Surviving the 3-D Hurricane of Deficits, Debts and Demographics

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London Stock Exchange

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Lessons From the Past
Thoughts About the Future

What did the “naughts” teach us?

The “3-D” hurricane force headwind:

- Deficit
- Debt
- Demographics

Where are the opportunities today?

What Did the "Naughts" Teach Us?
Was it a Lost Decade and Counting?

Only For Investors Who Were
(1) Equity Centric and
(2) Cap-Weighted

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Revisiting Core Principles

Conventional view: Stocks for the long run misconceptions

- "Stocks beat bonds by 5% a year over the very long run"
  - Historically predicated on higher yields than we've seen in 20 years
  - Largely fueled by falling dividend yields and rising PE ratios
  - Net of these effects historically would have seen half this, 2.5%
- "Stocks beat bonds for anyone willing to think long term"
- "Stocks loft from new high to new high with each new bull market"

The past dozen years has seen a massive revaluation of risk

- The 12-year ***realized*** "risk premium" has been negative
- Now prices are down and prospective rewards for risk-bearing up
- Are stocks yet priced to deliver a large risk premium again? No

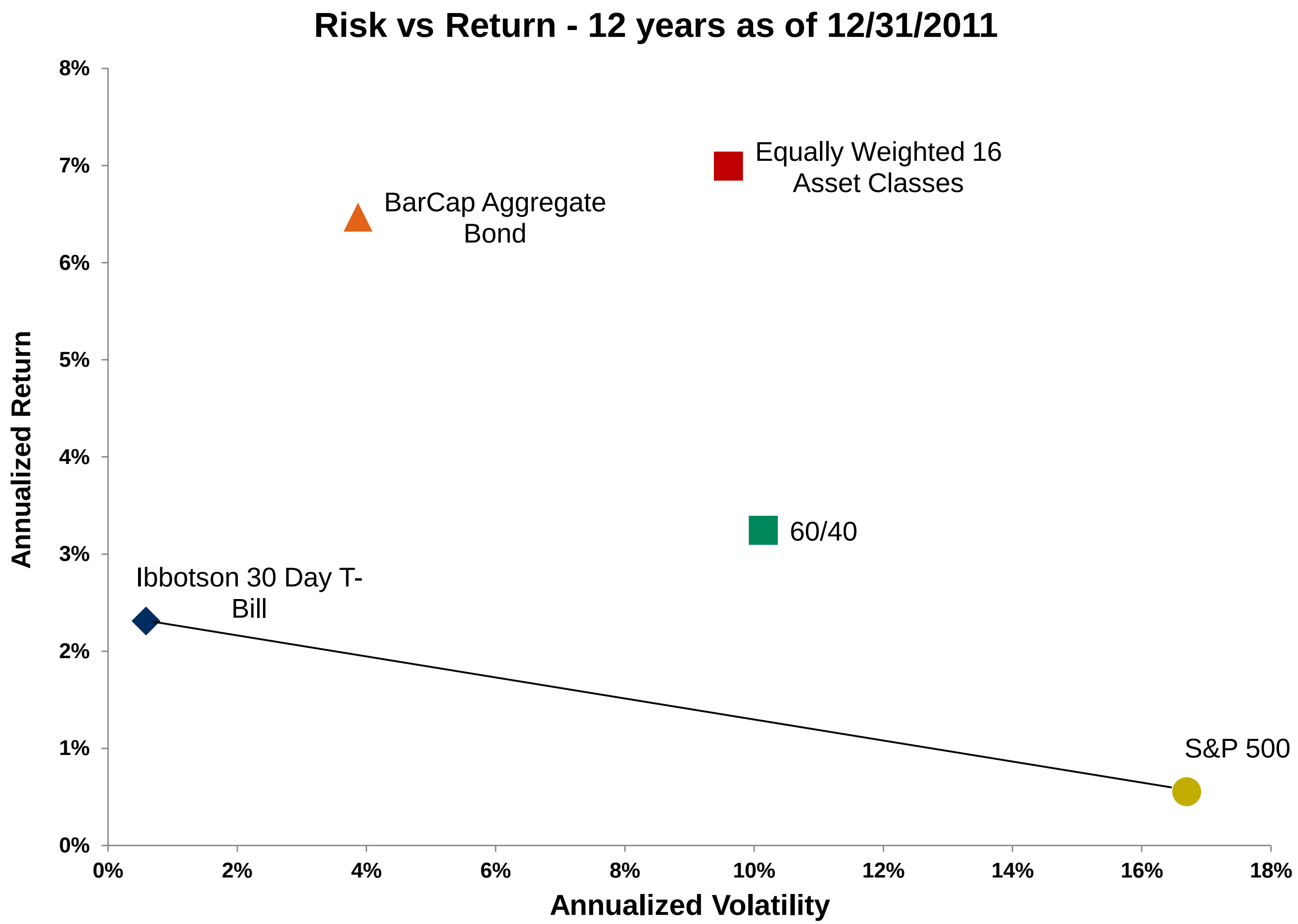
2000–2011: A Lost Decade and Counting?

	Asset Class	Benchmark	12 yr Annualized Return (as of 12/31/2011)
Fixed Income	Emerging Markets Bonds	JPM EMBI Plus	10.87%
	Long Treasury	BarCap US Treasury Long	9.45%
	Long Credit	BarCap US Long Credit	8.56%
	TIPS	BarCap US Treasury US TIPS	8.06%
	High-Yield Bonds	BarCap US Corporate High Yield	7.24%
	Emerging Local Currency	JPM ELMI+	7.01%
	Core Bonds	BarCap US Agg Bond	6.47%
	Bank Loans	Credit Suisse Leveraged Loan	4.55%
	Short-Term Bonds	ML US Corp&Govt 1-3 Yr	4.36%
	Convertibles	ML Convertible Bonds All Qualities	3.67%
Asset Allocation	**Equally Weighted 16 Asset Classes**	**EW 16 Asset Classes**	**6.99%**
	60/40	**60% S&P 500/ 40% BarCap Agg**	**3.24%**
Equity	Emerging Markets Equities	MSCI Emerging Markets (Gross)	8.13%
	Small Cap US Equities	Russell 2000	4.61%
	Global Equities	MSCI AC World	1.19%
	Developed ex US Equities	MSCI EAFE (Gross)	0.93%
	Large Cap US Equities	**S&P 500**	**0.55%**
Other	REITs	FTSE NAREIT All REITs	11.29%
	Commodities	DJ UBS Commodity	6.02%
	US Inflation	**IA SBBI US Inflation**	**2.47%**

All returns are total returns and are reported in USD.
Equally Weighted 16 Asset Classes consist of all of the benchmarks above except for 60/40 S&P/BarCap and MSCI AC World.
Equally Weighted 16 Asset Classes and 60% S&P/40% BarCap Aggregate returns assume monthly rebalancing.

Source: Research Affiliates, LLC., based on data from Morningstar Encorr and Bloomberg.

A Capital Market Line Inversion
(Why, Exactly, Do We Seek Equity-Like Returns at Bond-Like Risk?)



The Equally–Weighted portfolio is comprised of the following indexes, rebalanced monthly. BoA ML US Corporate & Government 1-3 Year; BarCap US Aggregate Bond TR; BarCap US Treasury Long TR; BarCap US Long Credit TR; BarCap US Corporate High Yield TR; Credit Suisse Leveraged Loan; JPM EMBI + Composite TR; JPM ELMI + Composite; BoA ML Convertible Bonds All Qualities; BarCap Global Inflation Linked US TIPS TR; FTSE NAREIT All REITs TR; DJ AIG Commodity TR; S&P 500 TR; MSCI Emerging Markets TR; MSCI EAFE TR; Russell 2000 TR. The 60-40 portfolio is 60% S & P 500 TR and 40% BarCap Aggregate Bond TR rebalanced monthly. Past performance is no guarantee of future results.

Sources: Barclays Capital, Merrill, JPMorgan, Russell, Credit Suisse, S&P, MSCI, Dow Jones, Bloomberg, Ibbotson.

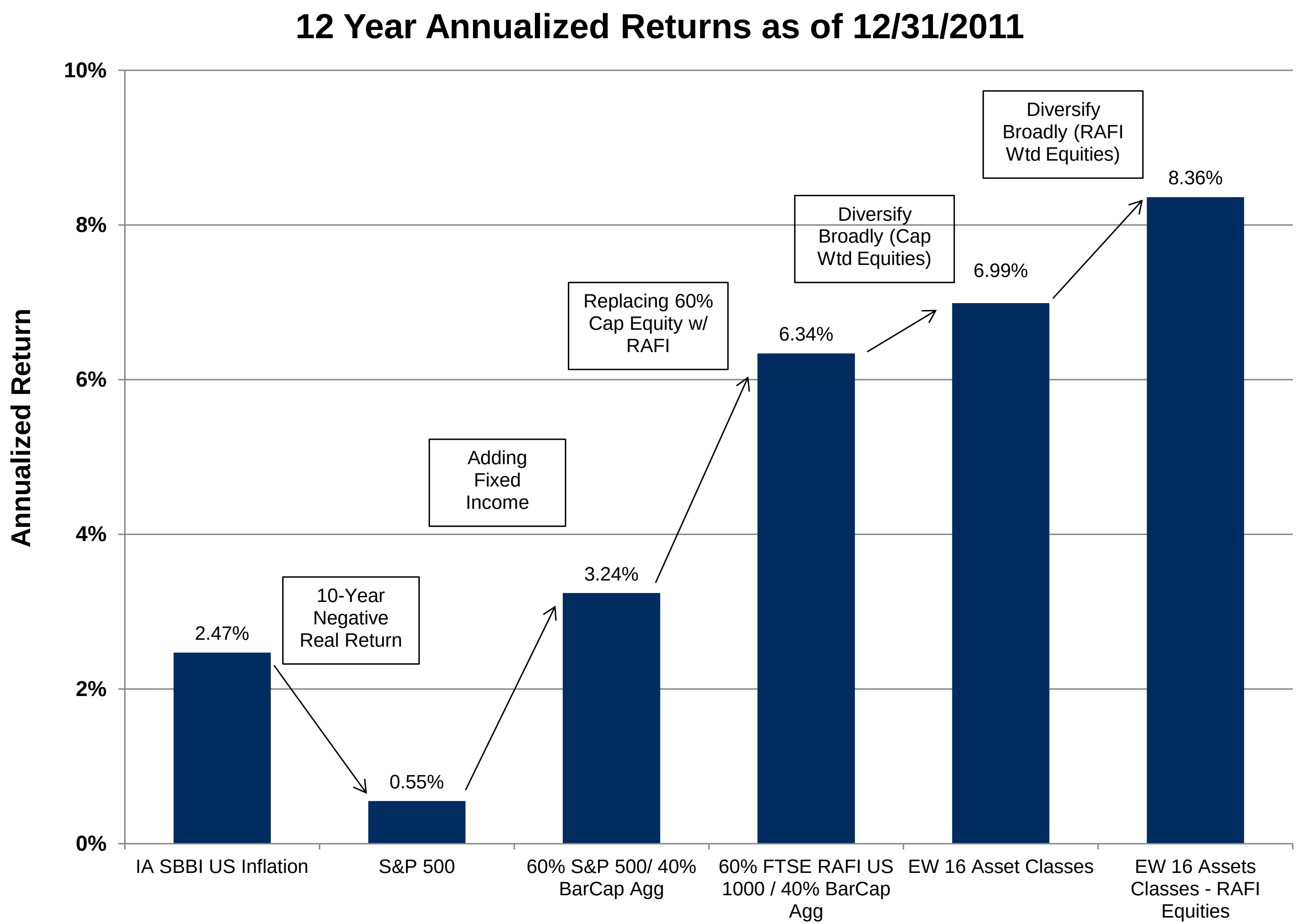
Price Indifferent Indexing vs. Cap Weighted Equities

Region	Weighting	Benchmark	Annualized Return (1/1/2000 through 12/31/2011)
All World	**Economic Size**	**FTSE RAFI All World 3000**	**6.79%**
	Market Capitalization	MSCI AC World	1.19%
US	Equal	S&P 500 Equal Weight	5.99%
	Economic Size	**FTSE RAFI US**	**5.53%**
	Market Capitalization	S&P 500	0.55%
Developed ex US	Equal	MSCI EAFE Equal Weighted (Net)	4.61%
	Economic Size	**FTSE RAFI Developed ex US 1000**	**4.15%**
	Market Capitalization	MSCI EAFE (Gross)	0.93%
Emerging Markets	Equal	MSCI EM Equal Weighted (Gross)	9.67%
	Economic Size	**FTSE RAFI Emerging Markets**	**15.43%**
	Market Capitalization	MSCI Emerging Markets (Gross)	8.13%

Note: All returns are total returns and are reported in USD. MSCI EAFE Equal Weighted Index only available in Net returns.

