



USA Equity Risk Premium Summary

ERP/MRP Summary for the United States

June 2021

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Introduction

This equity risk premium (ERP) study for the United States follows up on our research into ERP's in the Netherlands, Belgium and Luxembourg (the Benelux). In that market, we had observed that income approach (DCF) valuations sometimes differed from market approach (multiples-based) valuations. We discovered that traditional methods for measuring ERP sometimes resulted in discount rates that were too low, which led to our years long study into ERP's in various markets.

Some of the more readily available ERP measurements in the market today are based on single method calculations without regard to the subject market's intricacies. Our approach begins with an analysis of the subject market, which allows us to rationalize the results of our research for each market. We then apply multiple approaches to measure ERP.

We observed that the composition of a stock market can have an impact on ERP. For example, ERP in the Benelux, where the stock markets are dominated by cycle industries and a handful of large stocks, is high relative to the United States and Iberia (Spain and Portugal). The United States stock market has a broader representation of industries than the Benelux and the dominant stocks represent a smaller share of the total market. One might expect the Iberian stock market to require higher returns than the Benelux market because the Spanish and Portuguese governments have lower credit ratings than the Benelux countries, suggesting higher economic risk, however Iberian listed companies have a larger composition of non-cyclical companies and, like the United States, the dominant stocks represent a smaller share of the total market.

One of our approaches, the Credit Spread ERP, is a proprietary approach developed by Andrew Pike. As of the date of this report, we were unaware of other studies in the market that apply a similar approach. The Credit Spread ERP assumes that investors may take a total portfolio approach to their investment decisions. When investing in the equity of a company, an investor may consider the returns that they can achieve on not only other equities but also other assets classes, such as corporate bonds. As equities are generally riskier than most corporate bonds (with some exceptions), an investor should require a higher return when investing in equities vis-à-vis corporate bonds.

We also apply Implied ERP and Historical ERP approaches and we comment on ERP Surveys. The Implied ERP approach calculates the discount rate that equates the present value of analyst cash flow forecasts to the market capitalization of a portfolio of publicly traded stocks. The ERP is derived from the resulting discount rate. We use two calculation methods for the Implied ERP approach – free cash flow to firm (FCFF) and free cash flow to equity (FCFE). The FCFF method is based on enterprise-level (unlevered) cash flow forecasts where the resulting discount rate is weighted average cost of capital. The FCFE method is based on equity-level (levered) cash flow forecasts where the resulting discount rate is cost of equity. The Implied ERP is a midpoint between the ERP's implied by the FCFF and FCFE methods.

For the Historical ERP approach, we apply the S&P 500 and DJIA indices, and our USA 200 custom portfolio. Many valuation professionals and academics apply established equity market indices (such as the S&P 500 and DJIA) in their Historical ERP studies. Such indices are designed for benchmarking large capitalization



investment strategies and therefore include rebalancing, weighting limits, withholding taxes, etc. These limitations does not work well for ERP studies because such measures do not mirror the reality of holding the shares of a given company over a long investment horizon, which is the assumption applied in an ERP study. For this reason, we developed our USA 200 custom portfolio, which is not rebalanced, does not have weighting limits, withholding taxes, nor most of the other limitations of established equity market indices.

Historical ERP approaches can vary widely depending on holding period, data frequency and midpoint measurement (average or median), amongst other factors. Our study investigates various data frequencies and we measure both average and median. We compare the results of the S&P 500 and DJIA indices, and our USA 200 custom portfolio. This is accompanied by statistical measurements to help you evaluate our conclusions and determine which results are appropriate for you.

Our study is based on publicly traded companies and corporate bond data. We assume that the results are a reasonable proxy for valuations of non-listed companies, however one should be aware that publicly traded companies have characteristics that can differ from non-listed companies.

This report provides equity risk premium from multiple perspectives and provides a range of possible outcomes. Our suggested ERP might not be appropriate for all valuation subjects and cases. Readers should consider the circumstances of the object being valued and the subject for whom the object is being valued, and draw appropriate conclusions where necessary.

While we applied reasonable care in the execution of our study, it is dependent on certain data provided by 3rd parties that we assumed to be reliable and certain methods, techniques and assumptions that we deemed reasonable, each with their own strengths and weaknesses. Sources of the information and our methods, techniques and assumptions are each explained in this document so that you can make an informed decision about the results of our study.

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We hope that you find our report to be insightful and useful. If you would like to receive further information, please do not hesitate to contact Andrew Pike, managing director of AN Valuations at +31 70 221 0058 or at info@anvaluations.com.



