A long-term outlook on the economy and markets

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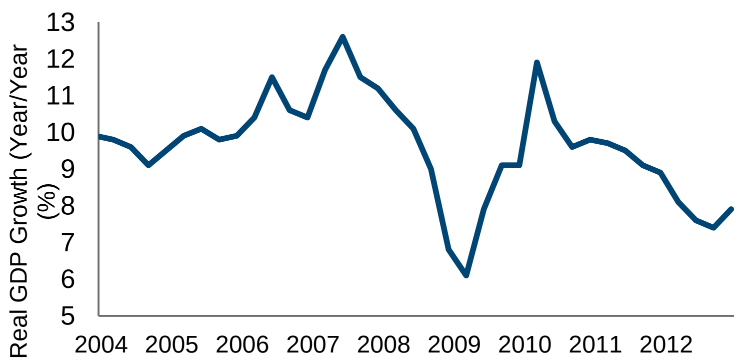
Vanguard

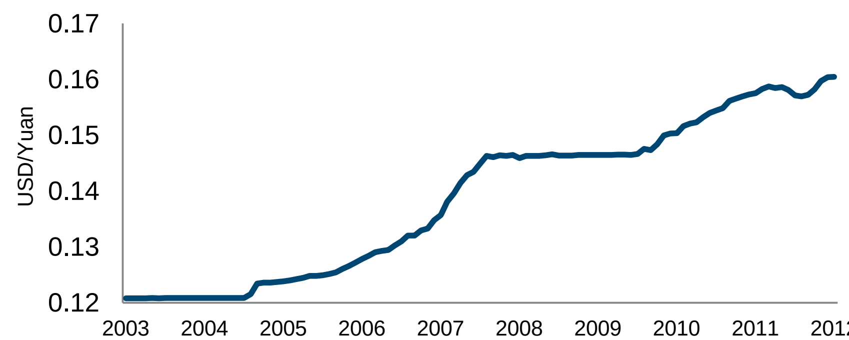
Has China landed?

Monetary policy attempting to engineer soft landing with growth ~ 7–8%

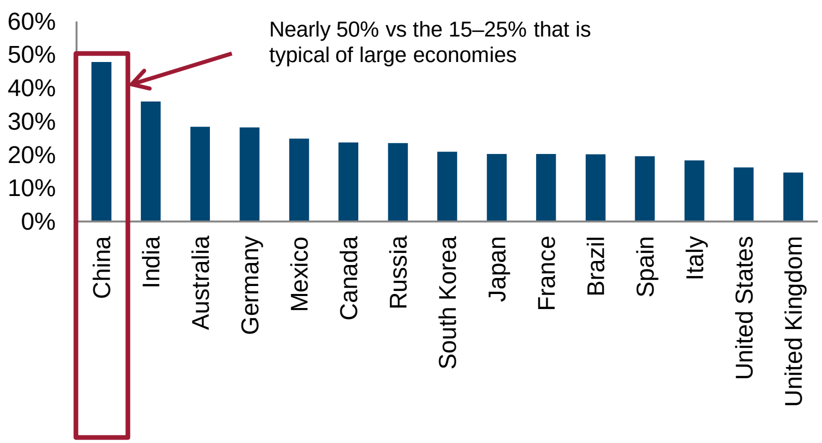
Economic growth appears to have bottomed...



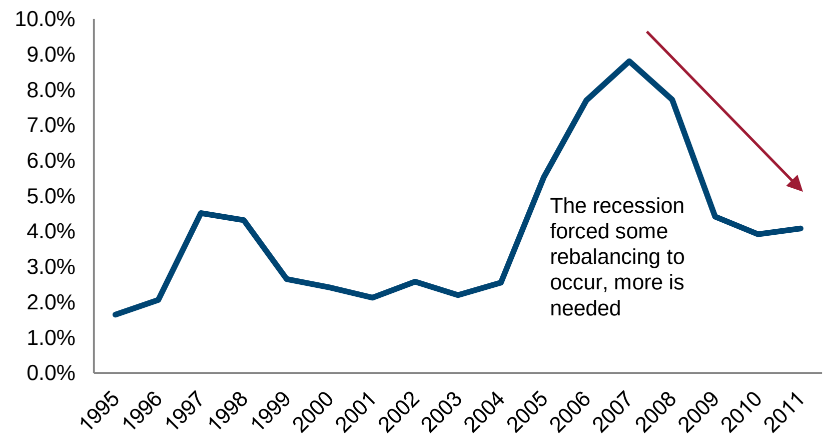
Yuan appreciating modestly



Investment Share of GDP, 2012



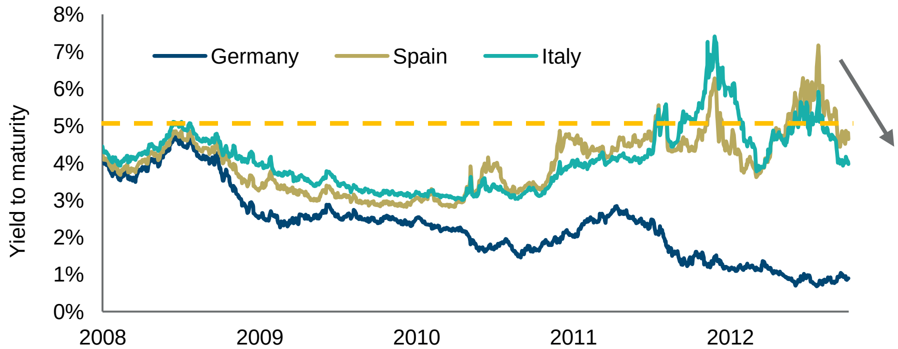
China net exports, % of GDP



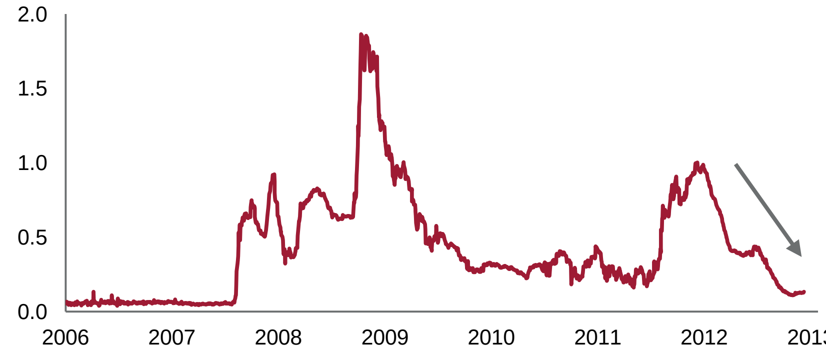
Source: Vanguard analysis, based on National Bureau of Statistics of China, US Federal Reserve, IMF, and World Bank.
Shows data available as at 31 January 2013.

