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## Client Alert

January 27, 2012

Duff & Phelps Decreases  
U.S. Equity Risk Premium  
Recommendation to 5.5%,  
Effective January 15, 2012

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# Executive Summary

## 5.5%

The Duff & Phelps U.S. Equity  
Risk Premium Recommendation  
effective January 15, 2012

### Duff & Phelps Decreases U.S. ERP Recommendation to 5.5% as of January 15, 2012

The Equity Risk Premium (ERP) is a key input used to calculate the cost of capital within the context of the Capital Asset Pricing Model (CAPM) (and other models).<sup>1</sup> The ERP is used as a building block when estimating the cost of capital (i.e. “discount rate”, “expected return”, “required return”), and is an essential ingredient in any business valuation, project evaluation, and the overall pricing of risk.

Duff & Phelps regularly reviews fluctuations in global economic and financial conditions that warrant periodic reassessments of ERP. Based upon current market conditions, **Duff & Phelps is decreasing its U.S. ERP recommendation to 5.5% when developing discount rates as of January 15, 2012 and thereafter, until further guidance is issued.** Duff & Phelps reviews its Equity Risk Premium assessment on a monthly basis. We will continue to use 5.5% until such time evidence indicates equity risk in financial markets has materially changed.

In developing our ERP recommendation, we incorporated a “normalized” 20-year yield on U.S. government bonds of 4.0%, implying a 9.5% (5.5% + 4.0%) “base” cost of equity capital estimate in the U.S. as of mid-January 2012. Were we to use the spot yield-to-maturity of 2.6% as of mid-January, 2012<sup>2</sup>, we would arrive at an overall discount rate inappropriately low vis-à-vis the risks currently facing investors.<sup>3</sup>

The previous Duff & Phelps U.S. ERP recommendation was 6.0%, established as of September 30, 2011. Since then, the level of risk in financial markets appears to be reduced to a certain degree. Recent economic indicators are pointing to a moderate recovery of the U.S. economy and that a double-dip recession is not imminent. Markets have reacted positively to these trends, with broad equity indices (e.g. S&P 500) rising considerably and volatility declining over this period. In addition, the decrease in credit spreads of U.S. high-yield over U.S. investment grade corporate bonds was also factored into the change in our recommendation.

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<sup>1</sup> The cost of capital is the expected rate of return required in order to attract funds to a particular investment.

<sup>2</sup> The 20-year Treasury yield published as of January 15, 2012 is 2.59% (dated January 13). Source: Board of Governors of the Federal Reserve System website at: <http://www.federalreserve.gov/releases/h15/data.htm>.

<sup>3</sup> To learn more about the equity risk premium, the risk free rate, and other cost of capital related issues, visit [www.DuffandPhelps.com/CostofCapital](http://www.DuffandPhelps.com/CostofCapital)

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# Overview of Duff & Phelps ERP Methodology

## The Duff & Phelps Equity Risk Premium (ERP) Estimation Methodology is a Two-Dimensional Process

There is no single universally accepted methodology for estimating the Equity Risk Premium (ERP); consequently there is wide diversity in practice among academics and financial advisors with regards to recommended ERP estimates. For this reason, Duff & Phelps employs a two-dimensional process that takes into account a broad range of economic information and multiple ERP estimation methodologies to arrive at our recommendation.

Long-term research indicates that the ERP is cyclical. We use the term *normal*, or *unconditional* ERP to mean the long-term average ERP without regard to current market conditions. This concept differs from the *conditional* ERP, which reflects current economic conditions.<sup>4</sup> The “unconditional” ERP range versus a “conditional” ERP is further distinguished as follows:

### “What is the range?”

- **Unconditional ERP Range** – The objective is to establish a reasonable range for a normal or unconditional ERP that can be expected over an entire business cycle. Based on the analysis of academic and financial literature and various empirical studies, we have concluded that a reasonable long-term estimate of the normal or unconditional ERP for the U.S. is in the range of 3.5% to 6.0%.<sup>5</sup>

### “Where are we in the range?”

- **Conditional ERP** – The objective is to determine where within the unconditional ERP range should the conditional ERP be, based on current economic conditions. Research has shown that ERP is cyclical during the business cycle. When the economy is near (or in) a recession, the conditional ERP is at the higher end of the normal, or unconditional ERP range; conversely, when the economy improves, the conditional ERP moves back toward the middle of the range. At the peak of an economic expansion, the conditional ERP is closer to the lower end of the range.

