BNY MELLON

# 10-YEAR CAPITAL MARKET RETURN ASSUMPTIONS

## CALENDAR YEAR 2013

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*CALENDAR YEAR 2013*

*“Markets continue to absorb the effects of developed world deleveraging and monetary policies that are distorting asset prices and risk premia. Changing demographics and labor markets will likewise have important effects on investor preferences and capital flows over the next 10 years. Low interest rates will continue to challenge investors, but select risk assets are likely to outperform.”*

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# 10-YEAR CAPITAL MARKET RETURN ASSUMPTIONS

*EXPECTED RETURN AND STANDARD DEVIATION*

| | Asset Class | Representative Index | Expected Return | Standard Deviation |
|---|---|---|---|---|
| Equity | U.S. Equity | Russell 3000 | 7.25% | 18.25% |
| | U.S. Large Cap Equity | Russell 1000 | 7.00% | 18.00% |
| | U.S. Mid Cap Equity | Russell Mid Cap | 7.75% | 21.25% |
| | U.S. Small Cap Equity | Russell 2000 | 8.00% | 23.75% |
| | U.S. Micro Cap Equity | Dow Jones Wilshire U.S. Micro-Cap | 8.25% | 25.50% |
| | Global Equity | MSCI ACWI | 7.25% | 19.00% |
| | International Developed Equity | MSCI EAFE | 7.00% | 20.25% |
| | International Small Cap Equity | MSCI EAFE Small Cap | 7.00% | 22.50% |
| | Emerging Equity | MSCI Emerging | 8.25% | 28.50% |
| Fixed Income | U.S. Aggregate | Barclays U.S. Aggregate | 1.25% | 3.75% |
| | U.S. Treasury | Barclays U.S. Treasury | 0.50% | 5.00% |
| | U.S. Treasury Bills | Barclays U.S. Bellwethers 3 Month | 1.50% | 0.50% |
| | U.S. Intermediate Treasury | Barclays U.S. Intermediate Treasury | 0.75% | 3.50% |
| | U.S. Long Treasury | Barclays U.S. Long Treasury | -0.25% | 12.75% |
| | U.S. Investment Grade Credit | Barclays U.S. Credit | 1.75% | 6.25% |
| | U.S. Intermediate Investment Grade Credit | Barclays U.S. Intermediate Credit | 1.75% | 5.00% |
| | U.S. Long Investment Grade Credit | Barclays U.S. Long Credit | 2.00% | 11.25% |
| | U.S. TIPS | Barclays U.S. TIPS | 0.25% | 7.25% |
| | U.S. Agencies | Barclays U.S. Agencies | 1.25% | 3.50% |
| | U.S. MBS | Barclays U.S. MBS | 2.00% | 2.75% |
| | U.S. Investment Grade CMBS | Barclays Investment Grade CMBS | 2.25% | 12.25% |
| | U.S. Non-Taxable Municipal (1-10 year) | Barclays U.S. Non-Taxable Municipal (1-10 year) | 1.50% | 3.50% |
| | U.S. High Yield | Barclays U.S. Corporate High Yield | 5.25% | 12.50% |
| | U.S. Leveraged Loans | CSFB Leveraged Loan | 3.00% | 8.25% |
| | Global Aggregate | Barclays Global Aggregate | 1.25% | 6.50% |
| | Global Treasury | Barclays Global Treasury | 1.00% | 7.75% |
| | Global Corporate | Barclays Global Corporate | 2.25% | 8.50% |
| | Emerging Markets (U.S. Dollar) | Barclays Emerging Markets (U.S. Dollar) | 3.50% | 13.25% |
| | Emerging Markets Sovereign Local Currency | Barclays EM Local Currency Government | 6.00% | 13.25% |
| Alternatives | Absolute Return | HFRX Absolute Return | 2.50% | 3.50% |
| | Hedge Funds | HFRI Funded Weighted Composite | 3.75% | 7.50% |
| | Hedge Funds - Equity Hedge | HFRI Equity Hedge | 4.75% | 10.25% |
| | Hedge Funds - Event Driven | HFRI Event Driven | 3.75% | 7.75% |
| | Hedge Funds - Macro | HFRI Macro | 3.50% | 6.25% |
| | Hedge Funds - Relative Value | HFRI Relative Value | 3.25% | 5.75% |
| | Commodities | Dow Jones UBS Commodities | 2.50% | 19.50% |
| | Global Natural Resources Equity | Morningstar Global Upstream Natural Resources | 7.50% | 27.50% |
| | U.S. Direct Real Estate | NCREIF Property | 5.50% | 6.50% |
| | Timberland | NCREIF Total Return Timberland | 5.50% | 6.50% |
| | Farmland | NCREIF Total Return Farmland | 5.75% | 7.50% |
| | U.S. REIT | FTSE NAREIT Equity | 7.75% | 29.50% |
| | Global REIT | FTSE EPRA/NAREIT Developed | 7.75% | 24.75% |
| | Global Private Equity | LPX 50 Private Equity | 10.50% | 32.50% |
| | U.S. Private Equity | S&P Listed Private Equity | 11.75% | 33.75% |
| | Infrastructure | Alerian MLP Infrastructure | 6.00% | 19.75% |