European crisis:
Some improvement, but structural challenges remain

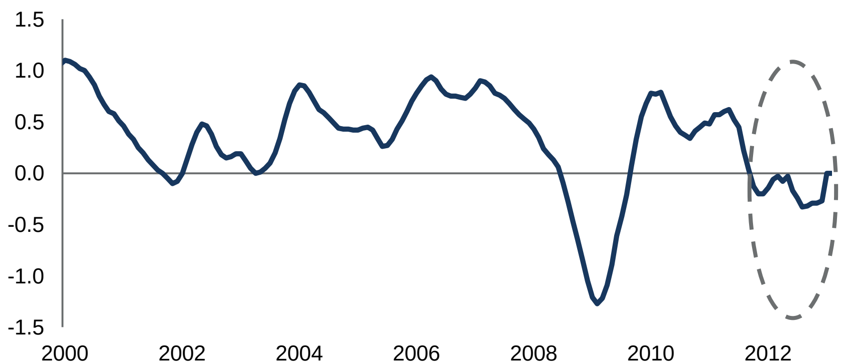
Some improvement in the sovereign debt crisis
Market weighted average yield for sovereign bonds



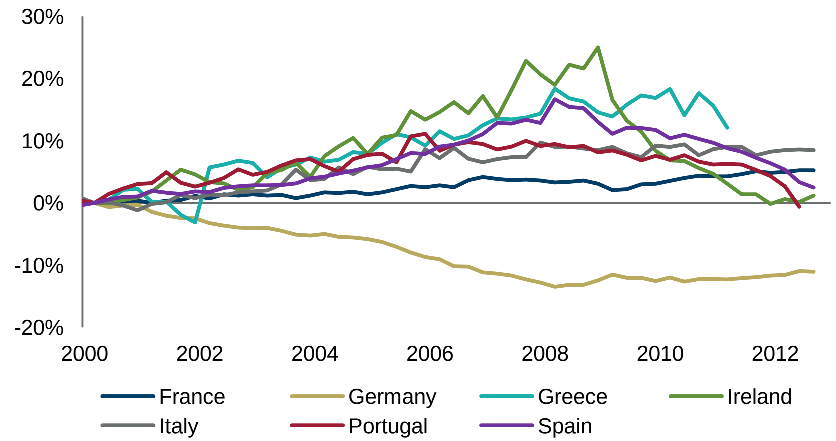
Bank stress easing significantly
3m Euribor-Eonia Spread



Economy is back in recession
CEPR EuroCoin Business Cycle Indicator



Additional internal adjustment is needed
Cumulative unit labor costs, relative to Eurozone average since 2000



Source: Vanguard Investment Strategy Group, based on data from the ECB, CEPR, and Thomson Reuters Datastream. Data as of 8 January 2013.

Europe: Possible scenarios?

1. Benign scenario (15%?)
   - Short-term: ESM-ECB bring yields down
   - Medium-term: Fiscal consolidation and reforms on track, growth recovers
   - Long-term: Fiscal/banking/political union/eurobonds

2. Muddle-through scenario (65%?)
   - Short-term: Temporary respite but sustainability questions persist
   - Medium-term: Stuttering progress on fiscal, structural reform; OSI on Greek debt, eventual growth recovery
   - Long-term: Slow adherence to fiscal compact, move to eurobonds

3. Malign scenario (20%?)
   - Short-term: Adverse events prompts Greece exit, deposit runs elsewhere
   - Medium-term: Countries leaving EMU suffer deep recession, banking sector credit crunch in Europe, global recession
   - Long-term: Euro only survives in stronger union of northern Europe

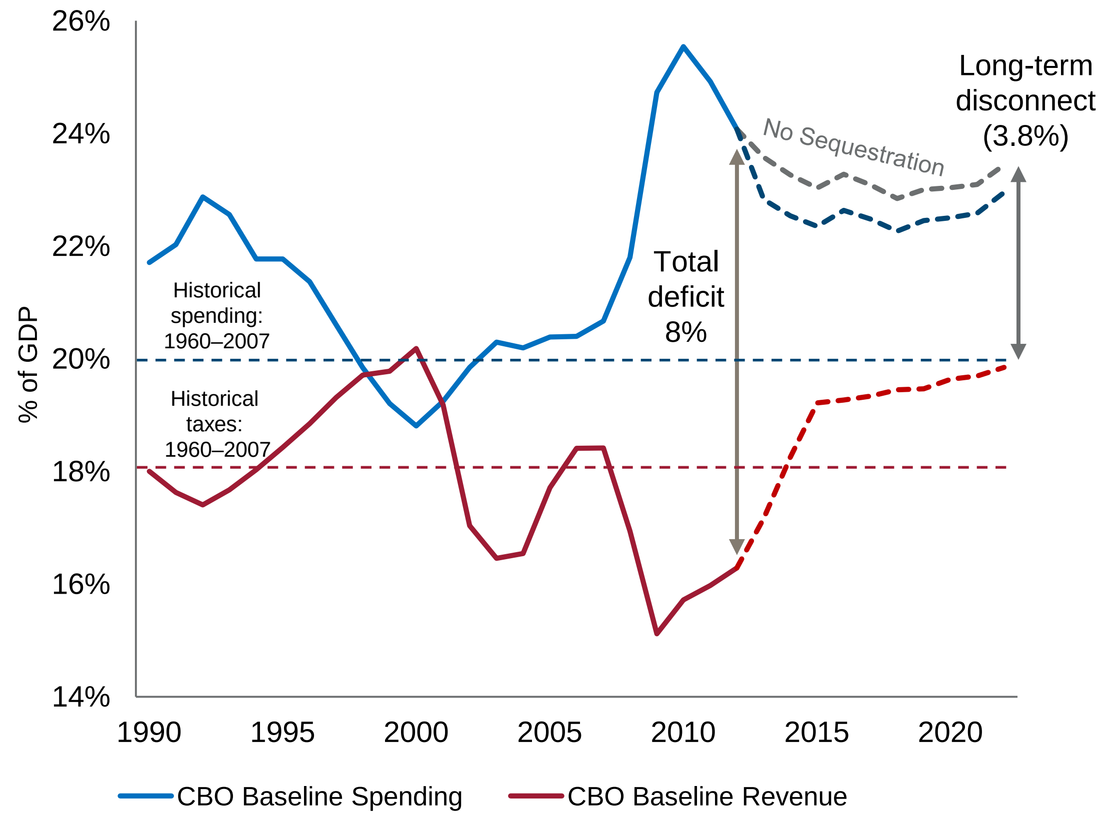
U.S. debt and fiscal deficits: What is the way out?