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<sup>4</sup> The “conditional” ERP is the ERP estimate published by Duff & Phelps as the “Duff & Phelps Recommended ERP”.

<sup>5</sup> See Shannon P. Pratt and Roger J. Grabowski, *Cost of Capital: Applications and Examples*, Fourth Edition, Chapter 9, “Equity Risk Premium”, pages 115–158 for a detailed discussion of the ERP.

# Basis for Change in Recommended ERP

## Current Economic Conditions

As previously indicated, based on the analysis of academic and financial literature and various empirical studies, we have concluded that a reasonable long-term estimate of the *normal* or *unconditional* U.S. Equity Risk Premium (ERP) is in the range of 3.5% to 6.0%. Based on economic conditions during late 2008 and early 2009, the Duff & Phelps U.S. ERP estimate was increased from 5.0% to 6.0% (see Table 1 for Duff & Phelps' U.S. ERP guidance and corresponding risk free rates from January 2008 through the present). As markets began to stabilize following the 2008–2009 financial crisis, we decreased our U.S. ERP estimate in December 2009 to 5.5%.

**Table 1: Duff & Phelps Recommended U.S. ERP and Corresponding Risk Free Rates<sup>6</sup>**

January 2008–Present

	<i>Duff &amp; Phelps Recommended ERP</i>	<i>Risk Free Rate</i>
<b>Current ERP Guidance ✓</b> January 15, 2012 – UNTIL FURTHER NOTICE	5.5%	4.0% Normalized 20-year Treasury yield *
<b>Change in ERP Guidance</b> September 30, 2011 – January 14, 2012	6.0%	4.0% Normalized 20-year Treasury yield *
July 2011 – September 29, 2011	5.5%	4.0% Normalized 20-year Treasury yield *
June 1, 2011 – June 30, 2011	5.5%	Spot 20-year Treasury Yield
May 1, 2011 – May 31, 2011	5.5%	4.0% Normalized 20-year Treasury yield *
December 1, 2010 – April 30, 2011	5.5%	Spot 20-year Treasury Yield
June 1, 2010 – November 30, 2010	5.5%	4.0% Normalized 20-year Treasury yield *
<b>Change in ERP Guidance</b> December 1, 2009 – May 31, 2010	5.5%	Spot 20-year Treasury Yield
June 1, 2009 – November 30, 2009	6.0%	Spot 20-year Treasury Yield
November 1, 2008 – May 31, 2009	6.0%	4.5% Normalized 20-year Treasury yield *
<b>Change in ERP Guidance</b> October 27, 2008 – October 31, 2008	6.0%	Spot 20-year Treasury Yield
January 1, 2008 – October 26, 2008	5.0%	Spot 20-year Treasury Yield

\* Normalized in this context means that in months where the risk-free rate is deemed to be abnormally low, a proxy for a longer-term sustainable risk-free rate is used.

<sup>6</sup> To learn more about the equity risk premium, the risk free rate, and other cost of capital related issues, download a free copy of “Developing the Cost of Equity Capital: Risk-Free Rate and ERP During Periods of ‘Flight to Quality’”, August 2011, by Roger J. Grabowski at [www.DuffandPhelps.com/CostofCapital](http://www.DuffandPhelps.com/CostofCapital)

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At the beginning of 2011 indicators began to emerge that suggested the U.S. and other advanced economies' recoveries were slowing down, giving rise to questions regarding the pace and sustainability of the economic recovery. Global economic and financial market conditions deteriorated even further in the summer of 2011, with volatility in financial markets reaching significantly elevated levels.

Fiscal uncertainty also increased, which led markets to become increasingly skeptical about governments' ability to stabilize their public debt, with some analysts even questioning the continued viability of the Euro, the common currency of the European Union. In the U.S., Congress' stalemate in raising the U.S. debt ceiling culminated in S&P's historic decision in August 2011 to downgrade the U.S. sovereign debt rating from AAA to AA+.

