.

Excess Per Capita GDP Growth for G-7 Countries, Based on Demographic Composition, 1955-2050



Source: Research Affiliates, based on data from United Nations, Penn World Table and Global Financial Data.

Recap of the Headwinds / US Example

Deficit Spending Creates Phony GDP

- Cutting 10% deficit to zero in 5-10 years reduces GDP growth by 1-2% per year.

Debt Incurs Debt Service Costs

- National debt up from 50% to 100% of GDP in the past 30 years implies 0.83% slower GDP growth until debt is reduced.

Demographic Aging Slows GDP Growth

- GDP growth = growth in work force + productivity growth.
- Slower work force growth costs the difference, 0.8%, in GDP.

Real GDP Growth: 2.4% past 30 years, 2.7% past 50 years

- With these headwinds, 2% GDP growth is a home run.
- 1% is far more likely. ***New Normal, Indeed!***

Investment Implications of the 3-D Hurricane

If our debt burden is too large, choices are: Pay the debt, abrogate, or reflate

Which will our policy leaders choose?

- Inflation protection will be priced at a premium
- Retirees selling assets to a proportionally smaller pool of buyers
- Equities under pressure
- Opportunities in emerging markets

The “Third Pillar” of our portfolio: diversifying into EM, alternative markets, and inflation hedges

Setting Return Expectations:

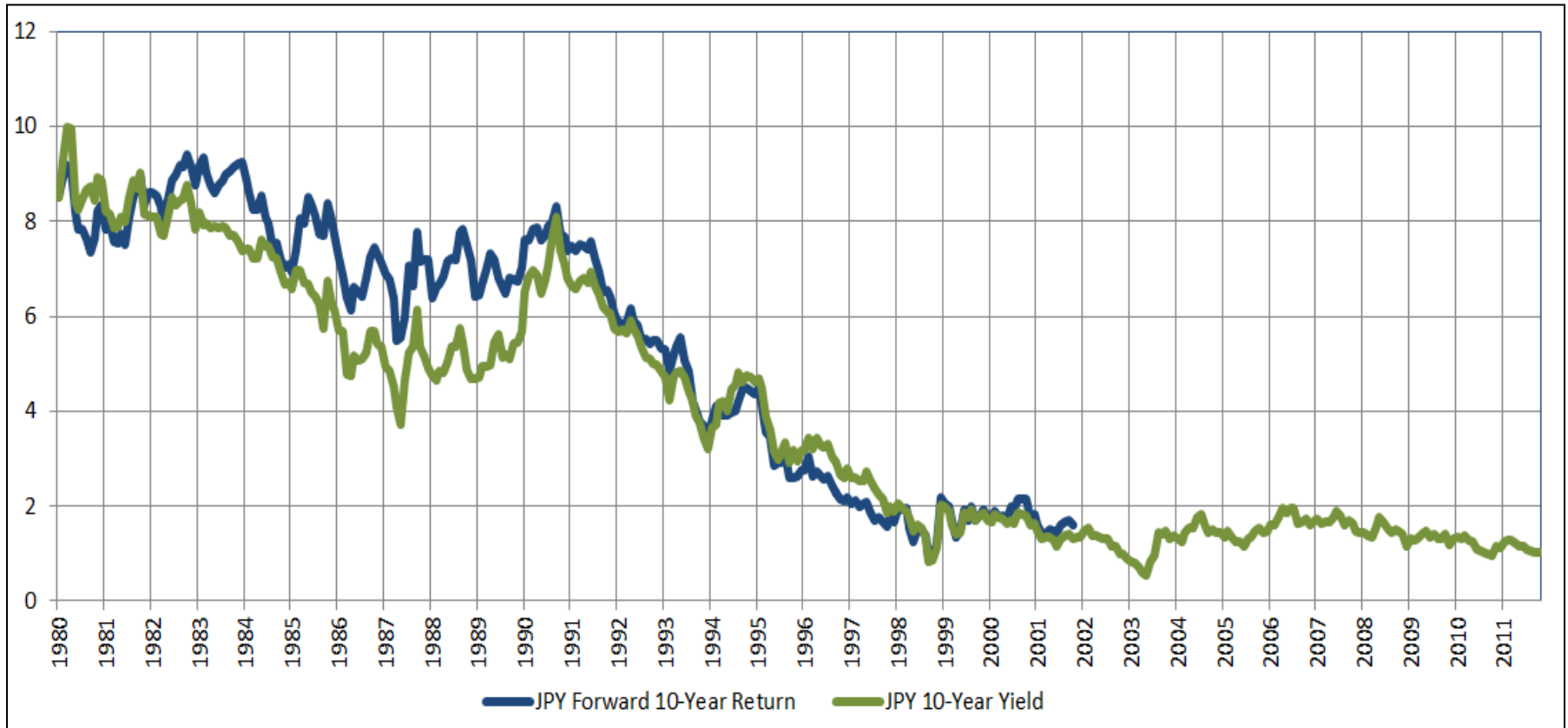
**How Do We Gauge Future
Stock and Bond Market Returns?
Where are the Opportunities?**