Optimal deficit reduction scenario:

- **Grand bargain:**
  Reign in entitlement spending and tax reform. Get back to historical mix (20/20 by 2020).
  - Mix should be close to 2/3 spending cuts and 1/3 tax reform
  - Some help from modest growth and Fed zero rate policy (financial repression)

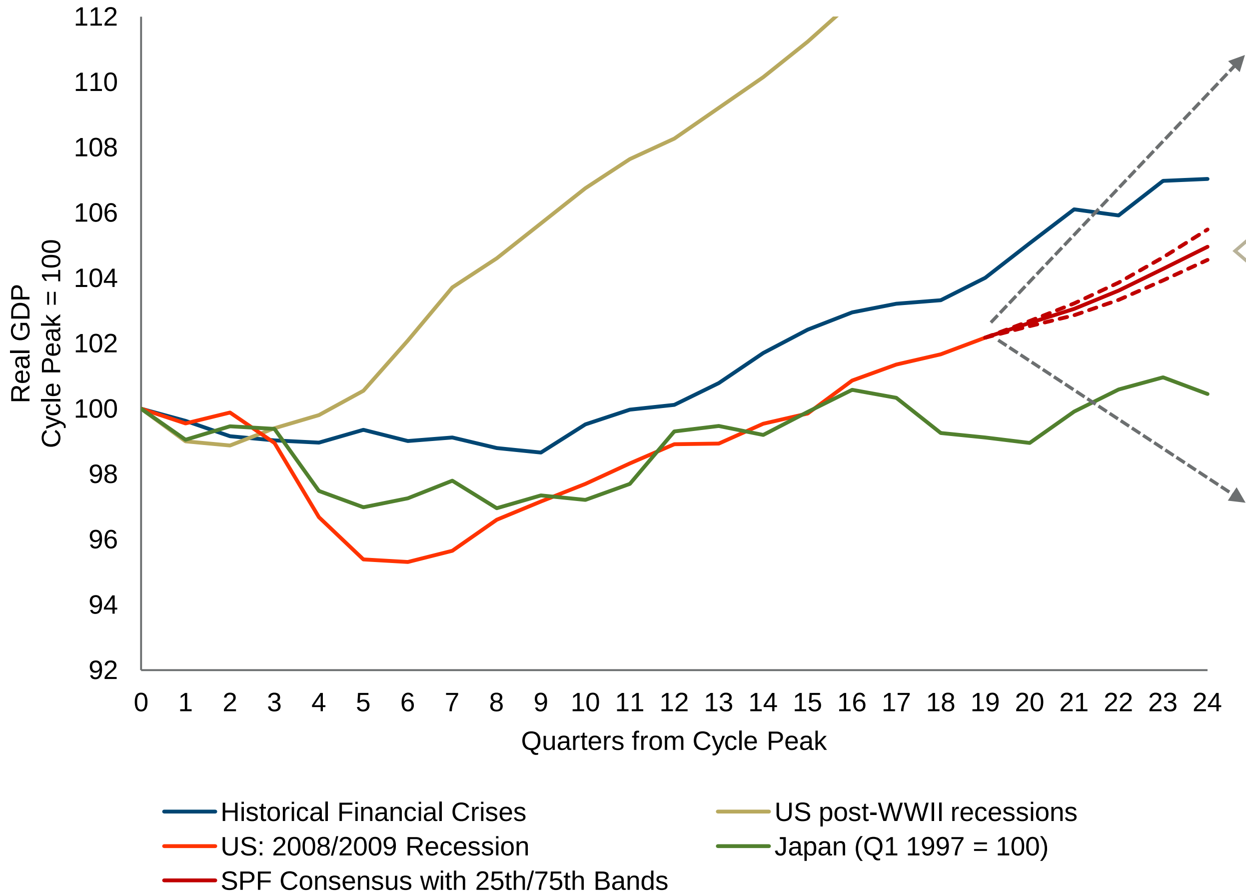
- **Current fiscal compromise does not sufficiently address long-term deficit issues in scope or structure**

- **"Kick the can" is not a viable solution**



Sources: Vanguard Investment Strategy Group based on Congressional Budget Office *The Budget and Economic Outlook: Fiscal Years 2012 to 2022. The CBO Spending is Baseline/Current Law Scenario spending with and without sequestration. The CBO Revenue is revenue projected under the Baseline/Current Law Scenario revenue. Current 8% deficit was that realized as at 30 September 2012.* US$1.2 trillion in spending cuts attributed to automatic sequestration allocated evenly across 10 years 2013–2022.

U.S. economic recovery:
As expected thus far



Upside surprise scenario (30%)
3–4%+ real GDP growth

Baseline scenario (50%)
Secular headwinds, but growth
1.5–2.5% real GDP growth

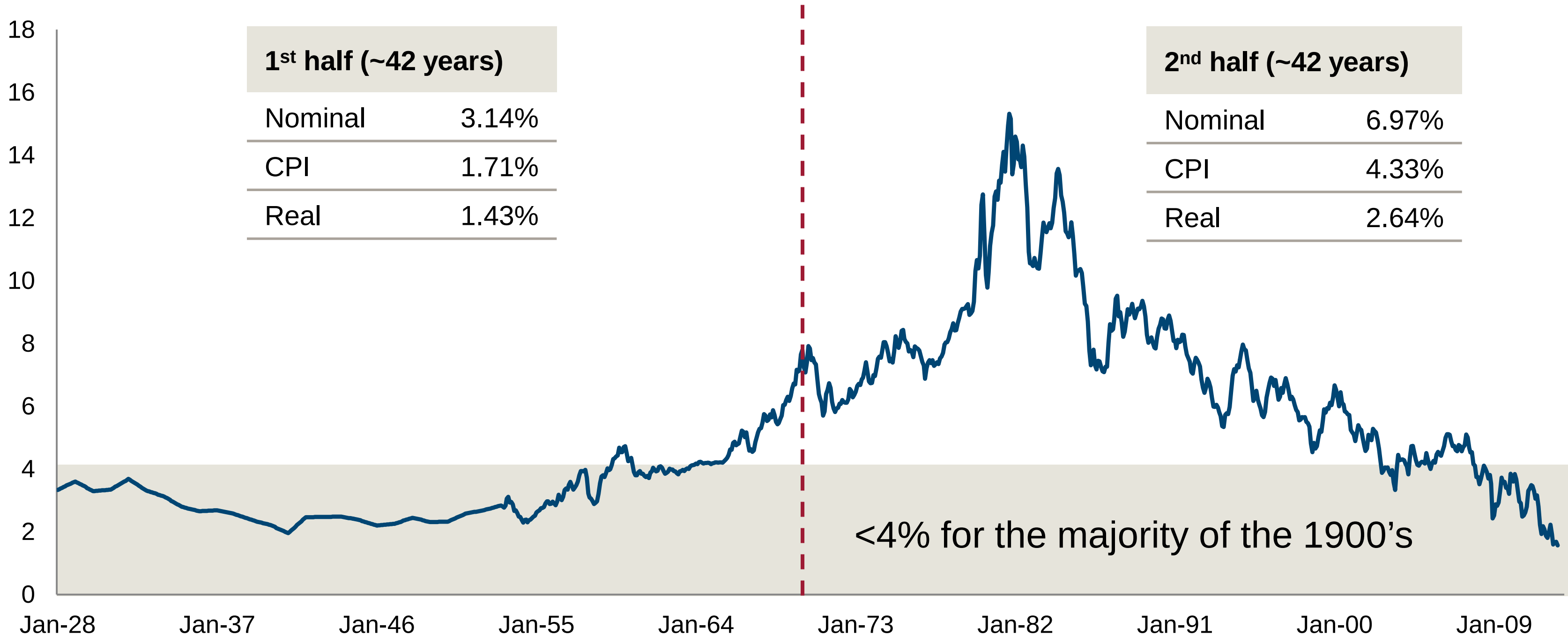
Downside-risk scenario (20%)
<1% growth or recession

Downside risks
- Euro break-up
- China hard-landing
- U.S. fiscal challenges

Sources: IMF, OECD, BEA, Philadelphia Federal Reserve, and Vanguard. As at 31/12/2012.
For details see *Vanguard's economic and capital markets outlook*, 2012.