Investors were taking flight to government bonds of perceived "safe-haven" countries, such as the U.S., Germany, and the U.K. Uncertainty over future demand (on the business side), and future job and income growth (on the household side), was also holding back investment and spending decisions.

By the end of September, the combination of these factors had driven financial market participants to fear that the global economy was once again on the verge of a new crisis.<sup>7</sup> Based on these conditions, Duff & Phelps raised its recommended ERP to 6.0% from 5.5%, effective September 30, 2011.

Compared to September 2011, risks in U.S. markets appear to be reduced, and 2012 is beginning on a more stable note than that anticipated just a few months earlier. Slow but moderate growth may be expected in 2012<sup>8</sup>, and despite the recent downgrade of several Euro-zone countries' credit ratings, the Euro-zone seems to have pulled back from what some analysts perceived to be its imminent meltdown in the fall of 2011.<sup>9</sup>

Recent U.S. economic data has been better than many analysts anticipated, suggesting that a double-dip recession is not imminent; notably, the U.S. is experiencing an improving job market, as well as rising consumer confidence,<sup>10</sup>

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<sup>7</sup> For a more extensive review of global economic conditions back in September, consider a review of "World Economic Outlook September 2011 – Slowing Growth, Rising Risks", published by the International Monetary Fund.

<sup>8</sup> The Federal Open Market Committee (FOMC) statement on December 13, 2011 stated that the Committee "continues to expect a moderate pace of economic growth over coming quarters..."

<sup>9</sup> Although some signs of increased Euro-zone stability have emerged, there are still plenty of reasons for caution. For example, in a speech to the Virginia Bankers Association/Virginia Chamber of Commerce on January 6, 2012, for example, Federal Reserve Governor Elizabeth A. Duke said, "...the potential fallout from the sovereign debt crisis in Europe remains a serious concern."

<sup>10</sup> The Reuters/University of Michigan Index of Consumer Sentiment rose to 69.4 in December 2011 from 59.4 in September 2011. Source: Thomson Reuters <http://www.thomsonreuters.com>

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which has been accompanied by increased consumer spending.<sup>11</sup> Many analysts believe that the key to U.S.'s 2012 economic growth will be the trajectory of employment growth. It is therefore significant that nonfarm payrolls increased in December by more than initially expected.<sup>12</sup> Possibly more important is the downward trend in weekly jobless claims,<sup>13</sup> with an accompanying decline in the unemployment rate,<sup>14</sup> which may portend a stabilizing picture of unemployment.

The Federal Reserve's ("Fed") announcement last August that it will leave its official benchmark interest rate target near zero through mid-2013 may provide further support for what, until now, has been a very weak and tentative recovery.

### Current Financial Markets Conditions

Financial markets have reacted positively to these events, with U.S. broad equity indices rising significantly, (e.g., the S&P 500 Index increased 13.9% from September 30, 2011 through mid-January 2012), and equity volatility declining meaningfully over the same period. Implied equity volatility, as measured by the Chicago Board Options Exchange (CBOE) "VIX" Index (see Graph 1), rose sharply in the third quarter of 2011, reaching a peak on August 8 of 48.0. On September 30, 2011 the VIX was at 43.0, but declined to 20.9 by mid-January 2012.<sup>15</sup> Interestingly, this compares to a VIX level of 17.6 on January 1, 2011, implying that perceptions of risk are now relatively similar to those observed at the beginning of 2011 (see Graph 1).<sup>16</sup> As a reminder (see Table 1), the Duff & Phelps U.S. recommended ERP was also 5.5% at the beginning of 2011.

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<sup>11</sup> "Overall, sales [in December 2011] rose 3.4 percent at the 22 retailers tracked by the Thomson Reuters same-store sales index, compared with the 3.3 percent analyst forecast." Source: Reuters, January 5, 2012. According to the U.S. Census Bureau, advance estimates of U.S. retail and food services sales for December 2011 increased 0.1% relative to November 2011 and 6.5% versus December of 2010. Source: <http://www.census.gov/retail>

<sup>12</sup> Total nonfarm payroll employment increased by 200,000 in December. Source: U.S. Bureau of Labor Statistics.