Bond Market Returns Follow Yields

Japan

Future *long-term* bond returns closely follow entry yield



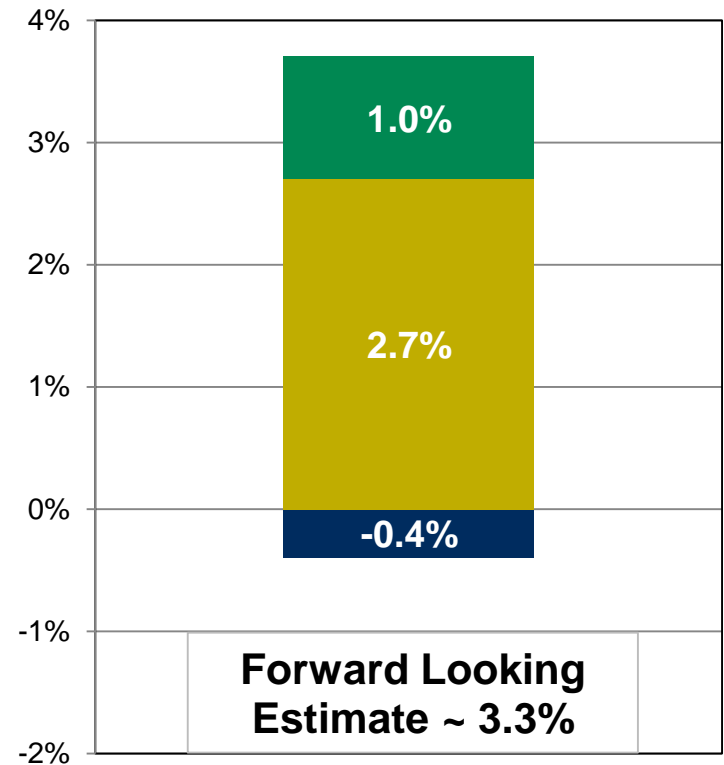
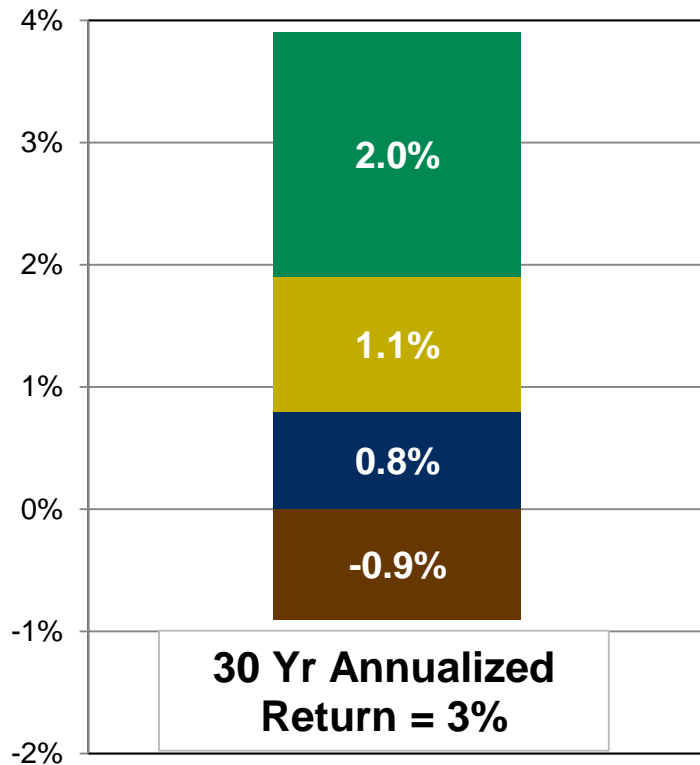
Do we expect the 30-year historical return of 6% or the current yield of 1%?