Inflation and interest rates

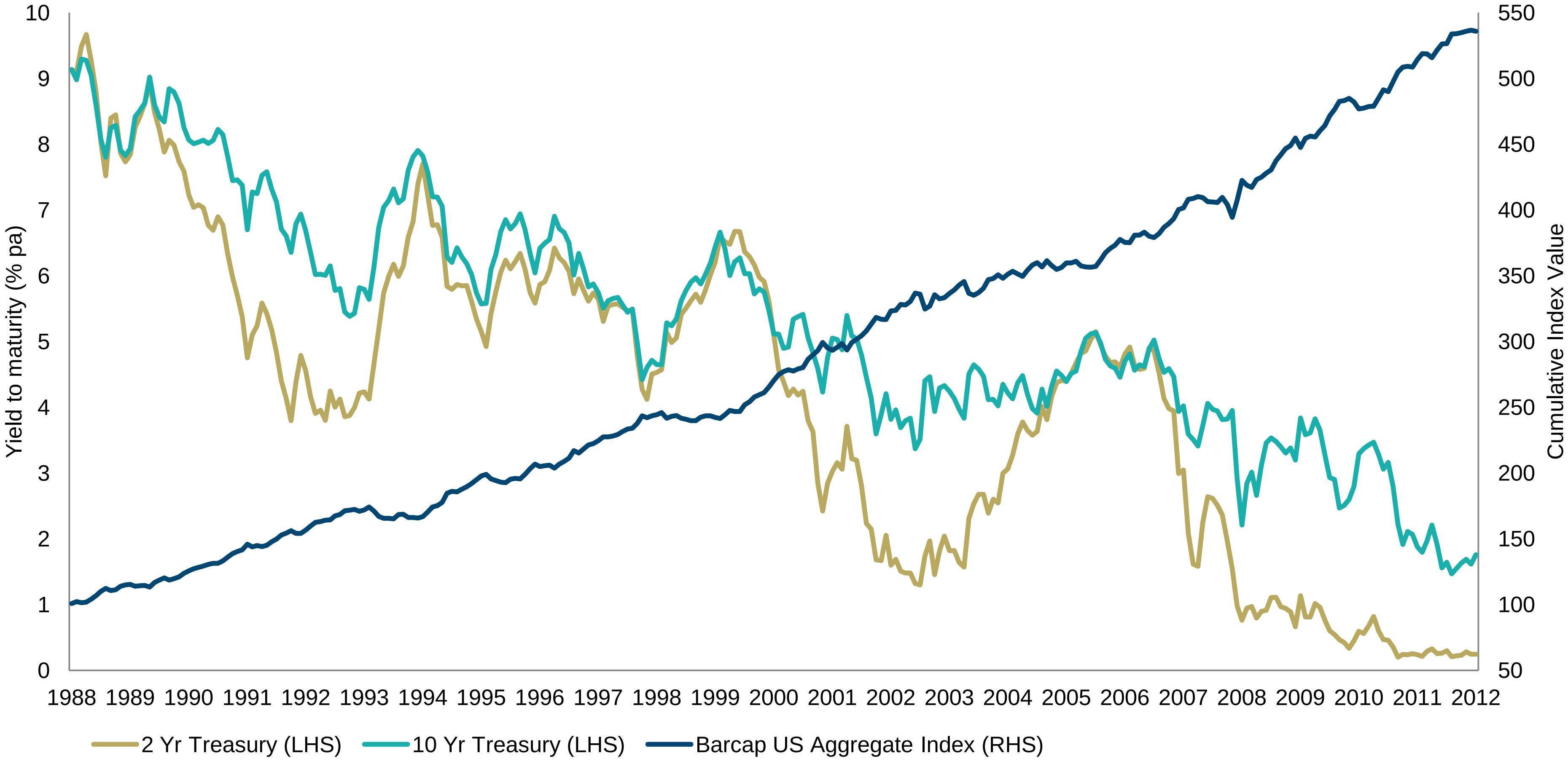
Historical yields on U.S. 10-year Treasury bond



Sources: Federal Reserve Board, U.S. Bureau of Labor Statistics and Robert Shiller. As at 31 December 2012.
Past performance is not a guarantee of future results.