**Inflation**

In the US, our headline inflation expectation over the next 10 years is 2.5% per year, slightly ahead of consensus forecasts. We expect higher energy prices due to supply/demand imbalances to put upward pressure on inflation, while aging demographics in developed markets will offset some of the upward momentum. We also expect inflation in emerging economies to be slightly higher than consensus forecasts at 4% per year.

**Equity**

Our primary building blocks for developing US equity returns are inflation, real earnings growth, and dividend yield. Our expectation for real earnings growth in the US is 2% per year, significantly below consensus forecasts of over 6%. This low growth expectation is based on our belief that real earnings growth cannot exceed real GDP growth over the long run. Given corporations' excess cash, we expect dividend yields for US equities to be 2.25% per year, slightly above long-term historical averages and current dividend yields. Our building blocks derive an expected return of 7% for US large cap stocks. We see similar risk-adjusted returns for US small and mid cap stocks. International developed equities are also expected to generate returns similar to those in the US, but with greater risk due to currency exposure. Emerging equities are expected to generate stronger risk - adjusted returns, due to continued relative strength in emerging economies and currency appreciation.

**Fixed Income**

We expect returns to be weaker than historical norms in most sectors due to rising interest rates. In the US, we see real cash rates rising from negative levels today to 1% in 10 years. With inflation at 2.5%, this results in US Treasury bills yielding 3.5% in 10 years. This will cause some flattening of the curve, but not enough to protect US long-dated Treasury bonds from negative returns over 10 years. Higher credits spreads and defaults compared to current levels will have an adverse impact on credit markets. However, higher yields in credit markets will help preserve positive returns over the next 10 years. Emerging market debt, especially issued in local currency, will fare better over the 10-year horizon due to relative strength in emerging economies and currency appreciation.

**Alternatives**

Absolute return and hedge funds are likely to generate risk-adjusted returns similar to those of equities. These asset classes may be more appropriate for reducing risk from equities, rather than the traditional view of shifting assets to fixed income. Overall, we expect commodities to experience returns similar to inflation of 2.5%. Energy will generate returns in excess of inflation due to supply/demand imbalances, while agriculture and metals are expected to return slightly less than inflation. Private real estate will see similar risk - adjusted returns as REITs, plus a liquidity premium. Private equity returns are likely to be on par with those of public equity, after adjusting for a meaningful increase in risk levels.

Note: The capital market assumptions are The Bank of New York Mellon's estimates based on historical performance and the current market environment. We do not present the capital market assumptions as actual or guaranteed future performance. This material is approved for institutional investors or other qualified, sophisticated individuals only. Not for retail use or distribution. Accordingly, this material is not to be reproduced in whole or in part or used for any other purpose. Refer to Disclosures.