Source: Research Affiliates, LLC based on data from Ibbotson and Barclays Capital.

Stock Market Returns Follow Valuation

Japanese 30 Year Returns Through December

- Default estimate for valuation change = 0%
- BEI TIPS Yield = -0.4%
- Dividend Yield = 2.7%
- Expect Real Earnings Growth ~ 1%



Source: Research Affiliates, LLC based on data from Ibbotson and FactSet. Sub-components do not equal decomposed total return due to compounding effects.

Three Paths to Improved Return Potential

Consider Other Asset Classes

- Stocks and bonds are not the only choices
- Unconventional assets can be priced to offer better returns

Seek Alpha

- Conservatively, focusing on avoiding negative alpha, *or*
- Aggressively, if you have confidence in the opportunities

Actively Manage the Asset Mix

- *Include* alternative markets in these decisions
- Seek assets which are out of favor, priced for better returns

We Believe All Three Paths Can Be Pursued in Parallel!

A popular fourth alternative—leverage—boosts risk far more than it improves prospective returns

Achieving Sensible Returns? Yes, We Can.

A carefully crafted, well-executed departure from the classic balanced portfolio can move portfolios materially towards our aspired returns:

Larger allocations to out-of-favor markets

Using better indexes and well-crafted low risk active strategies

Rebalancing can add up to 1% to long-term risk-adjusted investment returns, if it's done with discipline