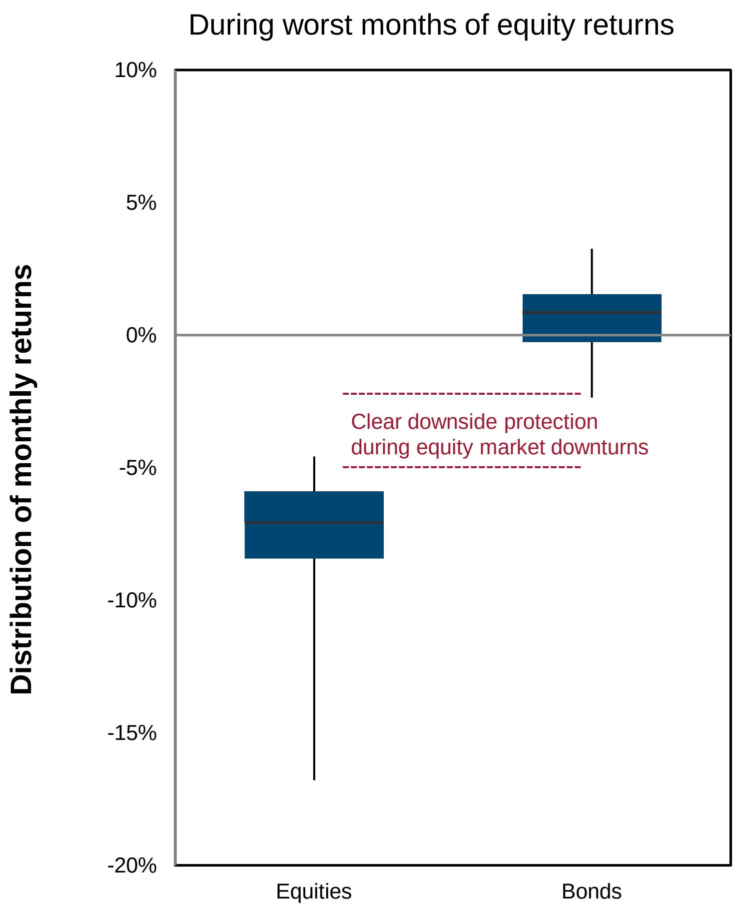
The myth of the bond market bubble

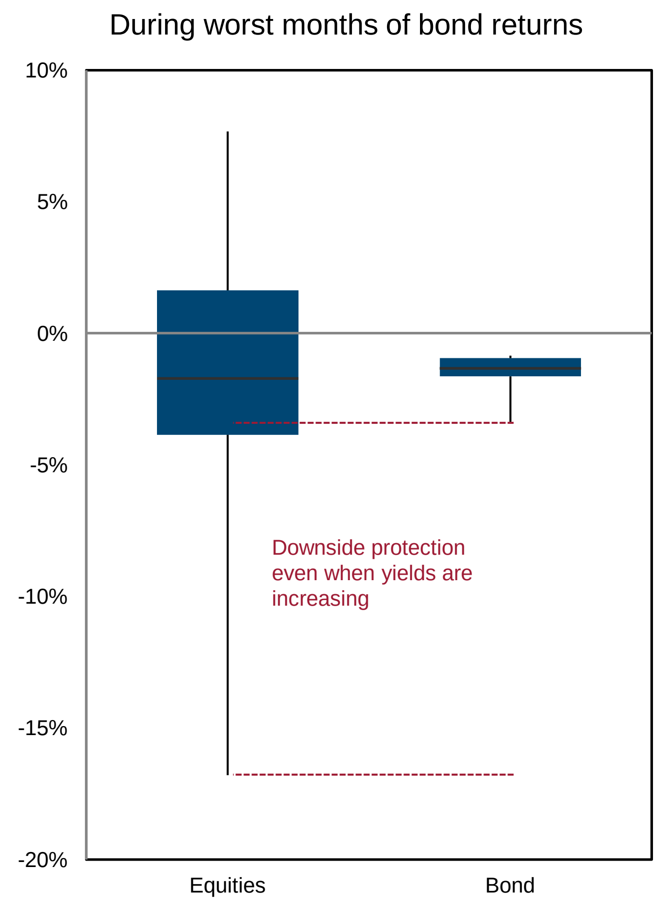
Bonds are income-producing assets



Why fixed income makes sense in any macro environment

Fixed income provides downside protection to equities, no matter which direction yields move

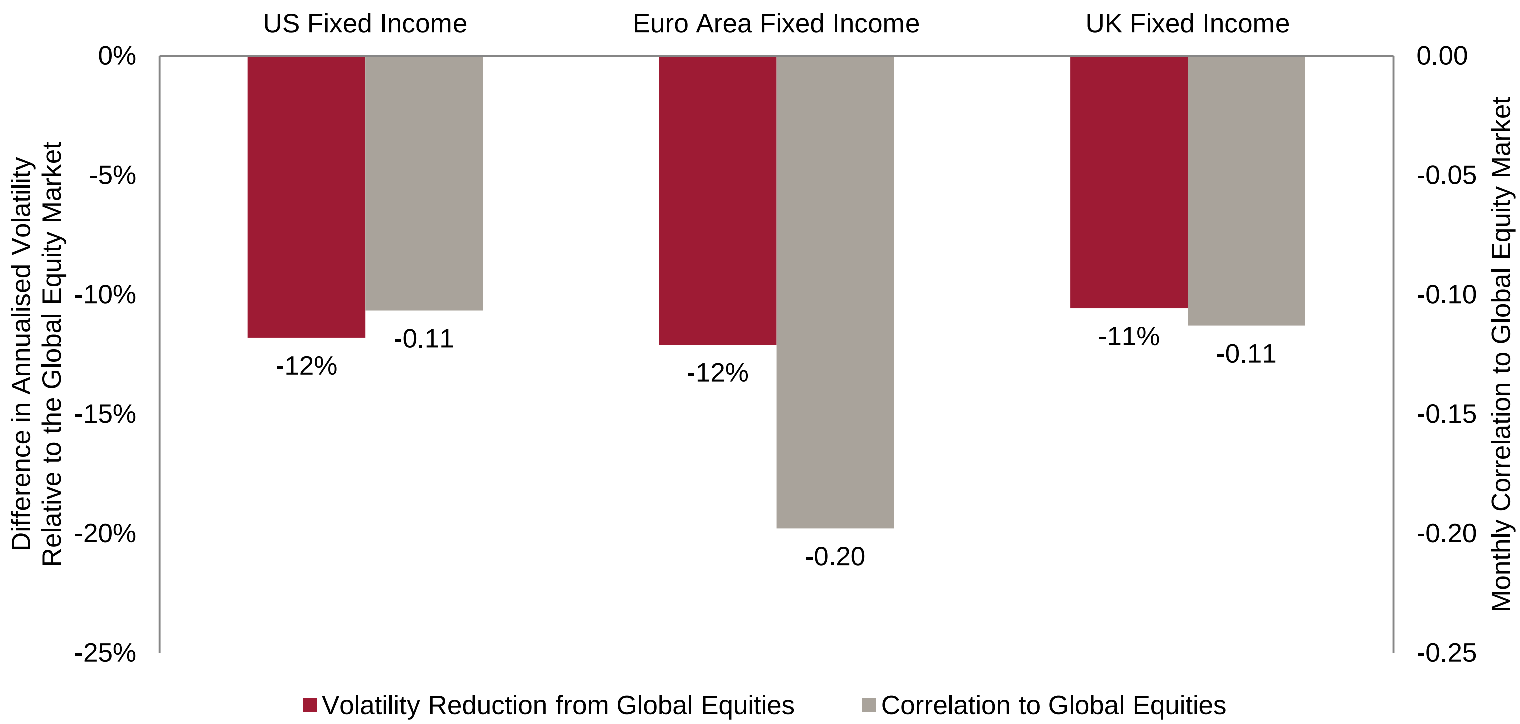




Notes: Displays the 5th/25th/median/75th/95th percentile of the distribution of monthly returns for US equities and US bonds, during a 10 percentile or worse monthly return for either the equity or bond market. US equity returns are represented by the S&P500 and US Bond returns are represented by the Barclays US Aggregate Index. Sources: Vanguard, based on data from S&P and Barclays. Data as of 31 December 2012.
Past performance is not a guarantee of future results.

Why fixed income makes sense in any macro environment

Diversification benefits act as a hedge against macro uncertainty, despite low yields