Source: Research Affiliates, LLC., based on data from Bloomberg.

Salvaging a Lost Opportunity… In Hindsight



Source: Research Affiliates, LLC., based on data from Morningstar Encorr and Bloomberg.

Looking to the Future

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

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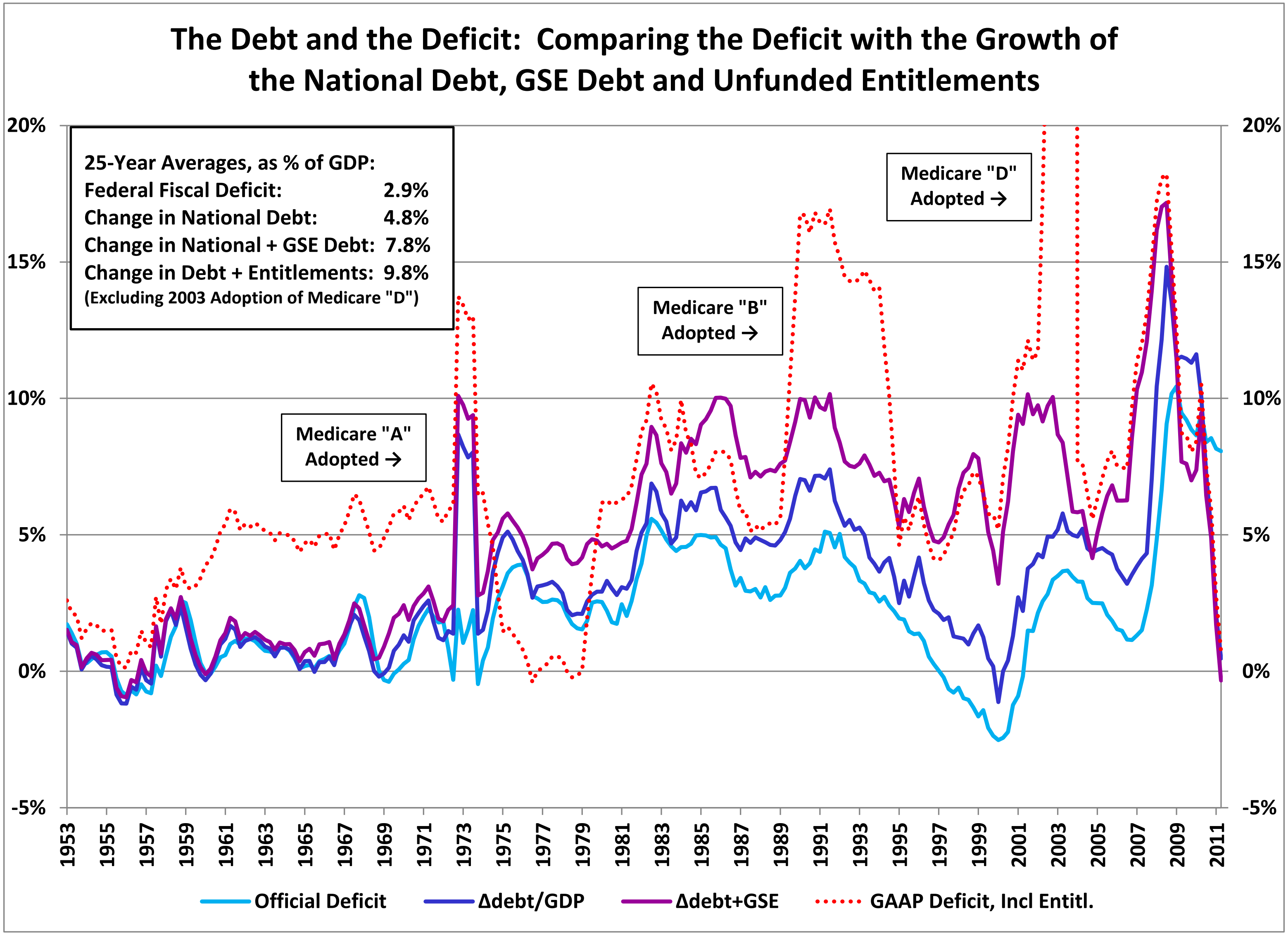
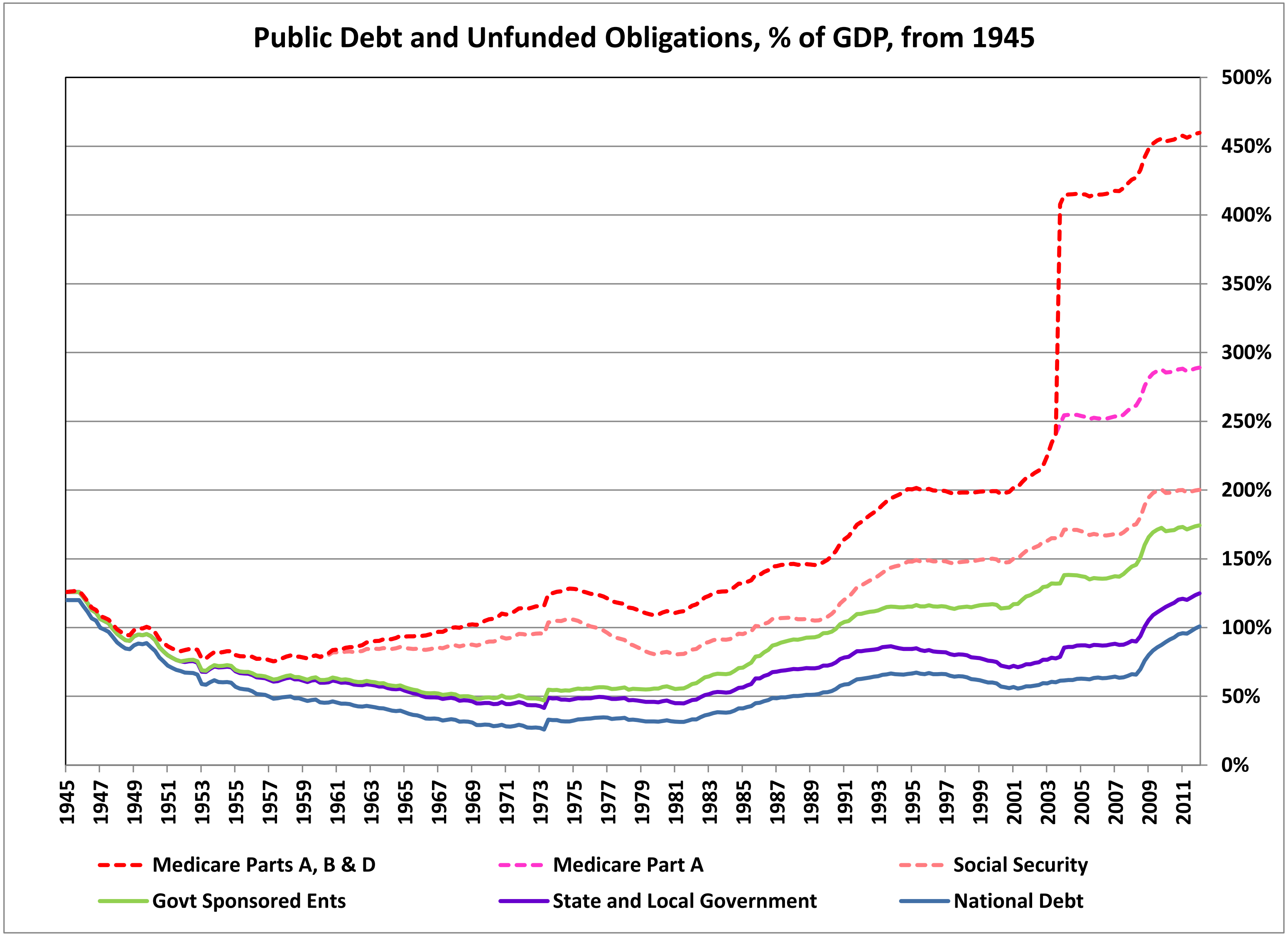
What's the True Deficit? Under GAAP Accounting, Far Higher Than Official Statistics



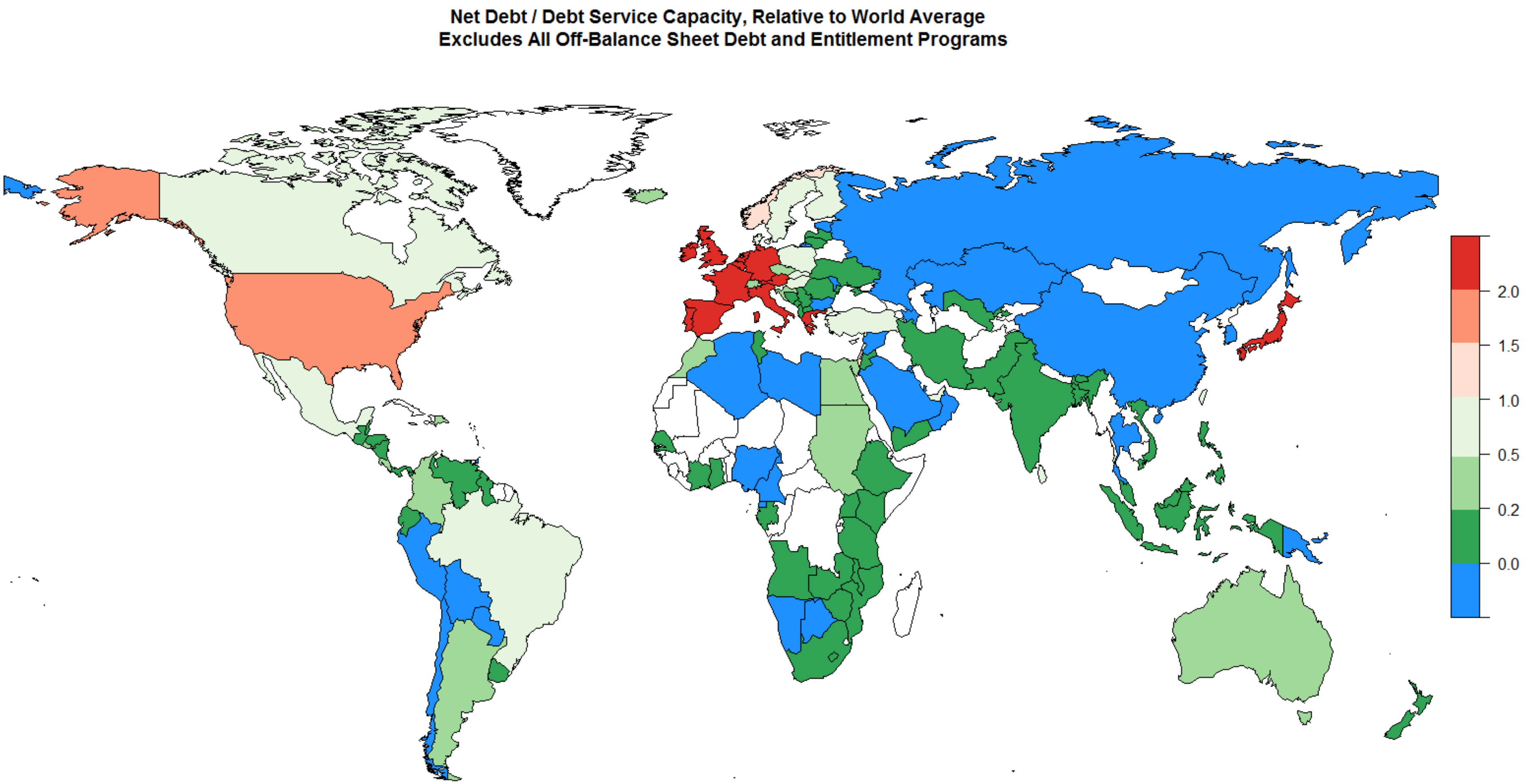
Source: Research Affiliates, LLC, based on data and projections from the U.S. Treasury Department. Through 2012 Q1.