Tactical shifts from comfort to uncomfortable (and cheap) markets

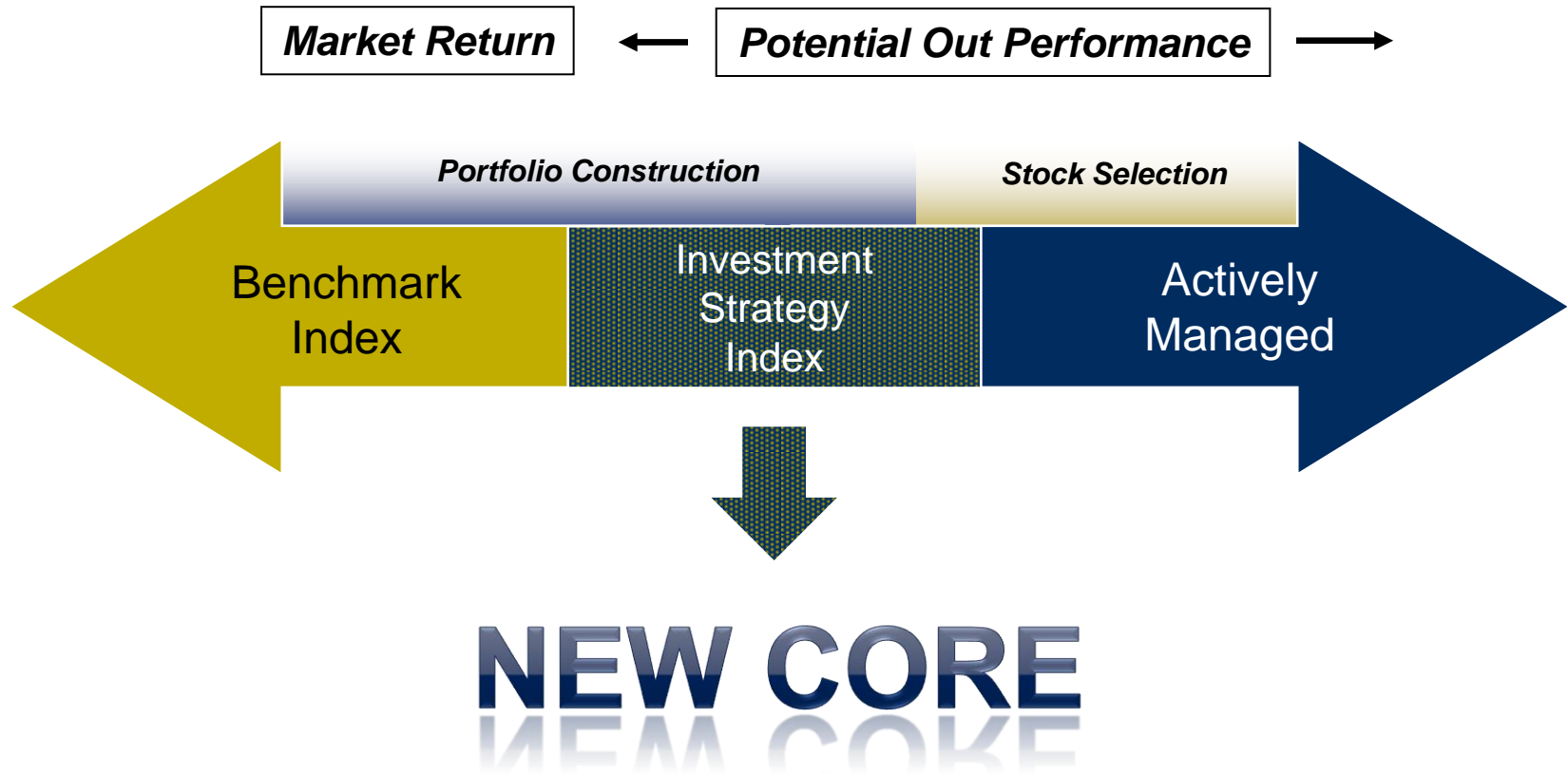
How far you can move down this path, without exceeding the risk tolerance—the maverick aversion—of clients, is something that you'll need to judge very carefully

A Closer Look at “Alpha”

The Fundamental Index[®] Methodology Efficient Indexing for an Inefficient Market[®]



Investment Strategy Indexes



The Fundamental Index Approach

Select and weight stocks by non-price measures of firm size

- Sales, cash flow, dividends, and book value

Achieve excess returns over cap weighting¹

- 2–4% in developed markets, 1–3% in bonds
- Greater in less efficient markets

Preserve the advantages of passive investing

- Diversification
- Liquidity
- Transparency
- Broad economic representation
- Low cost access to equity markets

¹Based on Research Affiliates historical simulated data using CRSP, Compustat, Worldscope and Datastream, on universe of U.S. equities 1962-2009 and International equities 1984-2009.

The Fundamental Index Factors

Effectively break the link with price

- Pricing errors are uncorrelated
- Both overvalued and undervalued stocks will be either overweighted or underweighted, but the errors largely offset each other

Metrics reflect objective measures of relative size

- Widely acceptable measures of company size
- Less susceptible to gaming
- Easily accessible data
- Not intended to be predictive of future size or value
- Broadly available across countries