# 10-YEAR CAPITAL MARKET RETURN ASSUMPTIONS

*CORRELATIONS*

| | | U.S. Equity | U.S. Large Cap Equity | U.S. Mid Cap Equity | U.S. Small Cap Equity | U.S. Micro Cap Equity | Global Equity | International Developed Equity | International Small Cap Equity | Emerging Equity | U.S. Aggregate | U.S. Treasury | U.S. Treasury Bills | U.S. Intermediate Treasury | U.S. Long Treasury | U.S. Investment Grade Credit | U.S. Intermediate Investment Grade Credit | U.S. Long Investment Grade Credit | U.S. TIPS | U.S. Agencies | U.S. MBS | U.S. Investment Grade CMBS | U.S. Non-Taxable Municipal (1-10 year) | U.S. High Yield |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equity | U.S. Equity | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| | U.S. Large Cap Equity | 1.00 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| | U.S. Mid Cap Equity | 0.97 | 0.96 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| | U.S. Small Cap Equity | 0.91 | 0.89 | 0.95 | 1.00 | | | | | | | | | | | | | | | | | | | |
| | U.S. Micro Cap Equity | 0.85 | 0.83 | 0.89 | 0.94 | 1.00 | | | | | | | | | | | | | | | | | | |
| | Global Equity | 0.95 | 0.95 | 0.93 | 0.85 | 0.81 | 1.00 | | | | | | | | | | | | | | | | | |
| | International Developed Equity | 0.86 | 0.86 | 0.85 | 0.78 | 0.75 | 0.97 | 1.00 | | | | | | | | | | | | | | | | |
| | International Small Cap Equity | 0.77 | 0.76 | 0.80 | 0.74 | 0.75 | 0.89 | 0.93 | 1.00 | | | | | | | | | | | | | | | |
| | Emerging Equity | 0.79 | 0.79 | 0.81 | 0.76 | 0.75 | 0.88 | 0.85 | 0.83 | 1.00 | | | | | | | | | | | | | | |
| Fixed Income | U.S. Aggregate | 0.03 | 0.04 | 0.03 | -0.04 | -0.05 | 0.06 | 0.08 | 0.09 | 0.04 | 1.00 | | | | | | | | | | | | | |
| | U.S. Treasury | -0.25 | -0.24 | -0.27 | -0.29 | -0.31 | -0.25 | -0.22 | -0.21 | -0.24 | 0.89 | 1.00 | | | | | | | | | | | | |
| | U.S. Treasury Bills | -0.06 | -0.06 | -0.10 | -0.09 | -0.13 | -0.07 | -0.07 | -0.15 | -0.12 | 0.07 | 0.14 | 1.00 | | | | | | | | | | | |