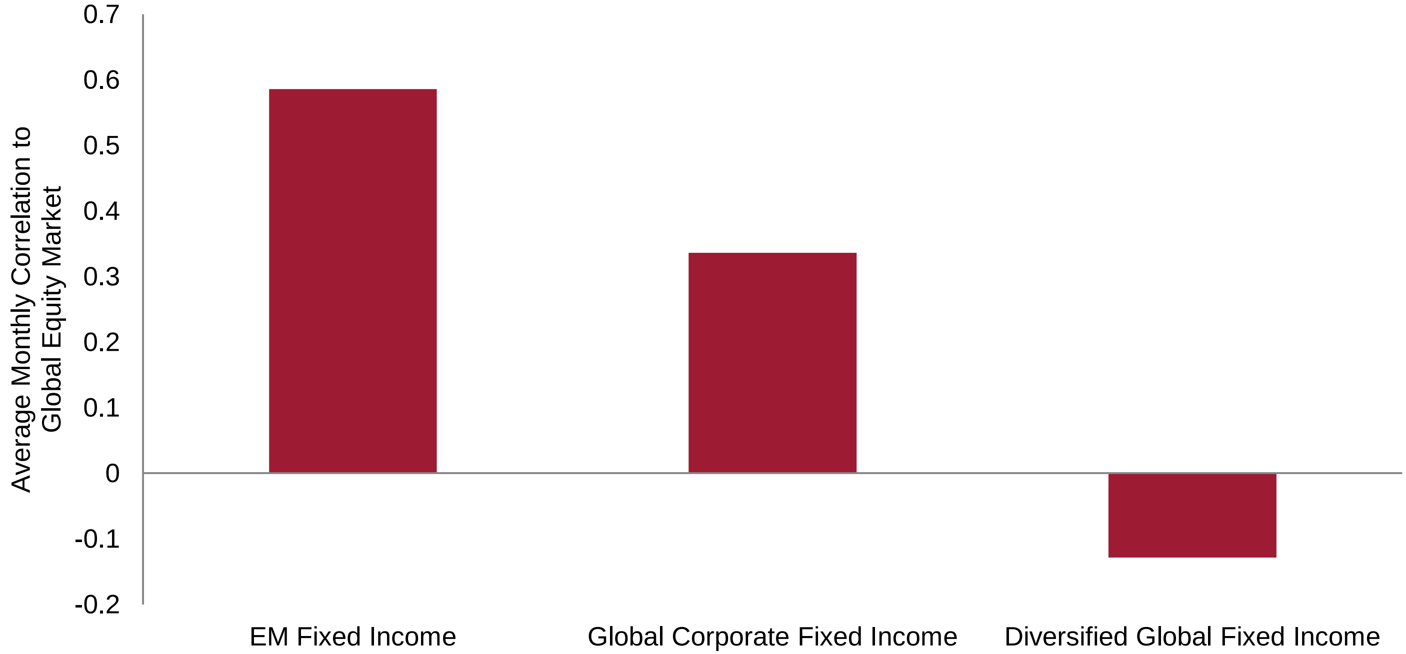


Notes: Displays the difference in annualised monthly volatility for each fixed income market relative to the global equity market, and the correlation of monthly returns relative to the global equity market over the period Jan. 2000–Sept. 2012. Global equity market defined as the FTSE All World, US fixed income defined as the Barclays US Aggregate, Euro Area fixed income defined as the Barclays Euro Aggregate, UK fixed income defined as the Barclays Sterling Aggregate. All returns are measured in local currency terms, assuming income is reinvested.
Sources: Vanguard, based on data from FTSE and Barclays.

EM/Credit Tilt to increase yield?

Be wary – EM bonds are not a substitute for diversified fixed income exposure

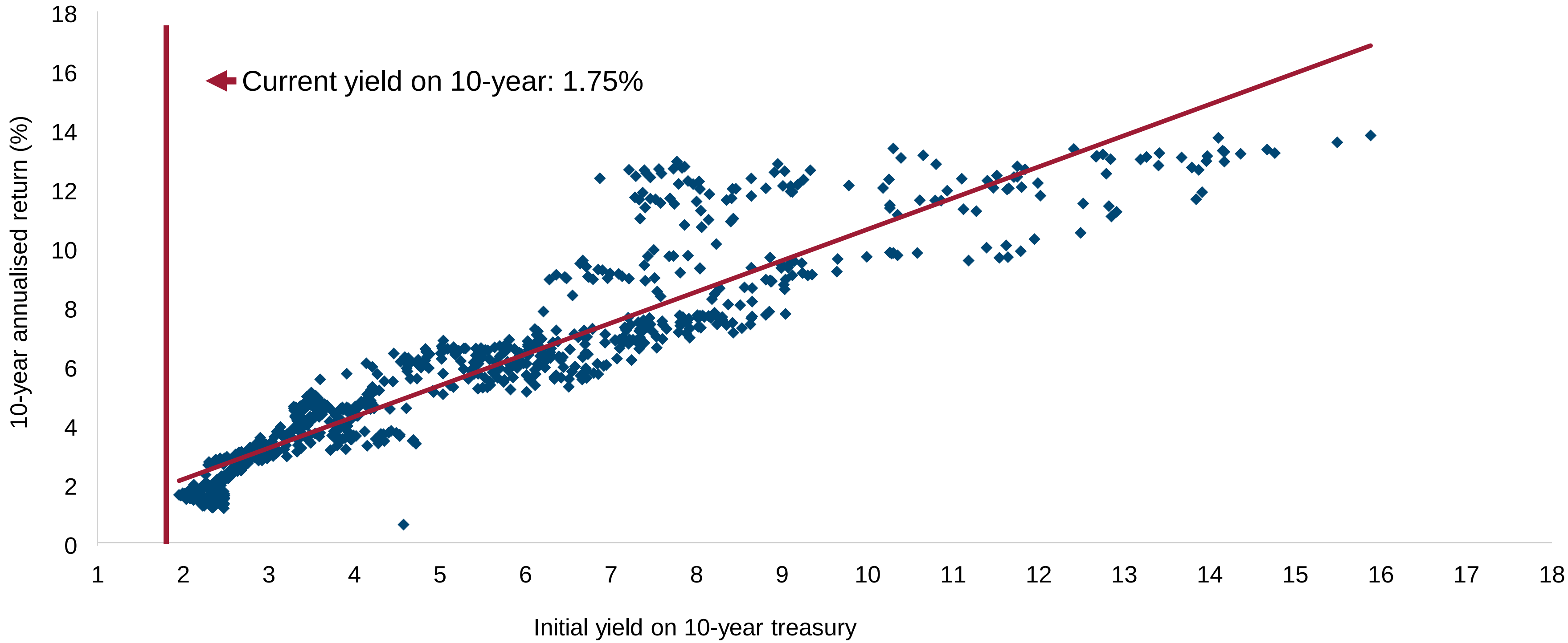
Correlation to global equities, 2001–2012



Notes: Displays the average correlation of monthly returns for each fixed income sector to the global equity market. Global equity market is defined as FTSE All World index, EM Fixed Income is defined as the JP Morgan Emerging Markets Bond Index, Global corporate fixed income is defined as the Barclays Global Aggregate Corporate index, and Diversified global fixed income is defined as the Barclays Global Aggregate index. All returns are in US dollars, and the Global allocations are in hedged terms (the EM index covers only USD issues, so hedging is not applicable).
Sources: Vanguard, based on data from Barclays, JP Morgan, and FTSE. Data as of 31 December 2012.