Public Debt and Entitlement Obligations are Growing at a Frightful Pace



Source: Research Affiliates, based on data from Federal Reserve Flow of Funds, 2012 Q1 Release.

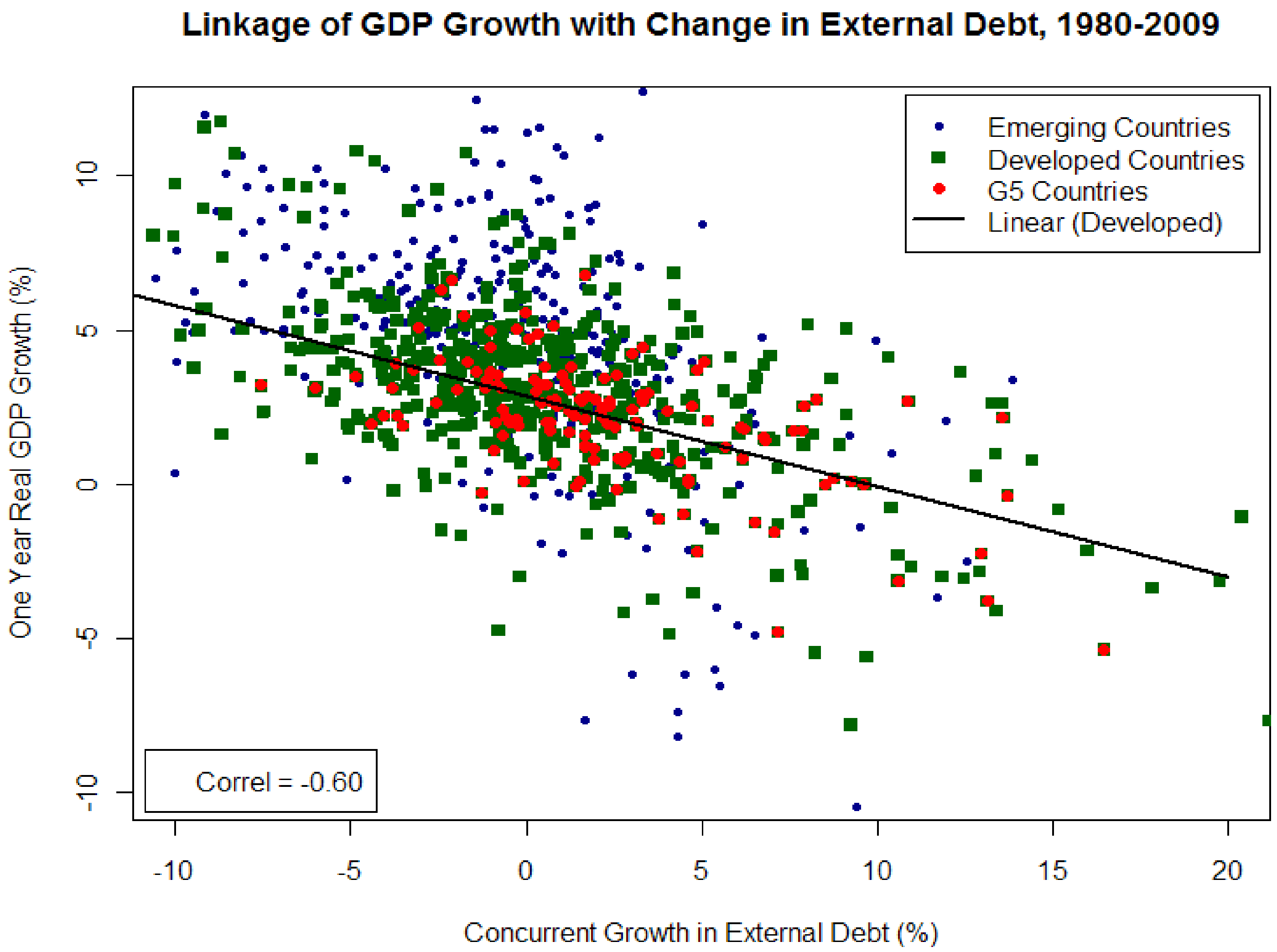
Comparing Debt Levels: Developed vs. Emerging Countries



Net Debt is More than Double Debt Capacity	Net Debt is less than 20% of Debt Capacity	Negative Net Debt

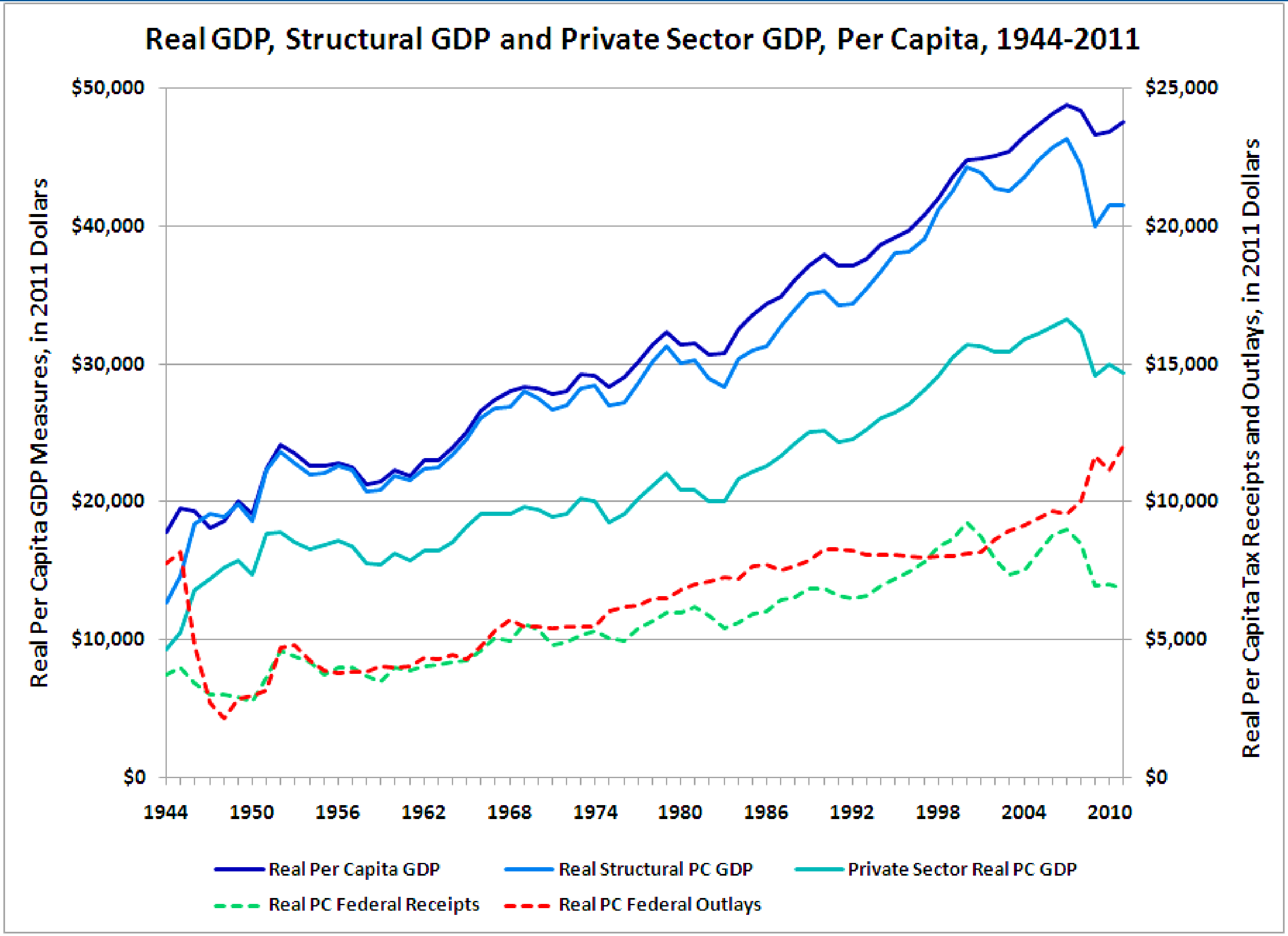
Source: Research Affiliates, LLC, based on data from CIA World Fact Book 2010, International Monetary Fund. Note: RAFI® Scale is defined as the equal weighted average of four measures of a country's ability to repay its debt obligations: capital (GDP), labor (population), resources (land mass), and energy (energy consumption). This average is compared to the amount of a country's net debt outstanding to determine its overall debt service capability relative to the rest of the world.