| | U.S. Intermediate Treasury | -0.27 | -0.26 | -0.29 | -0.32 | -0.34 | -0.26 | -0.23 | -0.23 | -0.25 | 0.85 | 0.97 | 0.21 | 1.00 | | | | | | | | | | |
| | U.S. Long Treasury | -0.26 | -0.25 | -0.26 | -0.29 | -0.31 | -0.26 | -0.24 | -0.22 | -0.25 | 0.82 | 0.93 | 0.03 | 0.83 | 1.00 | | | | | | | | | |
| | U.S. Investment Grade Credit | 0.29 | 0.29 | 0.31 | 0.21 | 0.23 | 0.34 | 0.36 | 0.38 | 0.32 | 0.87 | 0.60 | -0.07 | 0.54 | 0.57 | 1.00 | | | | | | | | |
| | U.S. Intermediate Investment Grade Credit | 0.29 | 0.30 | 0.31 | 0.21 | 0.24 | 0.35 | 0.37 | 0.40 | 0.33 | 0.85 | 0.56 | -0.04 | 0.54 | 0.47 | 0.98 | 1.00 | | | | | | | |
| | U.S. Long Investment Grade Credit | 0.26 | 0.27 | 0.28 | 0.21 | 0.21 | 0.31 | 0.33 | 0.35 | 0.30 | 0.84 | 0.60 | -0.11 | 0.49 | 0.65 | 0.96 | 0.88 | 1.00 | | | | | | |
| | U.S. TIPS | 0.12 | 0.12 | 0.15 | 0.06 | 0.08 | 0.16 | 0.16 | 0.22 | 0.19 | 0.74 | 0.62 | -0.02 | 0.59 | 0.56 | 0.70 | 0.71 | 0.65 | 1.00 | | | | | |
| | U.S. Agencies | -0.10 | -0.09 | -0.11 | -0.15 | -0.17 | -0.08 | -0.06 | -0.06 | -0.10 | 0.95 | 0.93 | 0.18 | 0.92 | 0.81 | 0.73 | 0.71 | 0.69 | 0.65 | 1.00 | | | | |
| | U.S. MBS | -0.06 | -0.05 | -0.08 | -0.15 | -0.17 | -0.05 | -0.05 | -0.05 | -0.06 | 0.89 | 0.82 | 0.16 | 0.83 | 0.71 | 0.66 | 0.65 | 0.61 | 0.60 | 0.89 | 1.00 | | | |
| | U.S. Investment Grade CMBS | 0.43 | 0.43 | 0.47 | 0.42 | 0.40 | 0.44 | 0.44 | 0.43 | 0.38 | 0.40 | 0.12 | -0.10 | 0.07 | 0.12 | 0.51 | 0.49 | 0.51 | 0.45 | 0.28 | 0.14 | 1.00 | | |
| | U.S. Non-Taxable Municipal (1-10 year) | -0.01 | -0.01 | 0.01 | -0.05 | -0.04 | -0.02 | -0.01 | 0.00 | -0.04 | 0.71 | 0.59 | 0.04 | 0.57 | 0.52 | 0.65 | 0.66 | 0.57 | 0.53 | 0.66 | 0.63 | 0.28 | 1.00 | |
| | U.S. High Yield | 0.69 | 0.69 | 0.74 | 0.67 | 0.69 | 0.72 | 0.69 | 0.70 | 0.68 | 0.21 | -0.20 | -0.17 | -0.24 | -0.19 | 0.55 | 0.56 | 0.50 | 0.34 | 0.01 | 0.04 | 0.67 | 0.21 | 1.00 |
| | U.S. Leveraged Loans | 0.53 | 0.53 | 0.60 | 0.51 | 0.57 | 0.56 | 0.53 | 0.56 | 0.52 | -0.03 | -0.39 | -0.15 | -0.43 | -0.35 | 0.30 | 0.33 | 0.24 | 0.19 | -0.23 | -0.16 | 0.50 | 0.06 | 0.81 |