RAFI Developed 1000 Weights: Composite Measure of Size, 2010 Target Weights

	5-Year Average						Current		RAFI Weight
	Sales		Cash Flow		Dividend		Book Value		
	Weight	Rank	Weight	Rank	Weight	Rank	Weight	Rank	
Royal Dutch Shell	1.5%	2	1.2%	4	1.3%	6	1.1%	5	1.2%
Bank of America	0.5%	19	0.7%	17	1.2%	9	1.5%	1	1.0%
ING Group	0.7%	11	2.0%	1	0.5%	34	0.3%	63	0.9%
Wal-Mart Stores	1.5%	1	0.6%	24	0.5%	42	0.5%	25	0.8%
Microsoft	0.2%	108	0.6%	23	1.7%	1	0.3%	61	0.7%

Simulated RAFI Developed 1000 1984–2010

Index	Ending Value of \$1	Annual Return	Volatility	Sharpe Ratio	Tracking Error
MSCI World	\$13	9.9%	15.6%	0.32	---
Equal Weight Developed 1000	\$16	10.8%	15.8%	0.37	2.9%
Book	\$21	12.0%	15.8%	0.44	4.4%
Cash Flow	\$28	13.1%	15.0%	0.54	4.4%
Sales	\$26	12.8%	16.4%	0.48	5.2%
Gross Dividend	\$28	13.2%	14.7%	0.56	6.2%
RAFI Composite	\$26	12.8%	15.3%	0.51	4.6%

Source: Research Affiliates, LLC. based on data from Bloomberg, Datastream and Worldscope. THE INDEX DATA PUBLISHED HEREIN IS SIMULATED, UNMANAGED AND CANNOT BE INVESTED IN DIRECTLY. PAST SIMULATED PERFORMANCE IS NO GUARANTEE OF FUTURE PERFORMANCE AND IS NOT INDICATIVE OF ANY SPECIFIC INVESTMENT. ACTUAL INVESTMENT RESULTS MAY DIFFER.