Comparing Debt Levels: Effects on Growth



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

GDP is the Wrong Measure for Prosperity. 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

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

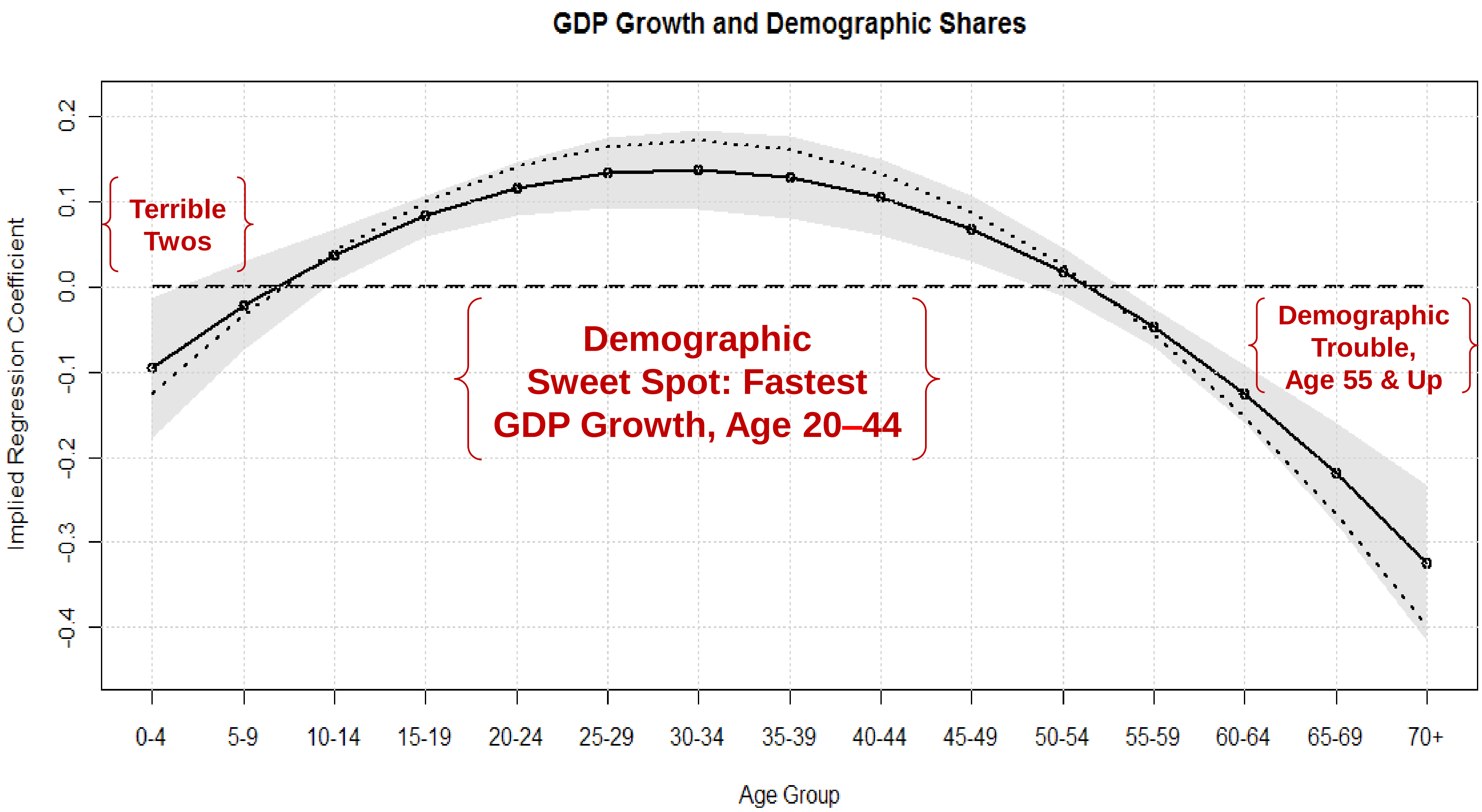
Stocks perform better

- When there are many in the 35–59 age cadres
- 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
- Age shift for rates of demographic change

Demography affects bonds

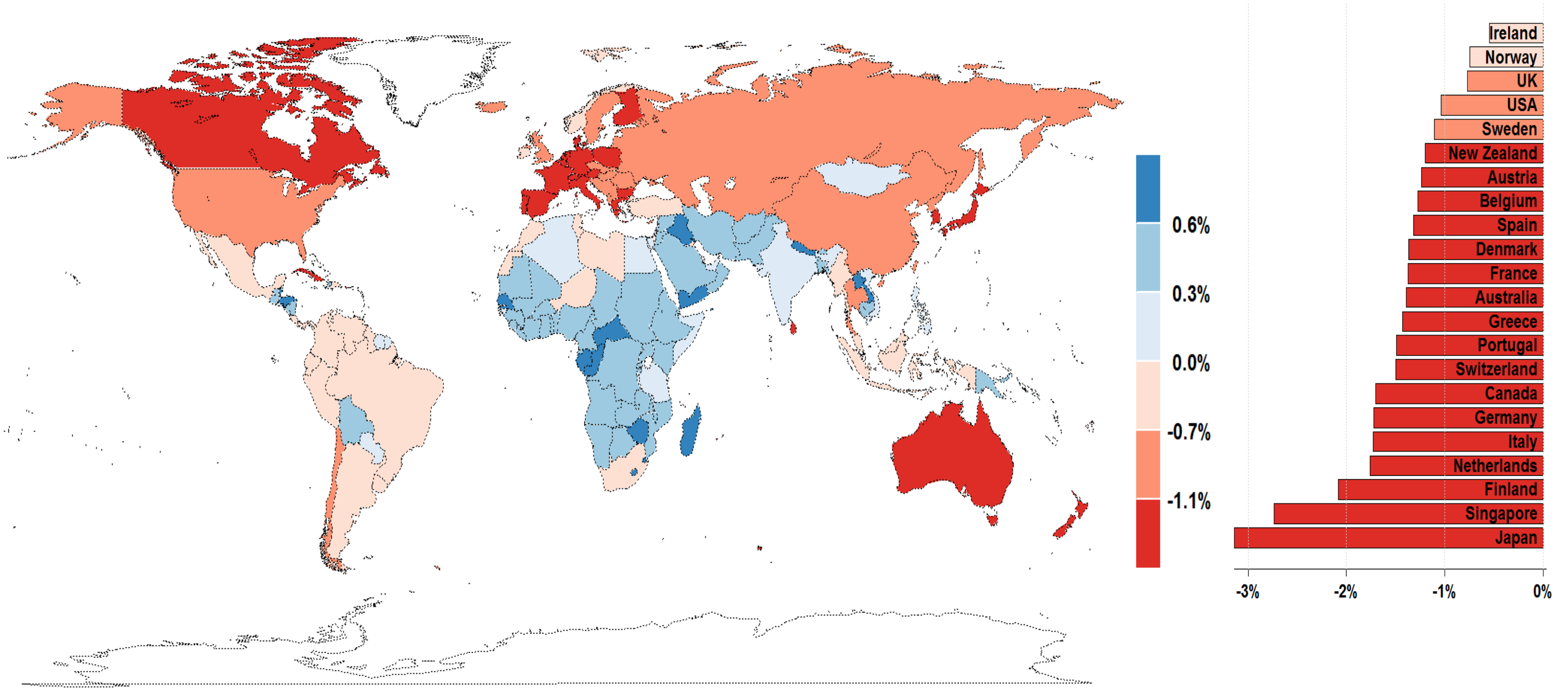
- With roughly a five-year age difference from stocks
- With greater statistical significance than stocks

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



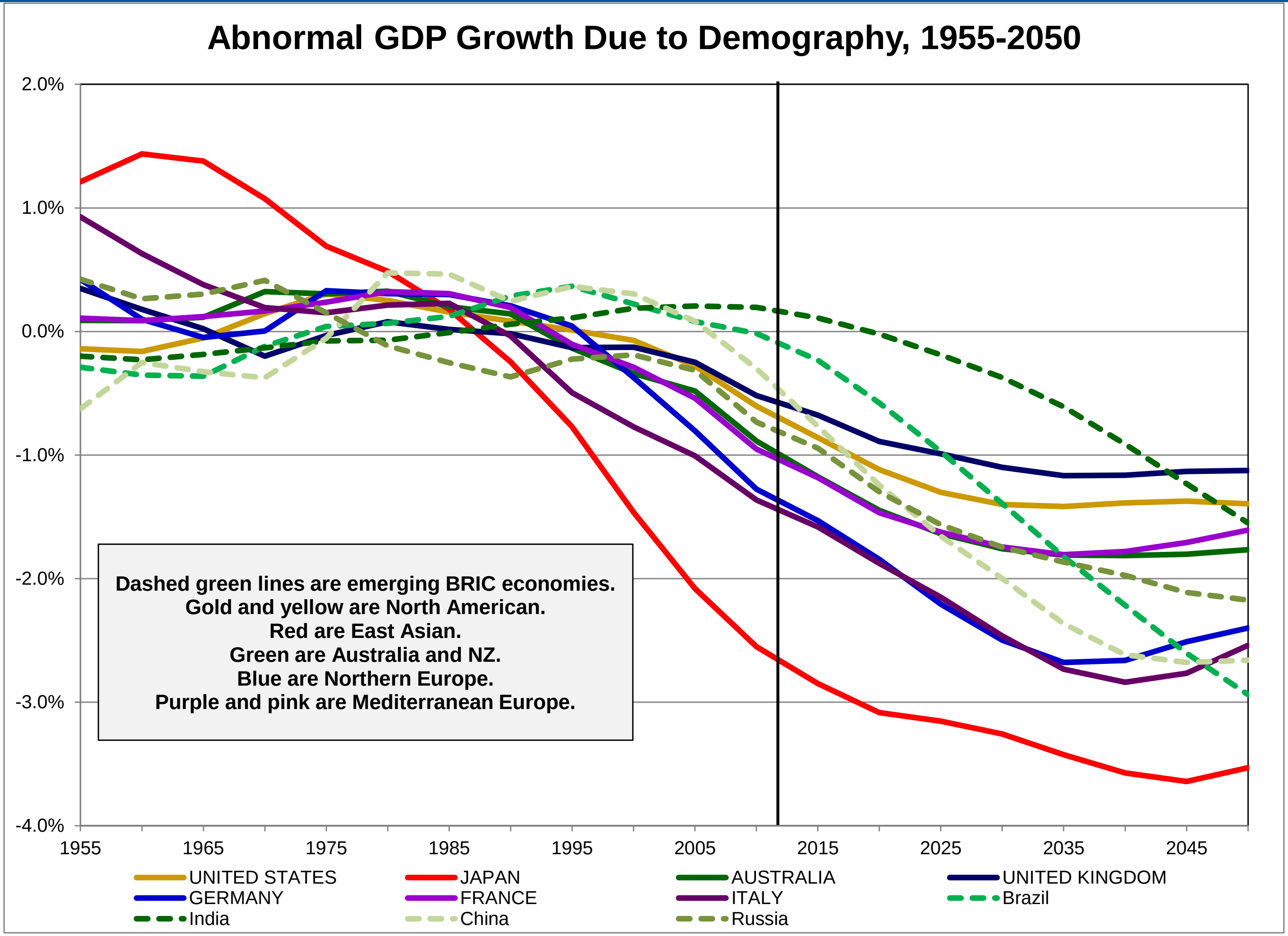
Source: Research Affiliates, based on data from United Nations, Penn World Table, and Global Financial Data.