| | Global Aggregate | 0.24 | 0.25 | 0.23 | 0.17 | 0.16 | 0.35 | 0.42 | 0.41 | 0.30 | 0.71 | 0.58 | 0.02 | 0.60 | 0.46 | 0.69 | 0.70 | 0.64 | 0.66 | 0.68 | 0.57 | 0.42 | 0.47 | 0.31 |
| | Global Treasury | 0.13 | 0.14 | 0.12 | 0.08 | 0.07 | 0.24 | 0.32 | 0.31 | 0.19 | 0.65 | 0.60 | 0.04 | 0.62 | 0.48 | 0.58 | 0.58 | 0.54 | 0.59 | 0.65 | 0.52 | 0.33 | 0.43 | 0.17 |
| | Global Corporate | 0.44 | 0.44 | 0.45 | 0.36 | 0.37 | 0.56 | 0.62 | 0.62 | 0.50 | 0.65 | 0.37 | -0.06 | 0.35 | 0.29 | 0.82 | 0.84 | 0.76 | 0.64 | 0.53 | 0.44 | 0.54 | 0.44 | 0.59 |
| | Emerging Markets (U.S. Dollar) | 0.59 | 0.59 | 0.60 | 0.53 | 0.52 | 0.63 | 0.60 | 0.58 | 0.69 | 0.41 | 0.13 | -0.08 | 0.09 | 0.13 | 0.60 | 0.59 | 0.57 | 0.47 | 0.27 | 0.33 | 0.41 | 0.29 | 0.66 |
| | Emerging Markets Sovereign Local Currency | 0.69 | 0.68 | 0.68 | 0.65 | 0.61 | 0.73 | 0.71 | 0.66 | 0.76 | 0.32 | 0.06 | -0.04 | 0.06 | 0.01 | 0.50 | 0.50 | 0.47 | 0.39 | 0.22 | 0.18 | 0.53 | 0.18 | 0.64 |
| Alternatives | Absolute Return | 0.55 | 0.55 | 0.59 | 0.54 | 0.57 | 0.56 | 0.53 | 0.52 | 0.57 | 0.00 | -0.18 | 0.16 | -0.19 | -0.19 | 0.20 | 0.23 | 0.13 | 0.20 | -0.11 | -0.05 | 0.14 | 0.04 | 0.44 |
| | Hedge Funds | 0.80 | 0.80 | 0.84 | 0.80 | 0.84 | 0.85 | 0.82 | 0.81 | 0.87 | 0.02 | -0.26 | -0.02 | -0.28 | -0.28 | 0.33 | 0.35 | 0.27 | 0.17 | -0.11 | -0.08 | 0.34 | 0.00 | 0.68 |
| | Hedge Funds - Equity Hedge | 0.83 | 0.82 | 0.87 | 0.84 | 0.86 | 0.86 | 0.83 | 0.81 | 0.84 | 0.00 | -0.29 | -0.01 | -0.30 | -0.32 | 0.30 | 0.32 | 0.24 | 0.14 | -0.13 | -0.11 | 0.36 | -0.03 | 0.67 |
| | Hedge Funds - Event Driven | 0.79 | 0.78 | 0.83 | 0.80 | 0.84 | 0.82 | 0.78 | 0.80 | 0.79 | 0.01 | -0.30 | -0.03 | -0.32 | -0.32 | 0.32 | 0.35 | 0.26 | 0.17 | -0.15 | -0.10 | 0.36 | 0.01 | 0.74 |
| | Hedge Funds - Macro | 0.26 | 0.26 | 0.27 | 0.27 | 0.32 | 0.33 | 0.35 | 0.36 | 0.43 | 0.18 | 0.13 | 0.07 | 0.12 | 0.08 | 0.25 | 0.25 | 0.21 | 0.19 | 0.18 | 0.11 | 0.06 | 0.14 | 0.16 |