<sup>13</sup> The 4-week average of initial jobless claims declined to 379,000 in mid-January 2012 from 418,000 in late September 2011. Source: U.S. Department of Labor. Economists typically think of 400,000 as the threshold above which the economy is contracting rather than expanding. See for example, Standard & Poor's "Global Credit Portal – RatingsDirect – Economic Research: U.S. Economic Forecast: U.S. Weekly Financial Notes: Freaky Friday", January 13, 2012

<sup>14</sup> The U.S. unemployment rate declined to 8.5% in December 2011 from 9.0% in September 2011. U.S. unemployment reached a high of 10.0% in October 2010 following the 2008–2009 Financial Crisis. Source: U.S. Department of Labor.

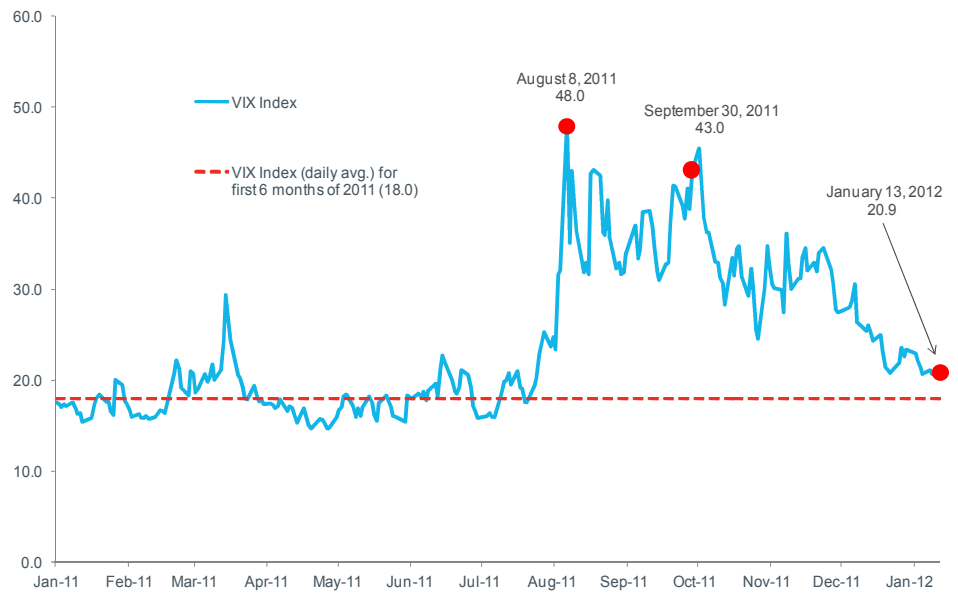
<sup>15</sup> The Chicago Board Options Exchange (CBOE) Volatility Index® (VIX®) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices.

<sup>16</sup> The VIX Index averaged 18.04 (daily) in the first six months of 2011. By January 13, 2012, the VIX Index was at 20.91.

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### Graph 1: Chicago Board Options Exchange (CBOE) “VIX” Index

January 3, 2011 – January 13, 2012



Source: S&P Capital IQ

Default spreads can also be a useful indicator of markets' perception of risk. For example, in the summer of 2011, corporate spreads began to widen, peaking at the end of September, reflecting the high volatility and level of uncertainty discussed earlier (see Graph 2). Since then, however, these spreads have narrowed significantly, down to 4.28% by mid-January 2012. Furthermore, by mid-January, the spread in U.S. corporate yields of high-yield over investment grade bonds was not far from the level observed at the start of 2011 (3.51% at December 31, 2010).<sup>17</sup>