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



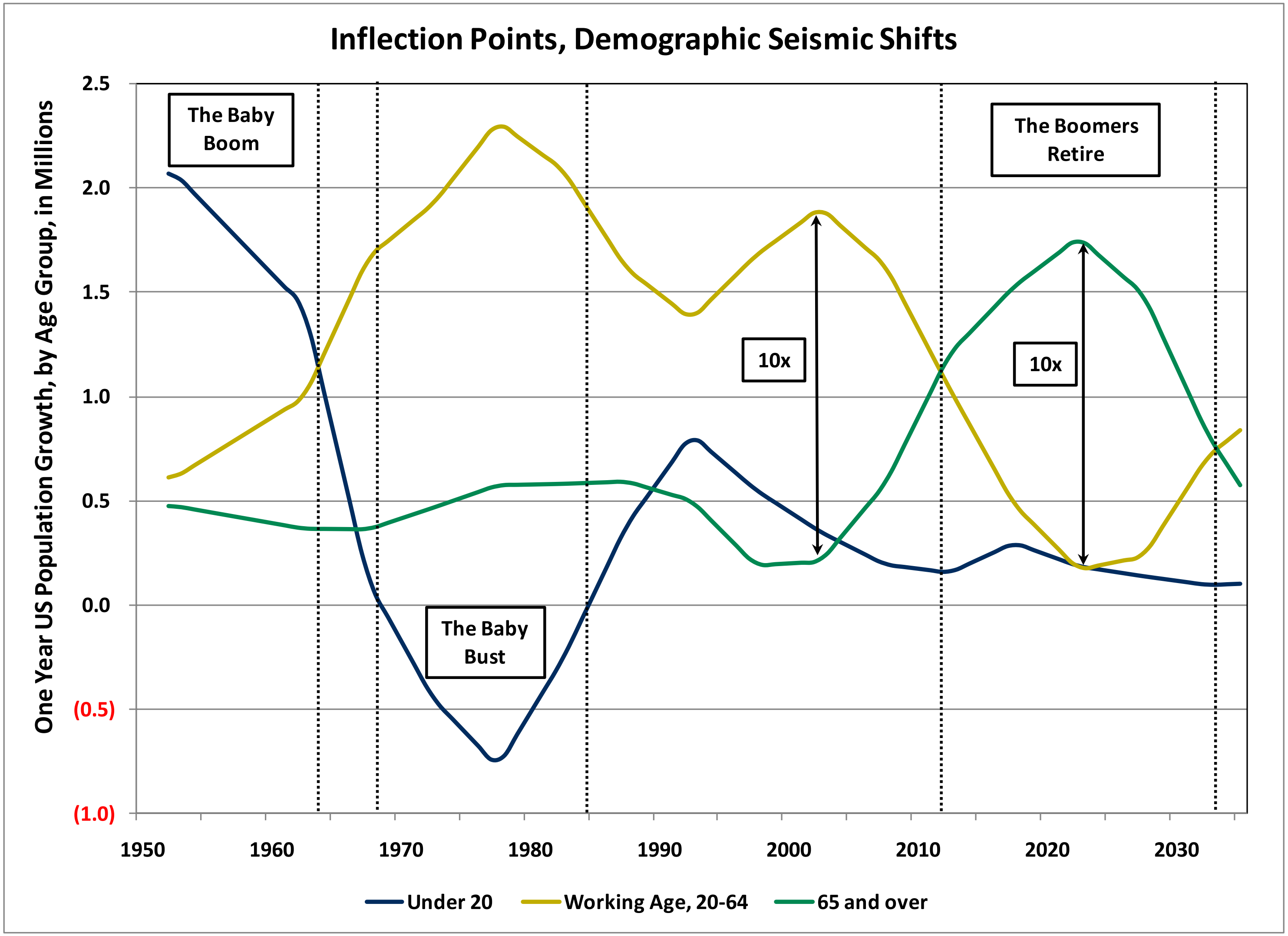
Source: Research Affiliates, based on data from United Nations, Penn World Table, and Global Financial Data.

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



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

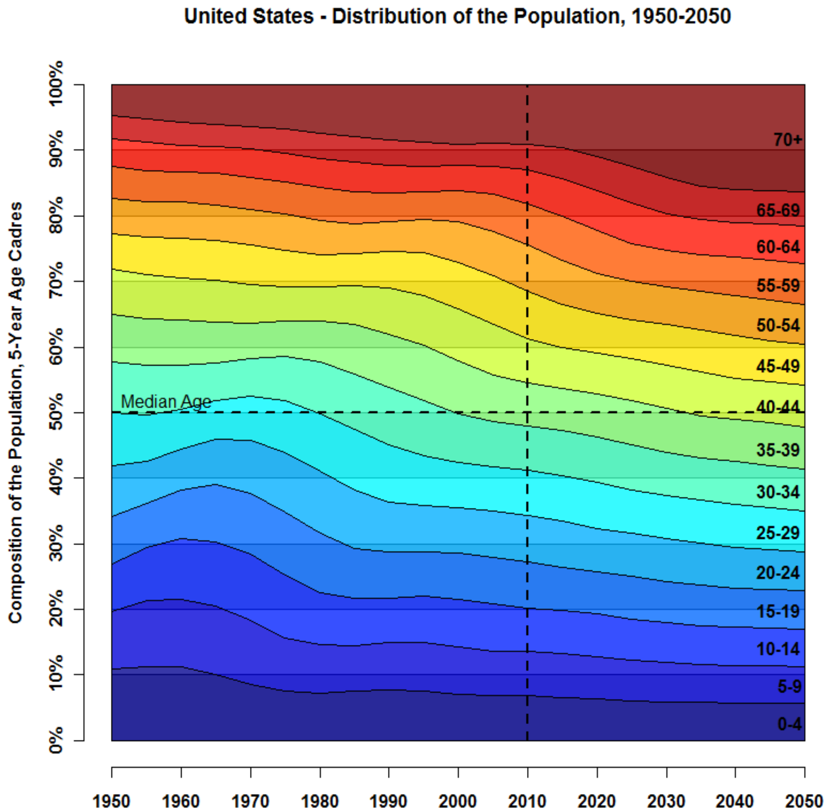
And Demographics Won't Make This Any Easier in the Years Ahead

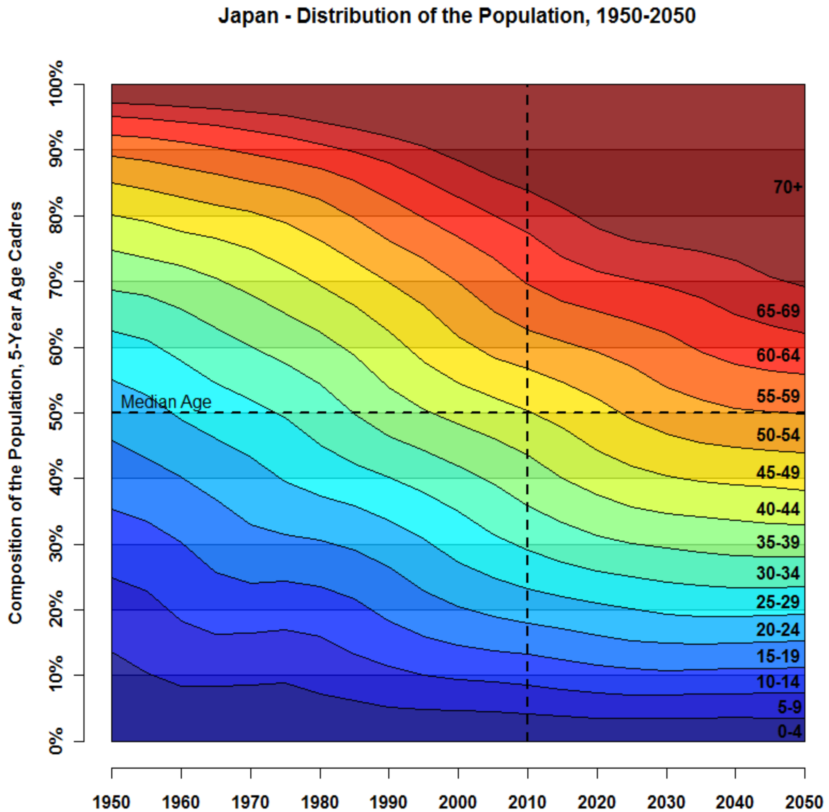


Source: Research Affiliates, LLC, based on population data and projections from the U.S. Social Security Administration.

And Demographics Won't Make This Any Easier in the Years Ahead

Whither US? Whither Japan?



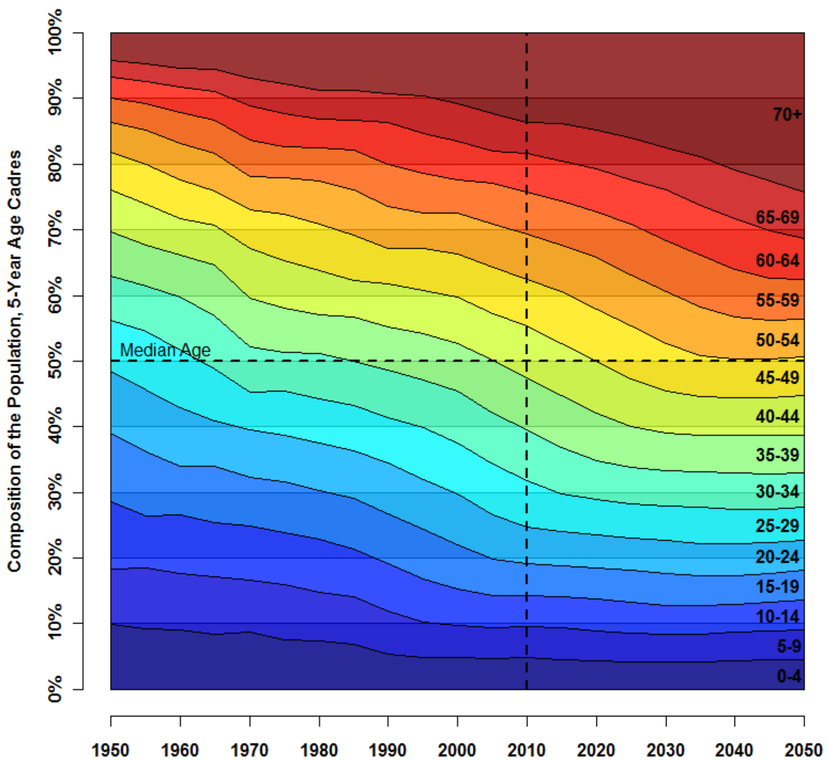


Source: Research Affiliates, LLC, based on data from U.S. Census, United Nations.

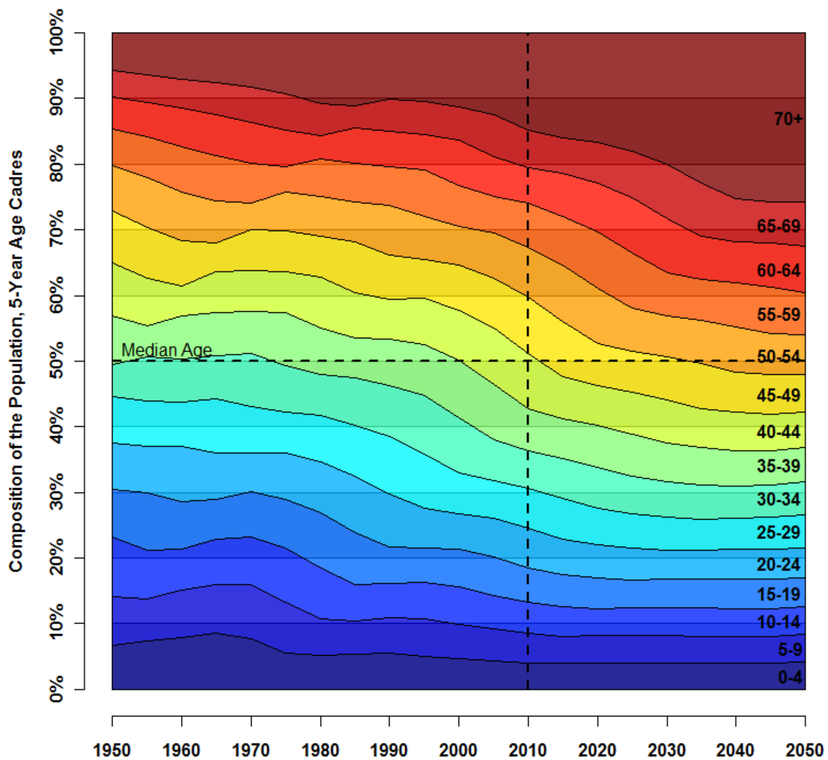
Europe, Graying Fast

Can Germany Save Greece?