| | Hedge Funds - Relative Value | 0.65 | 0.65 | 0.69 | 0.61 | 0.66 | 0.71 | 0.69 | 0.73 | 0.70 | 0.11 | -0.25 | -0.05 | -0.28 | -0.25 | 0.44 | 0.48 | 0.36 | 0.30 | -0.08 | -0.03 | 0.48 | 0.10 | 0.79 |
| | Commodities | 0.44 | 0.44 | 0.48 | 0.40 | 0.40 | 0.54 | 0.55 | 0.57 | 0.56 | 0.06 | -0.12 | -0.01 | -0.11 | -0.17 | 0.25 | 0.29 | 0.19 | 0.32 | -0.01 | -0.04 | 0.24 | -0.09 | 0.42 |
| | Global Natural Resources Equity | 0.78 | 0.79 | 0.79 | 0.69 | 0.65 | 0.86 | 0.83 | 0.78 | 0.84 | 0.07 | -0.21 | -0.04 | -0.21 | -0.24 | 0.34 | 0.37 | 0.28 | 0.25 | -0.05 | -0.02 | 0.34 | -0.01 | 0.63 |
| | U.S. Direct Real Estate | 0.14 | 0.14 | 0.12 | 0.11 | 0.06 | 0.12 | 0.10 | 0.07 | 0.02 | -0.06 | -0.01 | 0.28 | -0.02 | 0.00 | -0.09 | -0.11 | -0.07 | 0.04 | -0.06 | -0.11 | 0.05 | -0.10 | -0.03 |
| | Timberland | -0.04 | -0.04 | -0.05 | -0.04 | -0.06 | -0.03 | -0.01 | -0.04 | -0.02 | 0.05 | 0.11 | 0.29 | 0.11 | 0.09 | -0.02 | -0.04 | -0.01 | 0.01 | 0.09 | 0.08 | -0.08 | 0.02 | -0.11 |
| | Farmland | 0.05 | 0.05 | 0.03 | 0.05 | 0.00 | 0.06 | 0.07 | 0.04 | 0.06 | -0.05 | -0.02 | 0.08 | -0.04 | -0.01 | -0.06 | -0.09 | -0.02 | -0.08 | -0.03 | -0.02 | -0.09 | -0.07 | -0.08 |
| | U.S. REIT | 0.70 | 0.69 | 0.75 | 0.74 | 0.66 | 0.67 | 0.64 | 0.60 | 0.56 | 0.15 | -0.10 | -0.07 | -0.13 | -0.11 | 0.35 | 0.33 | 0.35 | 0.23 | 0.04 | 0.00 | 0.63 | 0.11 | 0.69 |
| | Global REIT | 0.81 | 0.80 | 0.83 | 0.78 | 0.73 | 0.85 | 0.84 | 0.81 | 0.78 | 0.19 | -0.12 | -0.08 | -0.14 | -0.14 | 0.43 | 0.44 | 0.41 | 0.28 | 0.05 | 0.03 | 0.58 | 0.13 | 0.75 |
| | Global Private Equity | 0.84 | 0.83 | 0.86 | 0.83 | 0.85 | 0.89 | 0.87 | 0.85 | 0.79 | 0.02 | -0.26 | -0.07 | -0.28 | -0.28 | 0.30 | 0.31 | 0.26 | 0.17 | -0.12 | -0.12 | 0.52 | -0.05 | 0.74 |
| | U.S. Private Equity | 0.84 | 0.83 | 0.85 | 0.84 | 0.85 | 0.86 | 0.84 | 0.82 | 0.77 | 0.00 | -0.26 | -0.08 | -0.27 | -0.28 | 0.25 | 0.26 | 0.21 | 0.16 | -0.13 | -0.13 | 0.50 | -0.05 | 0.70 |
| | Infrastructure | 0.44 | 0.44 | 0.47 | 0.42 | 0.44 | 0.46 | 0.43 | 0.45 | 0.45 | -0.02 | -0.29 | -0.09 | -0.27 | -0.34 | 0.24 | 0.30 | 0.13 | 0.10 | -0.14 | -0.13 | 0.36 | 0.18 | 0.59 |