Performance Across Markets

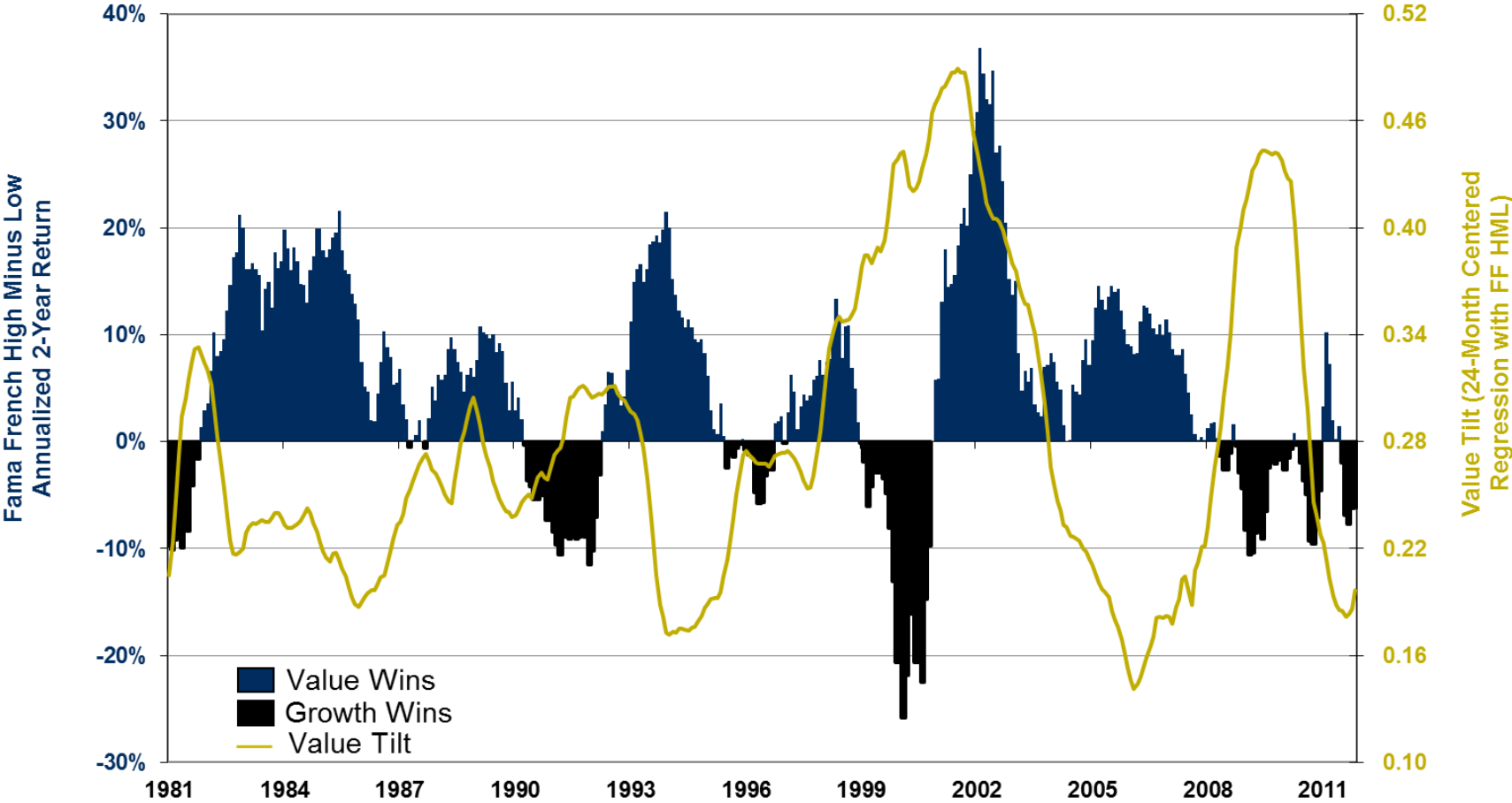
December 2011

	Annualized Return	Annualized Volatility	Annualized Value Add	% 3-Year Wins	Start Date
FTSE RAFI US 1000	11.3%	15.5%	2.0%	74.2%	1962
S&P 500	9.3%	15.2%			
FTSE RAFI - 23 Country Average	12.4%	16.5%	2.3%	91.7%	1984
MSCI - 23 Country Average	10.1%	15.9%			
FTSE RAFI Int'l. Mid-Small 1500	9.2%	17.2%	2.2%	85.1%	1999
MSCI EAFE Small Cap	7.0%	19.8%			
FTSE RAFI U.S. Mid-Small 1500	14.8%	19.8%	3.8%	95.6%	1979
Russell 2000	11.0%	20.1%			
FTSE RAFI All World 3000	12.6%	15.9%	4.2%	90.7%	1984
MSCI All Country World	8.4%	15.8%			
FTSE RAFI EM	13.9%	25.7%	8.4%	99.4%	1994
MSCI EM	5.5%	24.5%			

Source: Research Affiliates, LLC. based on data from Bloomberg. The 23-Developed Countries correspond to the country study conducted by Research Affiliates, LLC. Index data prior to launch date is simulated. Launch date: FTSE RAFI US 1000 (11/28/2005), FTSE RAFI Country Indexes (11/28/2005), FTSE RAFI US MS 1500 (5/4/2006), FTSE RAFI AW 3000 (10/06/2008), FTSE RAFI EM (7/9/2007). THE INDEX CANNOT BE INVESTED IN DIRECTLY. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE PERFORMANCE AND IS NOT INDICATIVE OF ANY SPECIFIC INVESTMENT. ACTUAL INVESTMENT RESULTS MAY DIFFER.

Exposure to Value is Dynamic

FTSE RAFI US 1000, 1981–2011



Value Tilt—Rolling regression coefficient of FTSE RAFI US 1000 against Fama French HML (Value) factor.

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Efficient Indexing for an Inefficient Market

Cap-weighting has a rich history... and a flaw

The Fundamental Index concept improves on cap weighting

- Addresses the shortcomings of cap weighting while maintaining the benefits of a broad market index
- Generally outperforms its cap-weighted counterparts
- Adds more value as pricing errors increase (i.e., in markets like emerging markets, international, and small cap)

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