Greece - Distribution of the Population, 1950-2050



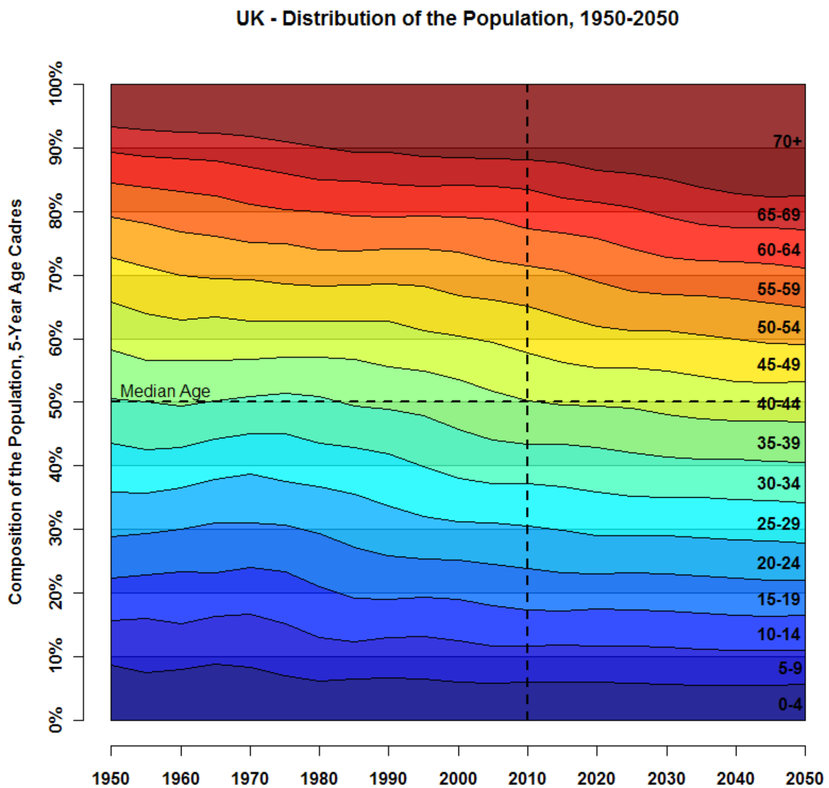
Germany - Distribution of the Population, 1950-2050

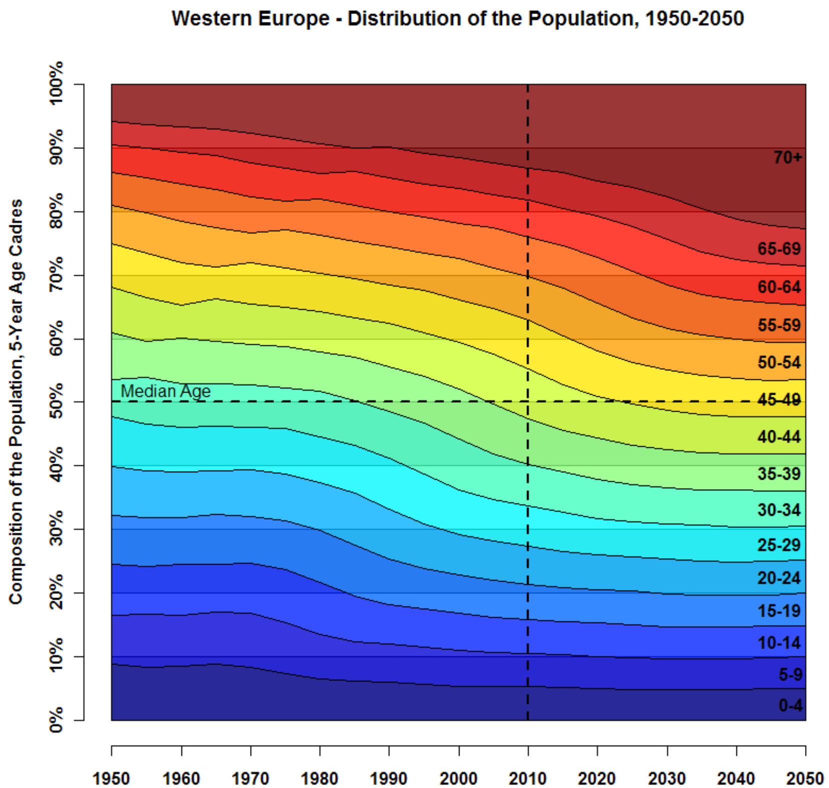


Source: Research Affiliates, LLC, based on data from U.S. Census, United Nations.

How About The UK?

Similar to Other Developed Countries

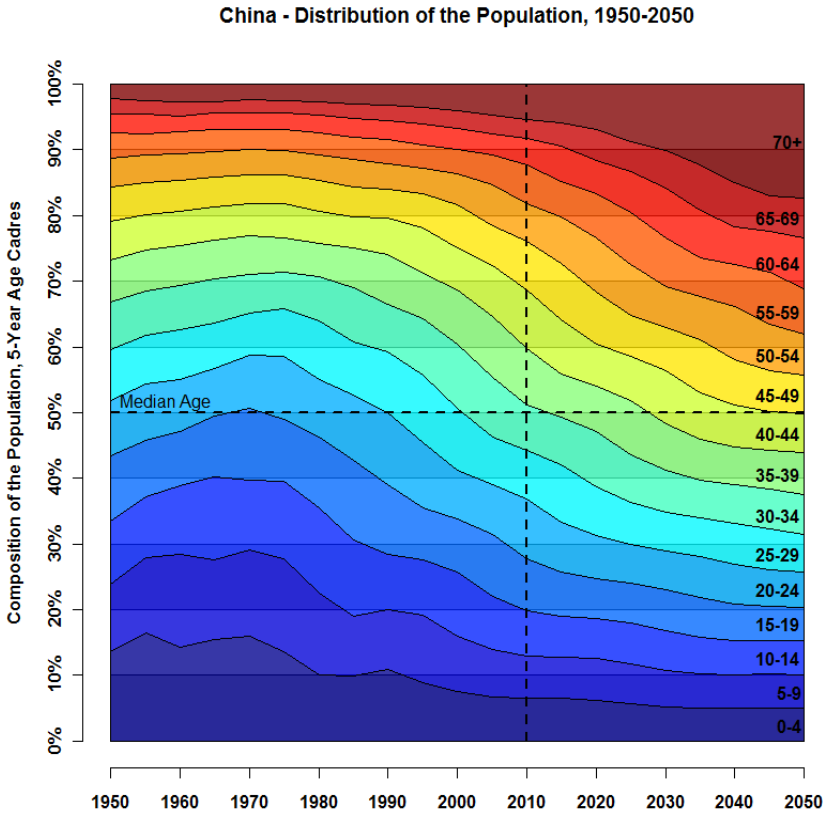


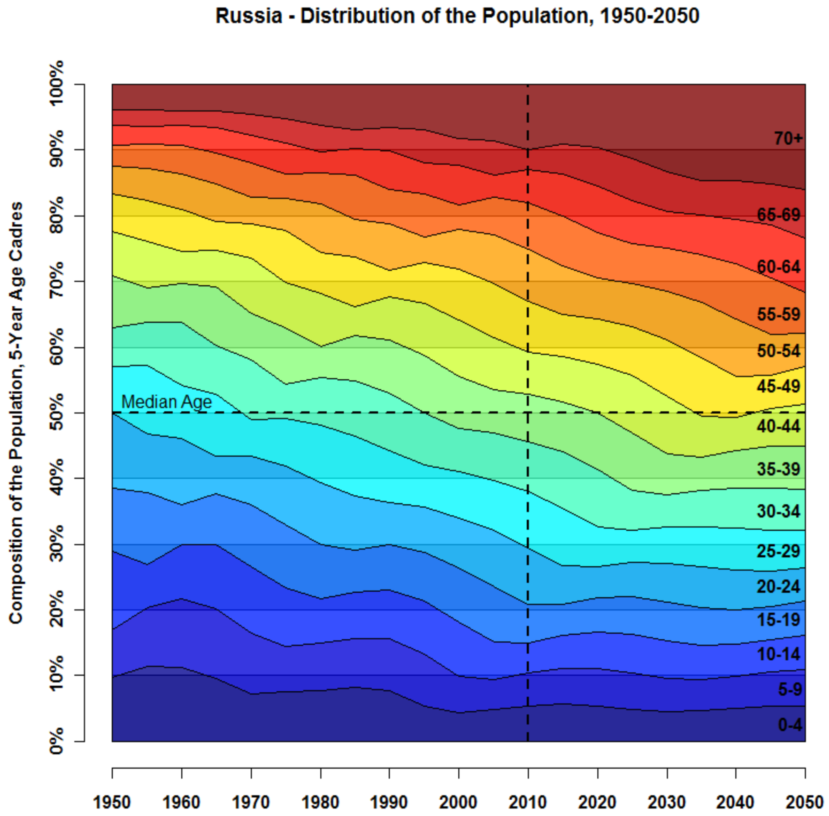


Source: Research Affiliates, LLC, based on data from U.S. Census, United Nations.