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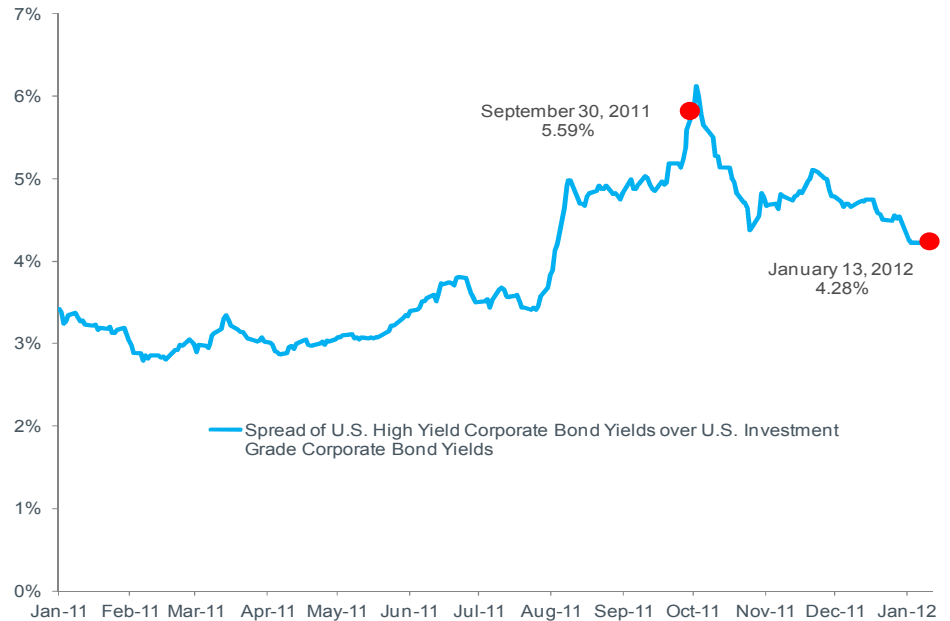
<sup>17</sup> Source of underlying data: Federal Reserve Bank of St. Louis. U.S. investment grade corporate bonds are represented by the BofA Merrill Lynch US Corporate Master Effective Yield series, and high yield U.S. corporate bonds are represented by the BofA Merrill Lynch US High Yield Master II Effective Yield series.



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**Graph 2: Spread of U.S. High Yield Corporate Bond Yields over U.S. Investment Grade Corporate Bond Yields**

January 3, 2011 – January 13, 2012



**Source:** FRED® Economic Data – Federal Reserve Bank of St. Louis

While investors' perceptions and attitudes towards risk seemed to have reversed in the last couple of months, significant risks still remain. In the words of a recent S&P report updating the economic outlook for the U.S.:<sup>18</sup>

*"In a normal environment it would make sense to extrapolate the recent improvements out for the full year, but in this volatile environment, trending the recent good news forward is a risky proposition."*

Many analysts still think that the largest threat to the U.S. recovery comes from governments' political actions. As we head into 2012, the U.S. presidential elections may have a material impact in market perceptions of risk (e.g. regulatory and fiscal uncertainty). However, the Euro-zone sovereign crisis is considered to be the largest uncertainty factor currently endangering the U.S. recovery. European leaders continue to work out their plans to end the debt crisis, which is threatening to drag the region back into recession. A mild recession in the Euro-zone is already anticipated by many analysts<sup>19</sup>, but that is not expected to tilt the U.S. back into recession. Nevertheless, system-wide financial contagion from potential Euro-zone

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<sup>18</sup> Standard & Poor's Global Credit Portal – RatingsDirect "Economic Research: U.S. Economic Forecast: Just Like Ol' Times", January 12, 2012.

<sup>19</sup> For example see Standard & Poor's Global Credit Portal – RatingsDirect "Sovereign Debt Problems Weigh On A Mostly Tepid Forecast", December 13, 2011 or see Citigroup – "Pan-Europe Road Ahead: Backing the Barbell", December 7, 2011 or see Credit Suisse – 2012 Outlook "Piecing Together or Falling to Pieces", December 1, 2011.

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sovereign debt defaults could indeed have a significant negative impact to the U.S. economy.

In aggregate, the evidence suggests that the appropriate conditional (i.e., “Recommended”) U.S. ERP, while still in the higher end of the long-term unconditional range, is likely lower in mid-January 2012 than it was in September 2011. Accordingly, **we recommend a U.S. Equity Risk Premium of 5.5% when developing discount rates as of January 15, 2012 and thereafter**, until further guidance is issued. In developing our ERP recommendation, we incorporated a ‘normalized’ 20-year yield on U.S. government bonds of 4.0%, implying a 9.5% (5.5% + 4.0%) “base” U.S. cost of equity capital estimate as of mid-January 2012. Normalized in this context means that in months where the risk-free rate is deemed to be abnormally low, a proxy for a longer-term sustainable risk-free rate is used.<sup>20</sup>

Please be advised that the current guidance will be reevaluated on a regular basis. In the aftermath of the 2008-2009 Financial Crisis, financial market conditions have changed dramatically in very short periods of time. Because of the high level of uncertainty still expected in the foreseeable future, we will issue regular updates to our U.S. ERP guidance, as conditions warrant it.