Market outlook

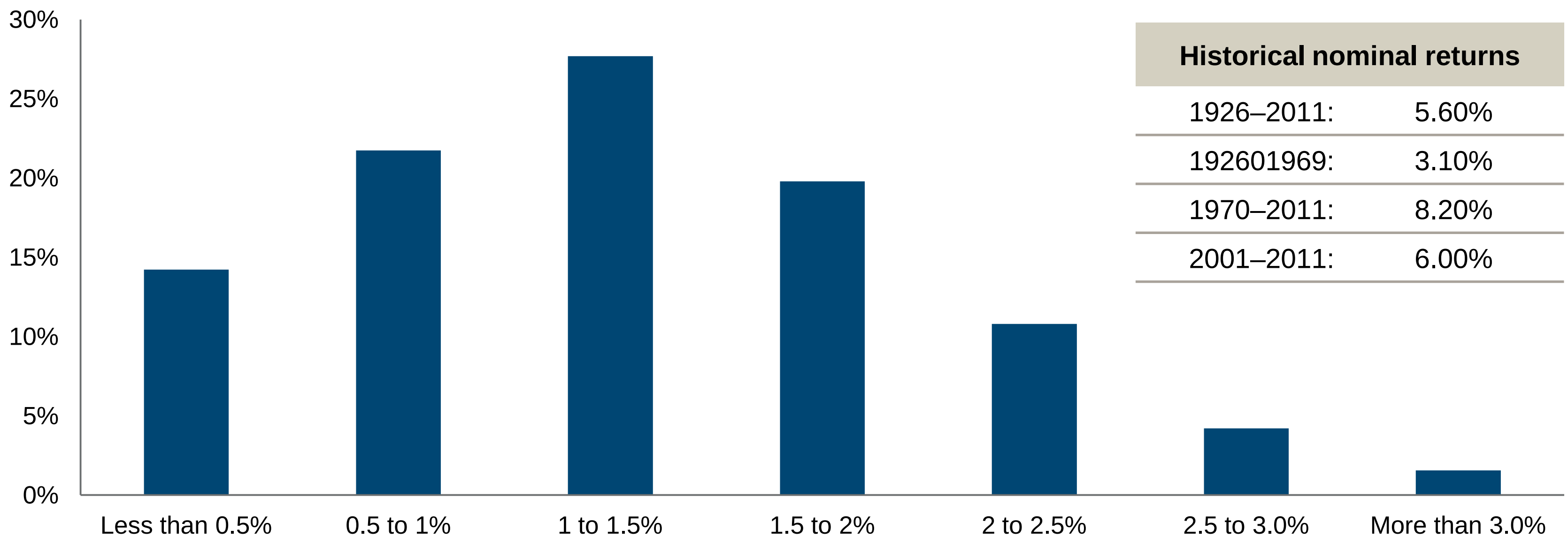
Bond return maths suggests low current yields correlate with low expected returns



Sources: Historical yield data for the 10-year CMT provided by Shiller from 1926 through March 1953 and the Federal Reserve Board thereafter. Total returns for US bonds represented by Ibbotson Associates Intermediate Term Treasury Bond Index from 1926 through 1975 and 10-year CMT US Treasury from Barclay's Capital thereafter. Yields shown through 31 December 2002; Returns through 31 December 2012.
Past performance is not a guarantee of future returns.

Vanguard's capital markets outlook: U.S. bonds

Average return on Total U.S. Bond Market over next 10 years
VCMM estimated probability distribution

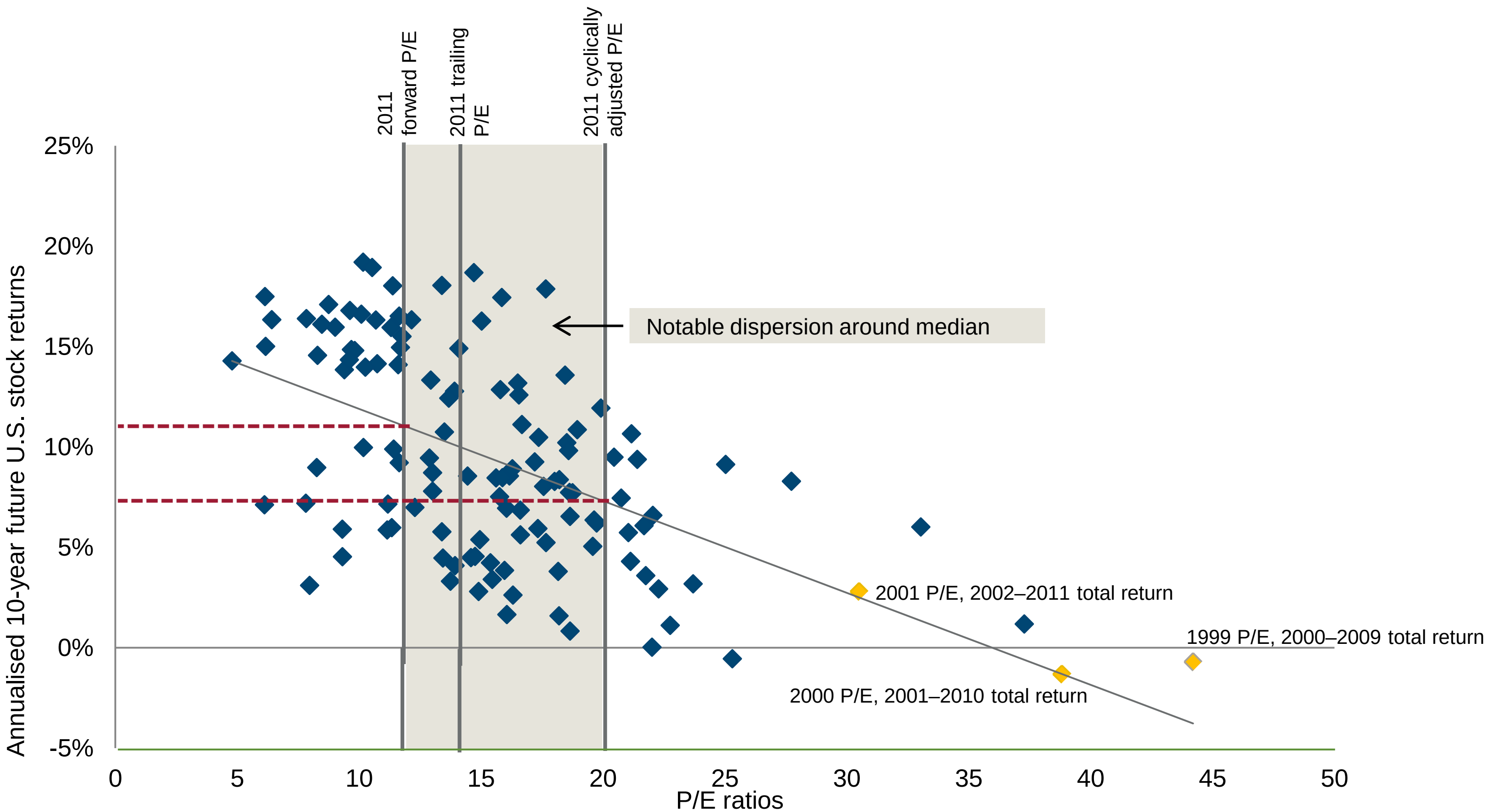


Historical nominal returns	
1926–2011:	5.60%
192601969:	3.10%
1970–2011:	8.20%
2001–2011:	6.00%

IMPORTANT: The projections or other information generated by the VCMM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from Vanguard Capital Markets Model® (VCMM), derived from 10,000 simulations for U.S. equity returns and fixed income returns. Simulations as at 30 September 2012. Results from the model may vary with each use and over time. For more information, please see the disclosures slide.

