US Equity Risk Premium
The equity risk premium ("ERP") is the extra return over the expected yield on risk-free securities that investors expect to receive from an investment in a diversified portfolio of common stocks.\(^1\) It can also be thought to measure what investors demand over and above the risk-free rate for investing in equities as a class or the market price for taking on average equity risk.\(^2\)

In recent years, US risk-free rates have reached levels near historic lows due to the perceived low risk of US treasuries relative to the sovereign debt of other developed nations. Additionally, the Federal Reserve and other Central Banks around the world have undertaken quantitative easing and other efforts to lower interest rates in response to economic conditions. This past quarter, the Federal Reserve announced it would conclude its asset purchase program; however, it will continue to maintain its existing bond holdings and reinvest principal payments. This effort, along with the current lending rate policy, will help maintain accommodative financial conditions. As a result, the capital asset pricing model ("CAPM"), which utilizes the ERP to calculate a cost of equity, has implied a below-average cost of equity when the market may have exhibited higher risk. Yields on US Treasury bonds, which were being manipulated by government intervention, were the primary driver for the implied below-average cost of equity. In the past year, US Treasury yields have been declining after returning to normal levels for a brief period of time late in 2013. Several reasons have been cited for the decline in US Treasury rates, most notably the shift from EU sovereign debt to US Treasuries, geopolitical unrest, pension funds protecting their status and, more recently, a sharp decline in worldwide energy prices. Another factor is the Federal Reserve signaling to the markets that rates may not be raised as previously expected until 2016. Yields on the 20-year US Treasury bond have declined to 2.47% as of December 31, 2014, from 3.08% as of June 30, 2014, and 3.72% as of December 31, 2013. It is too soon to determine whether this pullback trend will last throughout 2015.

Research has shown that the ERP is cyclical during business cycles and that the ERP can fluctuate within its historic range based on current and forecasted economic conditions. The ERP tends
to move in the opposite direction of the economy, so when the business cycle is at its peak, the ERP will be at the lower end of its historical range; conversely, during economic troughs, the ERP will be at the higher end of the range. The historical risk-free rate and ERP are presented in the chart on the preceding page.

There is no single universally accepted methodology for estimating the ERP; thus, there is wide diversity in practice among academics and financial advisors with regard to recommended ERP estimates.

American Appraisal researched and analyzed various economic and market factors in order to determine where the current ERP should fall within a range of historical ERP. To determine which indicators were most relevant to the ERP, correlations were calculated for these indicators relative to the historical ERP. Long-term correlations greater than +/- 0.5 were considered meaningful.

Based on our research and analysis, American Appraisal utilizes a 6.0% US ERP combined with the actual risk-free rate as of January 2015, which is consistent with our conclusion for the prior quarter. Additional details of the factors we reviewed follow.

**Economic/Market Indicators**

The factors determined to display moderate or strong correlations with historical ERPs are the CBOE Volatility Index ("VIX"), Damodaran’s implied premium, and Moody’s Aaa and Baa 20-year corporate credit spreads. VIX is the ticker symbol for the Chicago Board Options Exchange ("CBOE") Volatility Index, which numerically expresses the market’s expectations of 30-day volatility; it is constructed by using the implied volatilities of a wide range of S&P 500 Index options. The results are meant to be forward-looking and are calculated by using both call and put options.

![CBOE VIX vs. Historical ERP](chart.png)

<table>
<thead>
<tr>
<th>Period</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-2013</td>
<td>-0.59</td>
</tr>
<tr>
<td>2003-2013</td>
<td>-0.74</td>
</tr>
</tbody>
</table>
The VIX is a widely used measure of market risk and often is referred to as the investor fear gauge. There are three variations of the volatility indexes: (1) the VIX, which tracks the S&P 500; (2) the VXN, which tracks the Nasdaq 100; and (3) the VXD, which tracks the Dow Jones Industrial Average. Damodaran’s implied premium, developed by Aswath Damodaran, Professor of Finance at the Stern School of Business at New York University, is a forward-looking approach to calculating an expected ERP. It is based on using current market data to calculate an implied or residualized ERP.\(^3\)

Moody’s Aaa corporate credit spreads are calculated based on the difference in Aaa corporate yields vs. US treasuries with similar maturities.

**Economic Indicators**

As described previously, the VIX, Damodaran’s implied premium, and Moody's Aaa and Baa 20-year corporate credit spreads display meaningful correlations with historical ERPs. Each of the factors is briefly discussed below:

### Damodaran’s Implied Premium

The six-month moving average trendline suggests that the implied premium has steadily trended down from 7.0% toward 6.0%, and dropped sharply - to slightly below 5% - at the end of 2013. It is now back up near 6% at the end of 2014.
**CBOE Volatility Index (VIX)**

The VIX appears to be bouncing back from its lows, which approached low double digits, and increased to approximately 17 (long-term average near 20) at the end of September 2014. The VIX has fluctuated considerably over the past few years, spiking to over 40 in 2011. Since the first quarter of 2012, the six-month trendline has dipped down below 20 and is trending toward 15. The index is hovering close to the near-record lows throughout 2014 but toward the end of the year it trended toward 20, reflecting turmoil in the energy markets.

**Moody’s Aaa and Baa Corporate Credit Spreads (20-year)**

In 2012, Aaa and Baa spreads fell, rose, fell, and rose again, while their six-month moving averages remained relatively flat. Since January 2013, corporate credit spreads have remained relatively flat; however, the corporate spreads began to widen slightly over the fourth quarter of 2014.

**Additional Economic Indicators**

In addition to the economic and market factors that display meaningful correlations with historical ERPs, the following economic indicators are monitored on a frequent basis to determine the current status of the US economy and help establish where the current ERP falls within the historical range.

**Consumer Sentiment**

Consumer sentiment trends, as tracked by the University of Michigan, indicate improving consumer sentiment, which is typically preceded by positive economic trends. The survey has continued to trend toward new highs, with the latest survey posting a result of 93.6.
US Real GDP
The six-month moving average trendline for US real GDP indicates a relatively flat economy with slower growth trending above 2.0%. During the first quarter of 2014 the economy contracted at an annual rate of 2.9%. Economists cite much of the contraction to the bad weather that much of the country endured, which affected production, construction, and shipments. Many economists correctly projected improvement in the second quarter of 2014, with an annualized real growth rate of 4.6%. The economic growth observed in Q2 continued in Q3 with an annualized real growth rate of 5.0%. This is considered a coincident indicator by economists and is neither leading nor lagging.

Conclusion
As the ERP is cyclical and can fluctuate within its historical range based on current and economic conditions, please consult with your American Appraisal valuation advisor when developing a weighted average cost of capital or, more specifically, the cost of equity for your business.

Visit www.american-appraisal.com for more information.

Sources