### Additional Indicators Supporting ERP Change

In addition to the general economic factors and financial market conditions described above, Duff & Phelps monitors other indicators that may provide a more quantitative view of where we are within the range of reasonable long-term estimates for the U.S. ERP.

Because of the impact of the Fed’s unprecedented quantitative easing measures on the economy and financial markets, many of the relationships we historically held true in finance are no longer stable or very meaningful. This makes it even more challenging to estimate inputs such as the ERP on a forward-looking basis. We are currently using the following model as corroborating evidence to the factors we described above.<sup>21</sup>

- **Damodaran Implied ERP** – Professor Aswath Damodaran calculates implied ERP estimates for the S&P 500 and publishes his estimates on his website.<sup>22</sup> He uses a two-stage model, projecting expected distributions (dividends and stock buybacks) based on an average of analyst estimates

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<sup>20</sup> Many valuations are done as of year’s end. Please note that for valuation dates as of December 31, 2011, the Duff & Phelps recommended ERP is 6.0%.

<sup>21</sup> The description of this methodology is largely based on Chapter 9 of *Cost of Capital – Applications and Examples*, Fourth Edition, by Shannon Pratt and Roger Grabowski. The Damodaran model estimates ERP in terms of a 10-year U.S. Government bond; we convert his implied ERP estimates to an equivalent estimate in terms of 20-year U.S. government bonds.

<sup>22</sup> Information and data available at <http://pages.stern.nyu.edu/~adamodar/>

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for earnings growth for individual firms comprising the S&P 500 for the first five years and the risk-free rate thereafter (since 1985). He solves for the discount rate, which equates the expected distributions to the current level of the S&P 500. At the end of September 2011 the ERP implied by this model approached levels not seen since February 2009.<sup>23</sup> However, in the months following September 2011, the ERP implied by this model has steadily and significantly decreased.

[Note: Appendix A summarizes the U.S. ERP implied by the Damodaran model since December 31, 2008.]

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<sup>23</sup> In February 2009, the ERP implied by using the Damodaran model as adjusted by Duff and Phelps, was in excess of 7.5%. At the end of September 2011, the ERP implied by the Damodaran model was in excess of 7.0%. In comparison, the average ERP implied by this model in the 12 months preceding September 2011 was 5.75%. As of mid-January, the implied ERP had once again decreased to 5.4% (as adjusted by Duff and Phelps).