A positive (albeit still uncertain) long-run outlook for the U.S. stock market

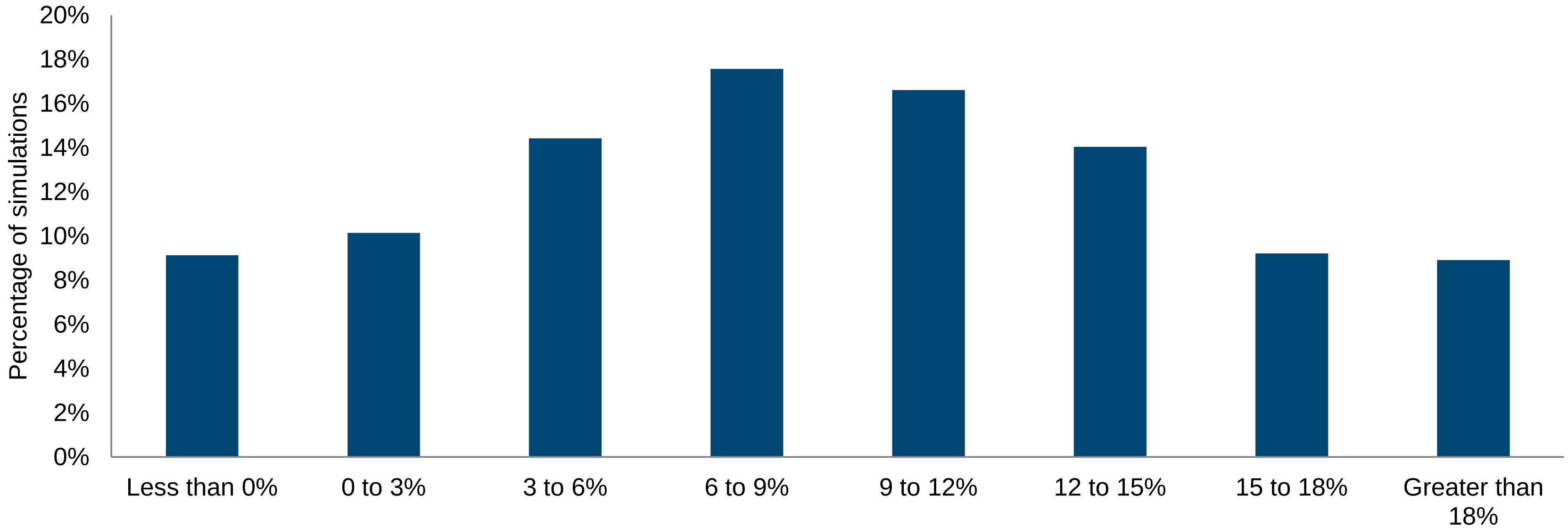
Various P/E ratios and subsequent annualized ten-year returns, 1871–2011



Sources: Vanguard, Robert J. Shiller (http://www.econ.yale.edu/~shiller/), Standard & Poor's, and Thomson Financial Datastream. For details, see Vanguard's *What Does the Crisis of 2008 Imply for 2009 and Beyond? (Davis, Aliaga-Díaz, and Ren, 2009a).*
Past performance is not a guarantee of future returns.

Treating the future as a range of possibilities

Average return on Global Stock Market over next 10 years
VCMM estimated probability distribution



Attractive odds of capturing a positive equity risk premium over the long run

Note: Displays the projection of a portfolio of 50% US equity, 50% ex-US equity. Returns in dollar terms, assuming income is reinvested.
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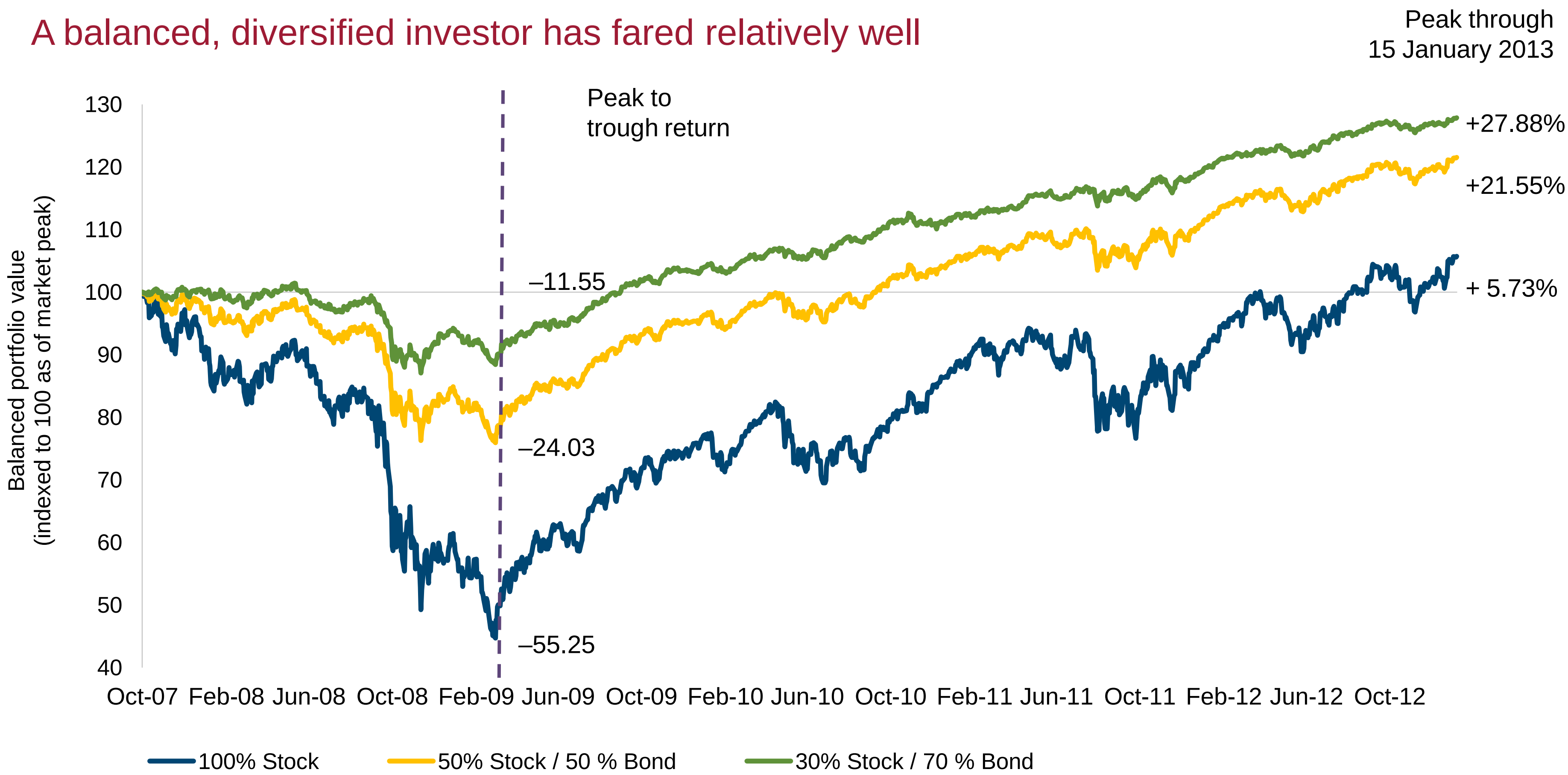
The benefits of long term perspective, balance and diversification

A balanced, diversified investor has fared relatively well



Sources: S&P 500 Index and Barclays Capital US Aggregate Bond Index (rebalanced monthly).
Data provided by Barclays Capital and Thomson Reuters Datastream, as at 15 January 2013.
Past performance is not a guarantee of future returns.

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