Demographic Picture Brightens in EM
Our Headwinds are their Tailwinds

China and Russia are Aging but Well Behind the Developed World

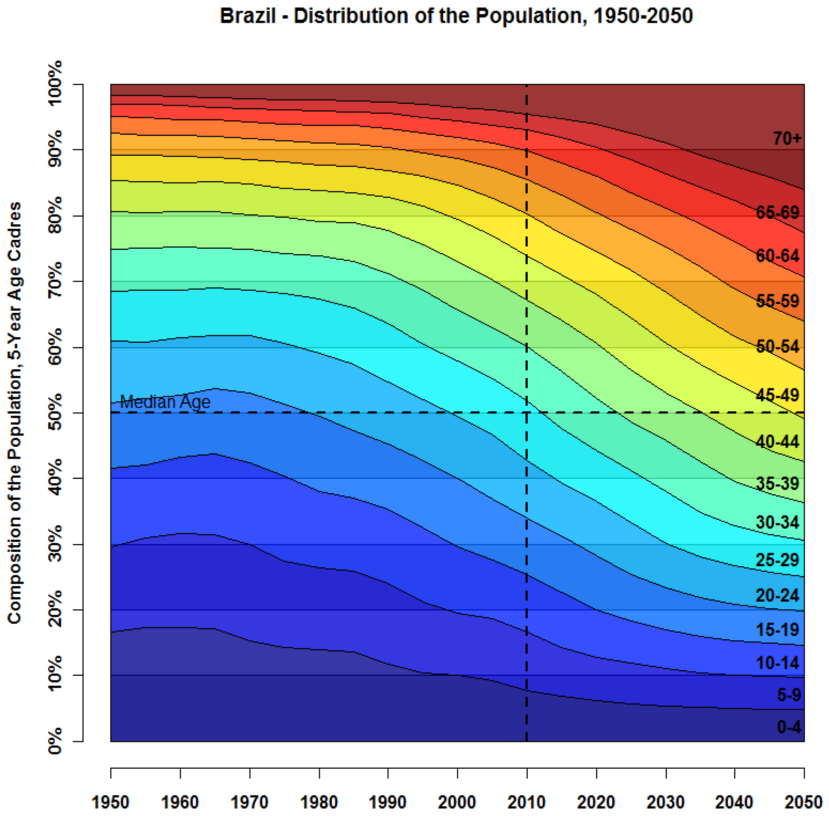


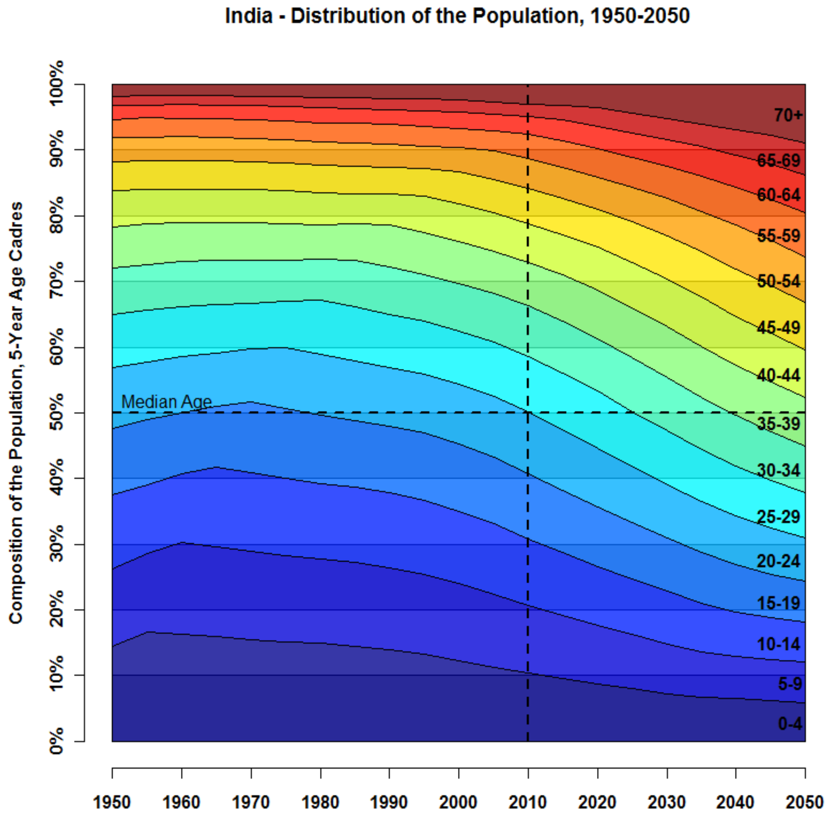


Source: Research Affiliates, LLC, based on data from U.S. Census, United Nations.

Demographic Picture Brightens in EM
Our Headwinds are their Tailwinds

Brazil and India are in an Entirely Different League





Source: Research Affiliates, LLC, based on data from U.S. Census, United Nations.

Recap of the Headwinds

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 politicians 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” should be considered:

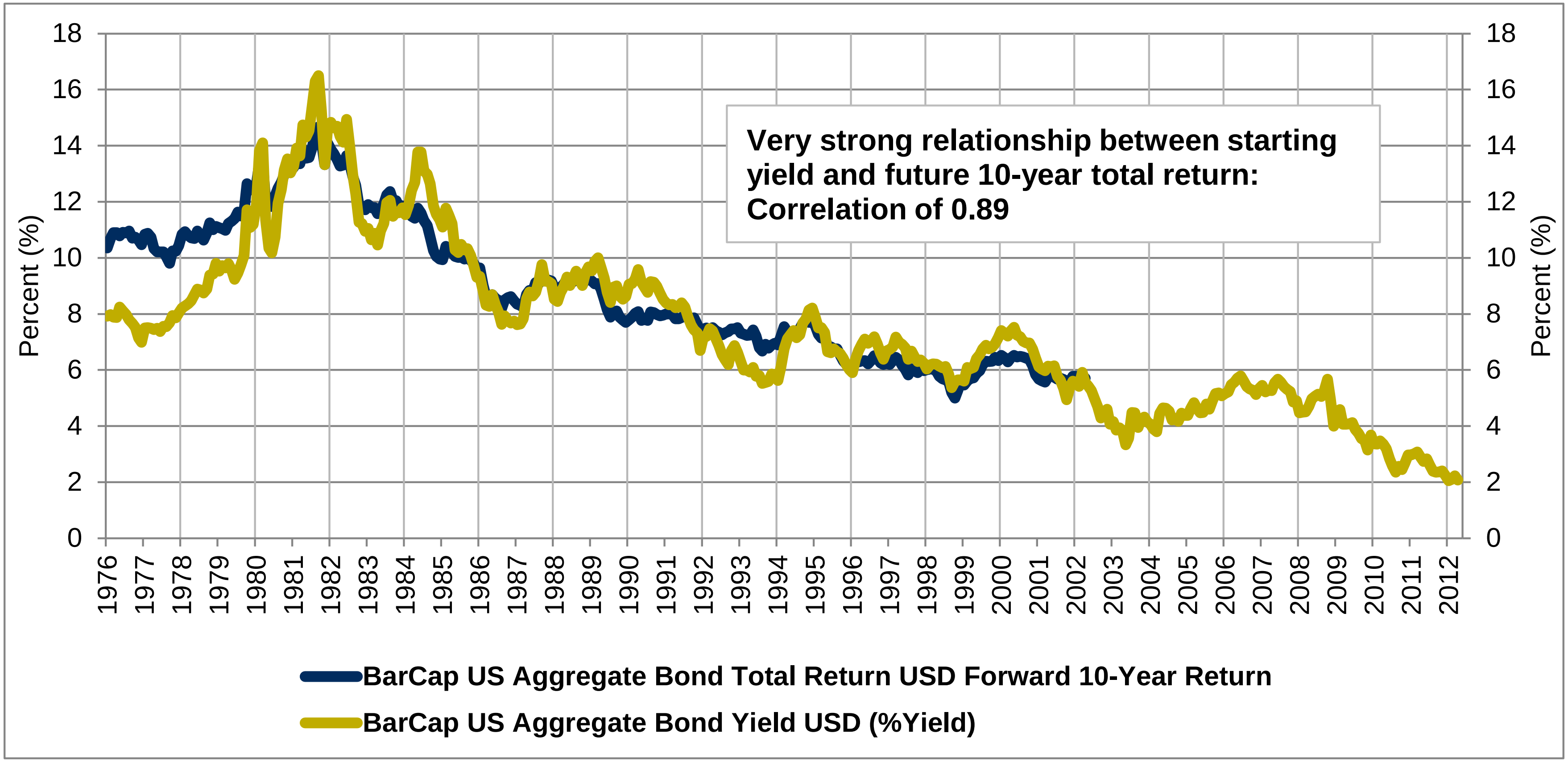
- The first two pillars, stocks & bonds, crater during reflation
- Diversifying into EM, alternative markets, and inflation hedges

Where are the Opportunities Today?

How Do We Set Bond and Stock Market Expectations?

Bond Market Returns Follow Yields - US

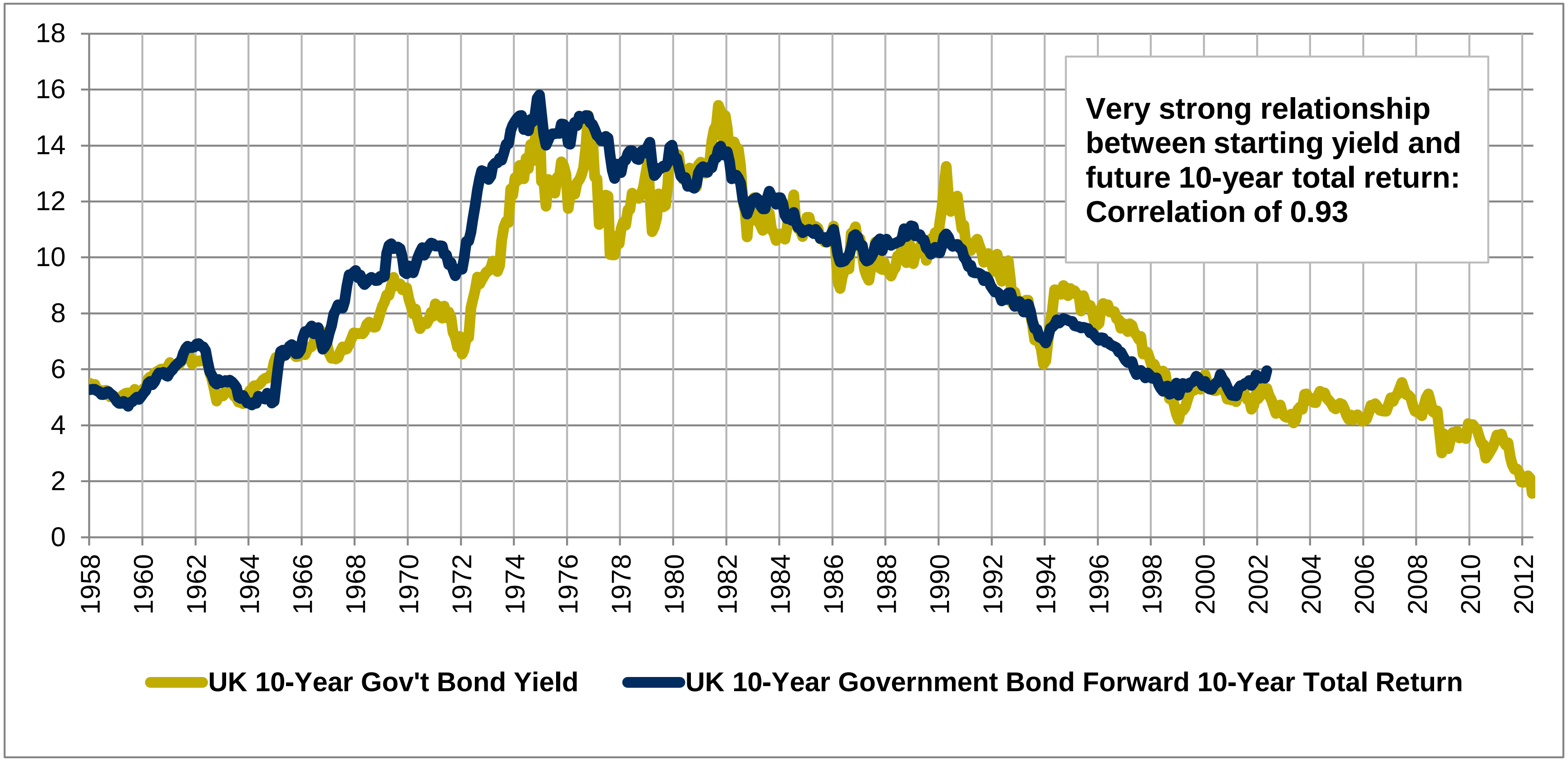
Future *long-term* bond returns closely follow entry yield



Source: Research Affiliates, LLC based on data from Ibbotson and Barclays Capital. As of April 30, 2012.