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# Conclusion

## 5.5%

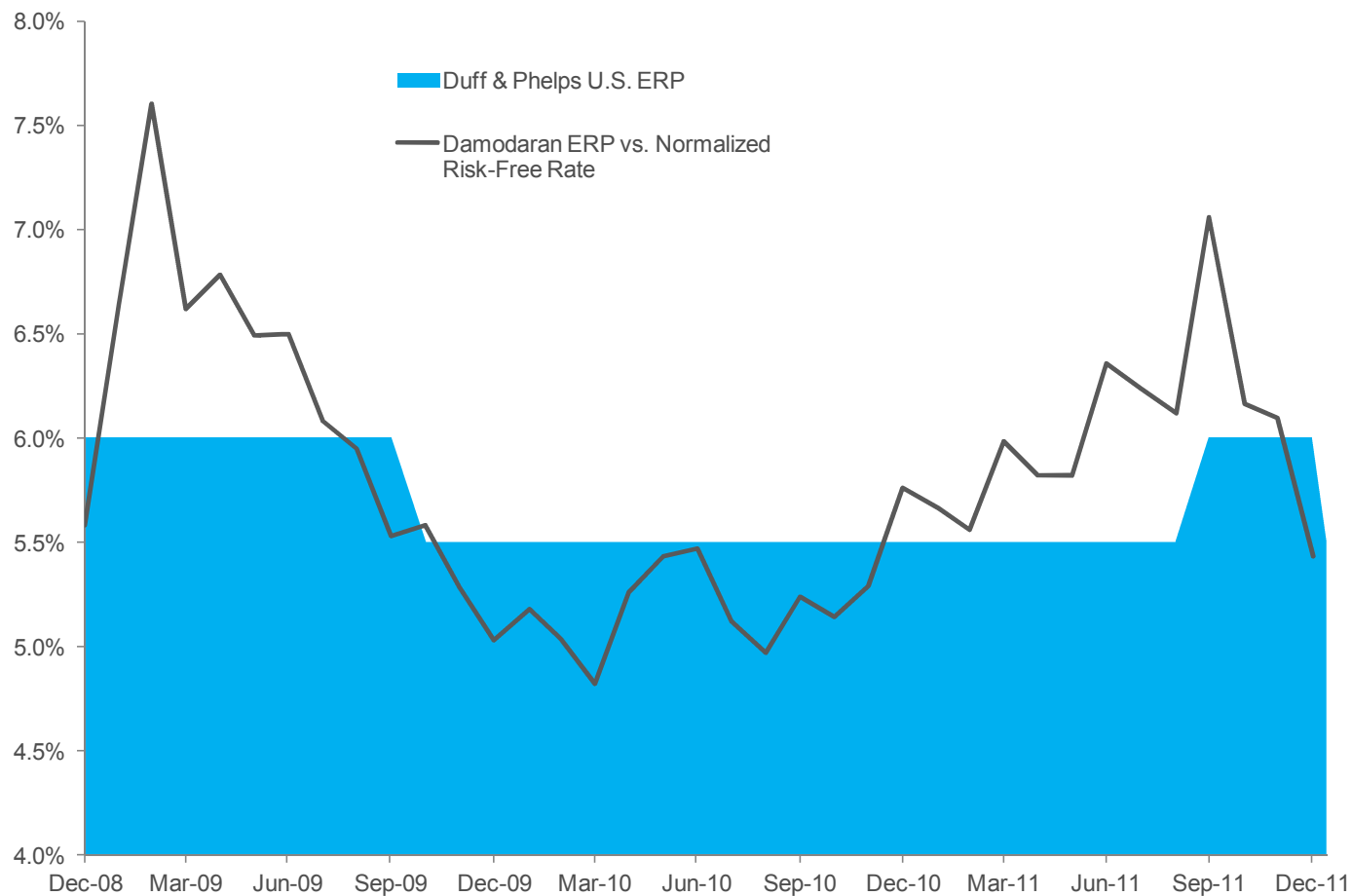
The Duff & Phelps U.S. Equity Risk Premium Recommendation effective January 15, 2012

### Duff & Phelps Decreases U.S. ERP Recommendation to 5.5% as of January 15, 2011

Based on the foregoing, we conclude that while the appropriate *conditional* Equity Risk Premium (ERP) is currently near the top of the long-term range, the risks embodied in the ERP are somewhat reduced when compared to risk levels as of September 2011. As a result, Duff & Phelps has decreased **its recommended U.S. Equity Risk Premium to 5.5% when developing discount rates as of January 15, 2012 and thereafter.** In developing our ERP recommendation, we incorporated a “normalized” 20-year yield on U.S. government bonds of 4.0%, implying a 9.5% (5.5% + 4.0%) “base” cost of equity capital estimate for the U.S. as of mid-January 2012.

Duff & Phelps reviews its U.S. Equity Risk Premium assessment on a monthly basis. We will continue to use 5.5% until such time as evidence indicates equity risk in financial markets has materially changed. This ERP change was developed based on the use of a normalized risk-free rate. “Normalized” in this context means that in months where the risk-free rate is deemed to be abnormally low, a proxy for a longer-term sustainable risk-free rate is used.

# Appendix A



## Additional Indicators Supporting the U.S. ERP Change

The graph illustrates the Damodaran Implied U.S. ERP model (estimated using a “normalized” 20-year U.S. Treasury yield), as compared to the Duff & Phelps U.S. ERP. Duff & Phelps regularly reviews fluctuations in global economic and financial conditions which warrant periodic reassessments of ERP. As of January 15, 2012, Duff & Phelps decreased its U.S. ERP estimate to 5.5% (from 6.0%).

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