| | U.S. Leveraged Loans | Global Aggregate | Global Treasury | Global Corporate | Emerging Markets (U.S. Dollar) | Emerging Markets Sovereign Local Currency | Absolute Return | Hedge Funds | Hedge Funds - Equity Hedge | Hedge Funds - Event Driven | Hedge Funds - Macro | Hedge Funds - Relative Value | Commodities | Global Natural Resources Equity | U.S. Direct Real Estate | Timberland | Farmland | U.S. REIT | Global REIT | Global Private Equity | U.S. Private Equity | Infrastructure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U.S. Leveraged Loans | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| Global Aggregate | 0.05 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| Global Treasury | -0.09 | 0.98 | 1.00 | | | | | | | | | | | | | | | | | | | |
| Global Corporate | 0.38 | 0.90 | 0.80 | 1.00 | | | | | | | | | | | | | | | | | | |
| Emerging Markets (U.S. Dollar) | 0.43 | 0.41 | 0.29 | 0.56 | 1.00 | | | | | | | | | | | | | | | | | |
| Emerging Markets Sovereign Local Currency | 0.34 | 0.49 | 0.39 | 0.60 | 0.86 | 1.00 | | | | | | | | | | | | | | | | |
| Absolute Return | 0.47 | 0.09 | 0.00 | 0.27 | 0.44 | 0.38 | 1.00 | | | | | | | | | | | | | | | |
| Hedge Funds | 0.58 | 0.24 | 0.13 | 0.46 | 0.63 | 0.66 | 0.74 | 1.00 | | | | | | | | | | | | | | |
| Hedge Funds - Equity Hedge | 0.58 | 0.23 | 0.12 | 0.46 | 0.57 | 0.63 | 0.71 | 0.97 | 1.00 | | | | | | | | | | | | | |
| Hedge Funds - Event Driven | 0.68 | 0.20 | 0.08 | 0.46 | 0.61 | 0.62 | 0.73 | 0.93 | 0.91 | 1.00 | | | | | | | | | | | | |
| Hedge Funds - Macro | 0.05 | 0.29 | 0.27 | 0.28 | 0.31 | 0.34 | 0.42 | 0.59 | 0.50 | 0.45 | 1.00 | | | | | | | | | | | |
| Hedge Funds - Relative Value | 0.80 | 0.21 | 0.06 | 0.52 | 0.63 | 0.57 | 0.69 | 0.81 | 0.79 | 0.86 | 0.30 | 1.00 | | | | | | | | | | |
| Commodities | 0.41 | 0.37 | 0.29 | 0.49 | 0.38 | 0.46 | 0.50 | 0.58 | 0.58 | 0.53 | 0.40 | 0.54 | 1.00 | | | | | | | | | |
| Global Natural Resources Equity | 0.51 | 0.37 | 0.26 | 0.57 | 0.57 | 0.64 | 0.62 | 0.84 | 0.84 | 0.77 | 0.44 | 0.71 | 0.72 | 1.00 | | | | | | | | |
| U.S. Direct Real Estate | 0.07 | -0.03 | -0.02 | -0.03 | -0.02 | 0.03 | 0.35 | 0.07 | 0.08 | 0.11 | -0.02 | 0.07 | 0.19 | 0.12 | 1.00 | | | | | | | |
| Timberland | -0.16 | 0.05 | 0.07 | -0.03 | -0.02 | -0.02 | 0.09 | 0.03 | 0.04 | -0.02 | 0.19 | -0.04 | -0.05 | 0.02 | 0.12 | 1.00 | | | | | | |
| Farmland | -0.14 | -0.01 | 0.01 | -0.04 | -0.03 | -0.01 | 0.04 | 0.02 | 0.02 | -0.02 | 0.06 | -0.07 | -0.06 | 0.07 | 0.17 | 0.47 | 1.00 | | | | | |
| U.S. REIT | 0.53 | 0.32 | 0.24 | 0.46 | 0.49 | 0.60 | 0.26 | 0.51 | 0.53 | 0.56 | 0.10 | 0.51 | 0.33 | 0.50 | 0.16 | -0.09 | -0.03 | 1.00 | | | | |
| Global REIT | 0.58 | 0.44 | 0.33 | 0.62 | 0.64 | 0.75 | 0.42 | 0.71 | 0.71 | 0.72 | 0.28 | 0.66 | 0.49 | 0.69 | 0.13 | -0.08 | 0.00 | 0.87 | 1.00 | | | |
| Global Private Equity | 0.65 | 0.32 | 0.22 | 0.52 | 0.53 | 0.67 | 0.53 | 0.80 | 0.83 | 0.80 | 0.28 | 0.70 | 0.52 | 0.72 | 0.16 | -0.04 | -0.02 | 0.74 | 0.84 | 1.00 | | |
| U.S. Private Equity | 0.62 | 0.29 | 0.20 | 0.47 | 0.50 | 0.65 | 0.50 | 0.77 | 0.80 | 0.77 | 0.26 | 0.66 | 0.48 | 0.68 | 0.13 | -0.04 | -0.02 | 0.73 | 0.83 | 0.98 | 1.00 | |
| Infrastructure | 0.54 | 0.09 | 0.01 | 0.31 | 0.31 | 0.35 | 0.43 | 0.50 | 0.48 | 0.54 | 0.19 | 0.57 | 0.37 | 0.47 | 0.03 | -0.14 | -0.09 | 0.36 | 0.45 | 0.45 | 0.44 | 1.00 |