Bond Market Returns Follow Yields - UK

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



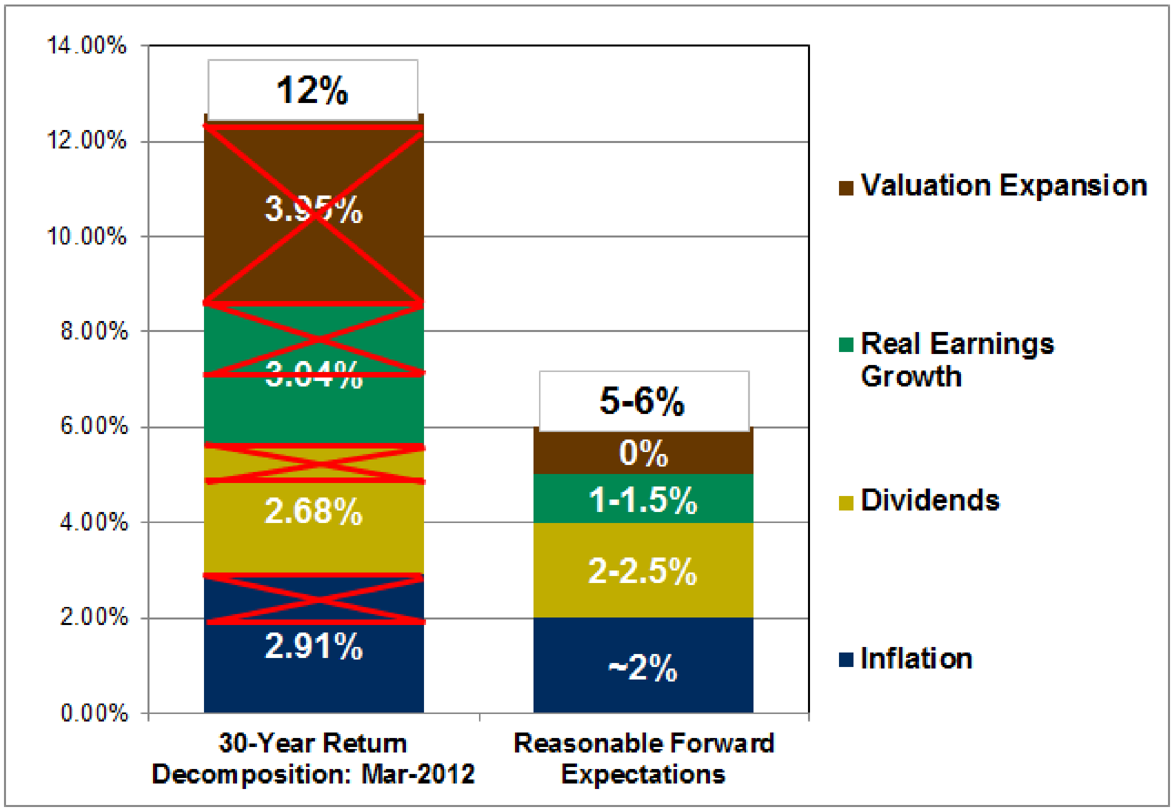
***Source*: Research Affiliates, LLC based on data from Global Financial Data. Data through May 31, 2012.**

Forward Stock Returns: US
Set To Be ½ of Past Returns

30-year returns of S&P 500 stocks: 12%!

Should we expect that for the next decade?? No!

This past period was driven by strong valuation multiple expansion:

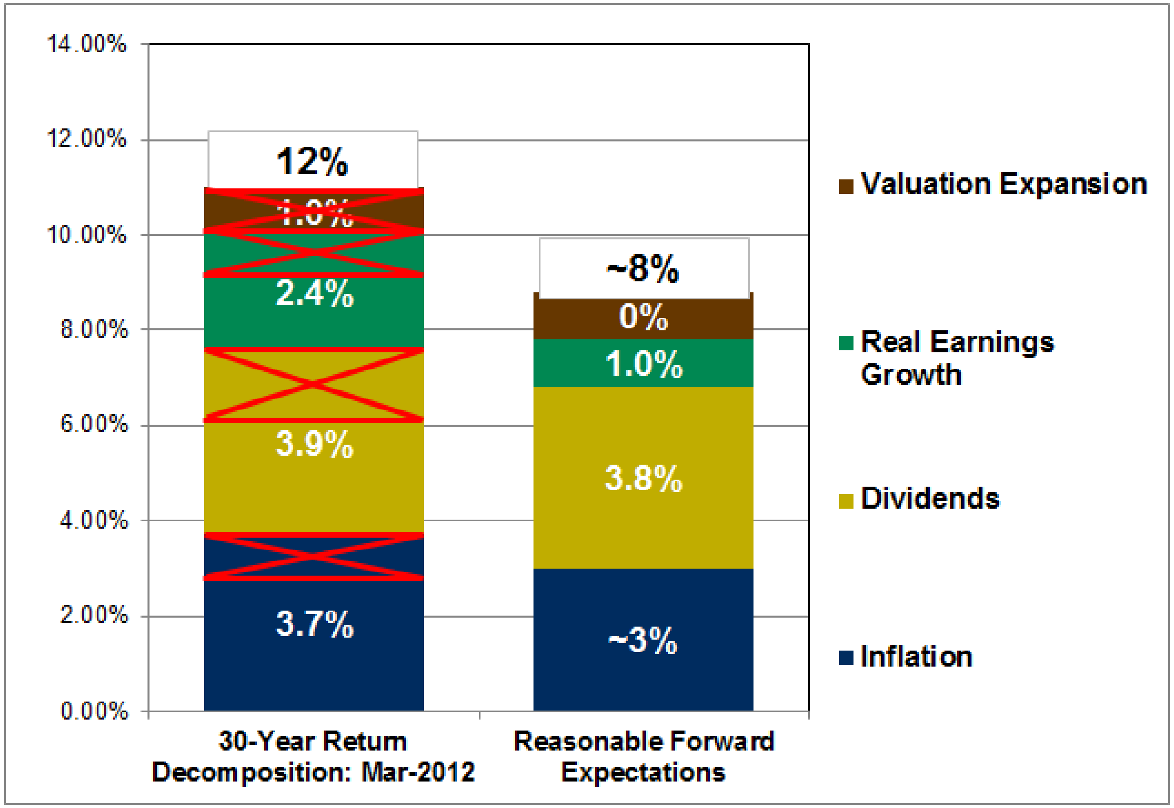


***Source*: Research Affiliates, LLC based on data from Ibbotson and Robert Shiller of Yale. Sub-components do not equal total return due to compounding effects.**

Forward Stock Returns: UK
Set To Be Lower than Past Returns

25-year return of FTSE All Share: 12%!

Should we expect that for the next decade?? No!



Source: **Research Affiliates, LLC based on data from Global Financial Data and Factset. Sub-components do not equal total return due to compounding effects.**

A Spectrum of Returns
"The First Shall Be Last and the Last Shall Be First"

Asset Class	Cumulative Returns 2008–2011	2003–2007	1998–2002	1993–1997	1993–2011 Standard Deviation	Correlation with 60–40
Emerging Markets Stocks	-18	391	-21	44	24	0.71
International Stocks	-28	171	-12	74	17	0.79
REITs	10	131	23	118	21	0.56
Commodities	-23	95	21	58	16	0.32
Large Cap U.S. Stocks	-6	83	-3	152	15	0.99
Emerging Markets Bonds	39	82	44	—	10	0.60
High Yield Bonds	39	67	3	75	9	0.64
Convertibles	6	66	20	92	13	0.83
Unhedged Foreign Bonds	27	43	27	47	9	0.17
TIPS	31	36	52	—	6	0.17
Long Government Bonds	52	32	52	62	10	0.00
Mortgages	28	25	43	42	3	0.17
Core Bonds	28	24	44	43	4	0.22
Money Market	2	16	23	26	1	0.08

Red = worst three **Blue = best three**

Note: Emerging markets and TIPS standard deviations and correlations are for the 12 years ended December 2011.

Past performance is no guarantee of future results. 60-40 represents a composite of the S&P 500 (60%) and Barclays Government/Credit Bond Index (40%). Standard deviation is an absolute measure of volatility measuring dispersion about an average which, for an index, depicts how widely the returns varied over a certain period of time. The greater the degree of dispersion, the greater the risk. Correlation w/60-40 measures the correlation, or tendency to move in tandem, of the performance of the listed asset class with the 60/40 portfolio for the 18-year period ended 12/31/10. A higher number indicates a greater correlation. Emerging Markets Stocks represented by MSCI Emerging Markets Gross Index. Commodities represented by Dow Jones UBS/AIG Commodity Index. REITS represented by Wilshire REIT Index. Emerging Markets Bonds represented by JP Morgan Emerging Markets Bond Index Global. TIPS represented by Barclays U.S. TIPS Index. High Yield Bonds represented by Merrill Lynch High Yield Master II Index. Long Term Govt Bonds represented by Barclays Long-Term Treasury Index. Mortgage Bonds represented by Barclays Mortgage Index. Convertible Bonds represented by Merrill Lynch ALL US Convertible Securities Index. Unhedged Foreign Bonds represented by Citigroup World ex-U.S. Government Bond Index. Money Markets represented by Citigroup 3-Month T-Bill Index. Intl Stocks represented by MSCI EAFE Gross Index. S&P 500 Equal Weighted (SPEW) reflects the performance of the S&P 500 Index with component stocks equally weighted rather than capitalization weighted. The Standard & Poor's 500 Stock Index (S&P 500) is an unmanaged, capitalization-weighted index of U.S. companies generally representative of the U.S. Stock Market. The Barclays US Aggregate Bond Index is generally considered to be representative of the domestic, investment-grade, fixed-rate, taxable bond market. Returns are not indicative of the past or future performance of any investment product.

Fundamental Index Performance

6/29/2012		3 Month	1 Year	3 Year	Since Launch	Launch Date
FTSE RAFI All World 3000		-6.9%	-10.7%	10.8%	7.9%	10/6/2008
MSCI All World		-5.4%	-6.0%	11.4%	7.4%	
	Value Added	-1.5%	-4.7%	-0.6%	0.5%	
FTSE RAFI US 1000		-3.2%	2.0%	18.5%	4.7%	11/28/2005
Russell 1000		-3.1%	4.4%	16.6%	3.5%	
	Value Added	-0.1%	-2.4%	1.9%	1.2%	
FTSE RAFI Europe		-9.8%	-22.8%	3.3%	-1.9%	5/4/2006
MSCI Europe		-7.0%	-15.9%	7.0%	-1.3%	
	Value Added	-2.7%	-6.9%	-3.6%	-0.6%	
FTSE RAFI UK 100		-4.8%	-5.7%	9.9%	-3.3%	3/19/2007
FTSE 100		-4.1%	-4.9%	11.5%	-2.3%	
	Value Added	-0.7%	-0.8%	-1.7%	-1.0%	
FTSE RAFI Developed ex-US 1000		-9.2%	-19.0%	4.8%	2.1%	11/28/2005
MSCI EAFE		-6.9%	-13.4%	6.5%	1.4%	
	Value Added	-2.3%	-5.6%	-1.6%	0.7%	
FTSE RAFI Emerging Markets		-10.8%	-17.2%	9.4%	0.8%	7/9/2007
MSCI Emerging Markets		-8.8%	-15.7%	10.1%	-0.9%	
	Value Added	-2.0%	-1.5%	-0.7%	1.7%	

Note: The index version of the RAFI methodology, or the FTSE RAFI Indexes, is licensed globally by our partner the FTSE Group. All returns are Total Returns in USD with the exception of the FTSE RAFI Developed Europe Mid Small and MSCI Small Cap Europe Index which are price returns.
This material relates only to a hypothetical model of past performance of the Fundamental Index® strategy itself, and not to any asset management products based on this index. No allowance has been made for trading costs or management fees which would reduce investment performance. Actual results may differ. Indexes are not managed investment products, and, as such cannot be invested in directly. Returns represent performance based on rules used in the creation of the index, are not a guarantee of future performance and are not indicative of any specific investment. Returns listed prior to the individual indexes launch dates are simulated.

***Source*: Research Affiliates, LLC., based on data from Bloomberg.**

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

<u>We Believe All Three Paths Can Be Pursued in Parallel!</u>

Our 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

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