Note: The capital market assumptions are The Bank of New York Mellon's estimates based on historical performance and the current market environment. We do not present the capital market assumptions as actual or guaranteed future performance. This material is approved for institutional investors or other qualified, sophisticated individuals only. Not for retail use or distribution. Accordingly, this material is not to be reproduced in whole or in part or used for any other purpose. Refer to Disclosures.

# 10-YEAR CAPITAL MARKET RETURN ASSUMPTIONS

*TOP FIVE THEMES IMPACTING ASSUMPTIONS FOR 2013*

## DELEVERAGING AND THE ROLE AND SIZE OF GOVERNMENT

Developed country governments have taken on significant amounts of debt in their efforts to stimulate growth since the onset of the Great Recession, with G7 countries' government net debt rising by more than 50% between 2007 and 2011. As rating agency downgrades underscore the unsustainability of this growing debt burden, we expect to see policy options diminish in the absence of robust growth and governments forced to adjust existing social spending commitments and spending priorities to get government finances back onto a sustainable trajectory. Regulatory changes, such as Basel III and Dodd Frank, are increasing capital requirements for financial institutions, raising the minimum quality of capital they can hold, and limiting their role as market makers. These changes will encourage banks to hold more high-grade government debt, reduce market liquidity, and increase financial market volatility. Since reaching the zero bound on interest rates, central banks in the G7 economies have been expanding their balance sheets through quantitative easing (i.e., asset purchases). These policies are credited with lowering U.S. Treasury yields by between 75 and 100 bps, with ancillary benefits for mortgages, corporate bonds, and other sectors of the fixed income markets. As economic conditions normalize over the next decade, central banks will contemplate unwinding their balance sheets, with consequences for these same sectors as well as broader financial markets.

## CHANGING DEMOGRAPHICS AND LABOR MARKETS

The share of the global population over 60 is expected to increase in coming decades, but the sunset years for the "baby boomer" generation in developed countries have already begun. This will drive a secular change in investor asset preferences, which will be most evident in the defined benefit space, as investors seek to hedge their future liabilities with more certain cash flows. In contrast, emerging and frontier markets will continue to see faster population growth from a large base, driving an increase in consumption rates. This, together with a younger population profile, should drive investors in these markets towards higher risk assets that match investor horizons.

## ENERGY SUPPLY AND DEMAND

Demand for energy is expected to grow steadily over the next 5 years, mostly led by emerging markets as their economies continue to urbanize, driving a rise in energy consumption per capita. Forecasts estimate total growth in demand at 9 million barrels per day, while new supply in the same period is likely to be less than 7 million barrels per day. Prices will also be underpinned by higher production costs involved in accessing deep water reserves. Improving energy efficiency in both developed and emerging markets is unlikely to offset further price appreciation.

## EM / DM DECOUPLING

Developing markets account for an increasing share of global GDP growth (48% in the 90s versus 61% since 2000). Positive policy developments since the 1990s have given EM governments more flexibility in both monetary and fiscal policy (+150BP real rates vs. negative for DM and ~40% debt to GDP versus >100% for DM). While some markets may not avoid the middle-income trap, higher growth is likely to persist over the next five years and "South-South" trade has made EM economies less dependent on DM growth. Relative to the last 10 years, the growth spread between EM and DM growth is likely to be ~3% versus 6% and the correlation of growth will drop from 0.8 to >0.4.

## EXCESSIVE OPTIMISM ON EARNINGS

Over the longer term, real corporate earnings in the US have grown in the neighborhood of 2.5%. Over the last 20 years they have grown at a 6% annual rate. The current real earnings growth rate in IBES is around 7.5%. In the short run earnings can grow faster than GDP as margins expand, and as corporations expand to more profitable markets. However, those patterns cannot continue forever, and growth in aggregate corporate earnings must converge to global GDP growth. Assuming that the numbers in IBES are representative of investors' expectations, when growth slows, P/Es will contract, and the equity markets will underperform.

# 10-YEAR CAPITAL MARKET RETURN ASSUMPTIONS

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# 10-YEAR CAPITAL MARKET RETURN ASSUMPTIONS

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