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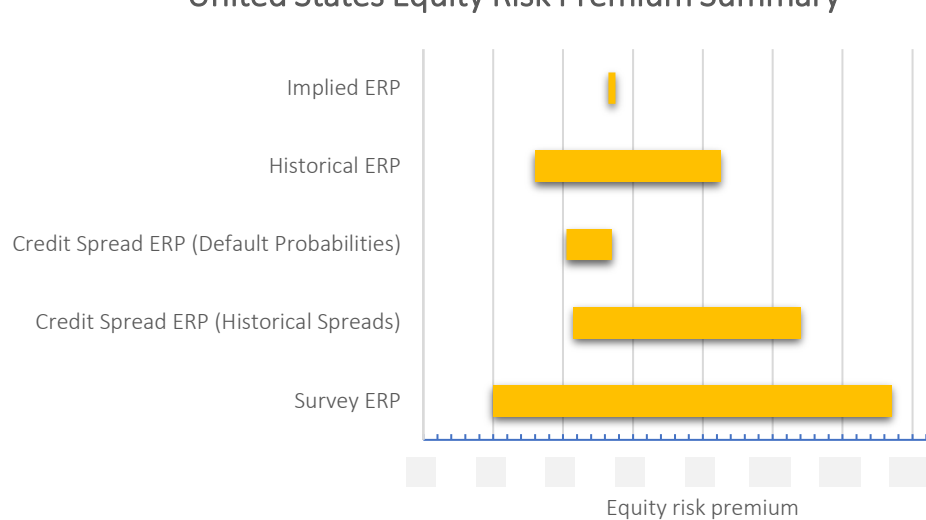
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2 Executive Summary

Our suggested Effective Date Conditional ERP for the United States is [redacted] based on a risk-free rate of [redacted]. Non-Conditional ERP's can range from [redacted] depending on the risk-free rate selected. The table below shows the Conditional ERP and Non-Conditional ERP's at various risk-free rates. We do not express a view on an appropriate long-term Non-Conditional risk-free rate.

United States Equity Risk Premium Summary



	Risk-free rate	ERP
Conditional ERP	[redacted]	[redacted]
Non-Conditional ERP	[redacted]	[redacted]
Non-Conditional ERP	[redacted]	[redacted]
Non-Conditional ERP	[redacted]	[redacted]

Conditional ERP considers current economic conditions. When applying a Conditional ERP to a business valuation discount rate, the measurement date actual risk-free rate should be applied.

Non-Conditional ERP considers potential future (rather than current) economic conditions. When applying a Non-Conditional ERP to a business valuation discount rate, a long-term normalized risk-free rate should be applied.

Calculation methods

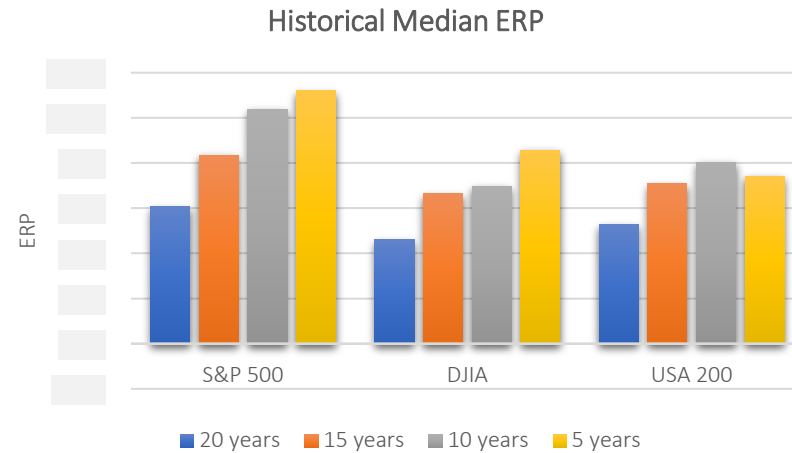
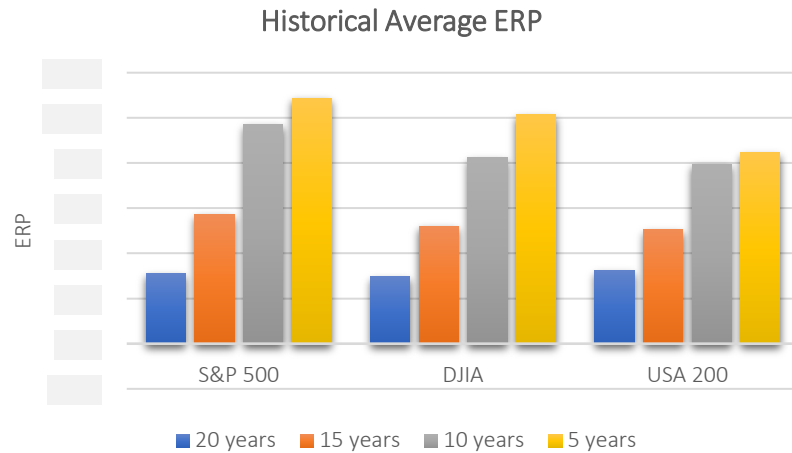
We calculated equity risk premiums (ERP's) as of 15 June 2021 (Effective Date) based on Implied, Historical and Credit Spread methods and comment on observed ERP Surveys.

The Implied ERP range is based on Effective Date market capitalization and analyst forecasts of cash flows. We use two calculation methods for the Implied ERP approach – free cash flow to firm (FCFF) and free cash flow to equity (FCFE). The FCFF method is based on enterprise-level (unlevered) cash flow forecasts where the resulting discount rate is weighted average cost of capital. The FCFE method is based on equity-level (levered) cash flow forecasts where the resulting discount rate is



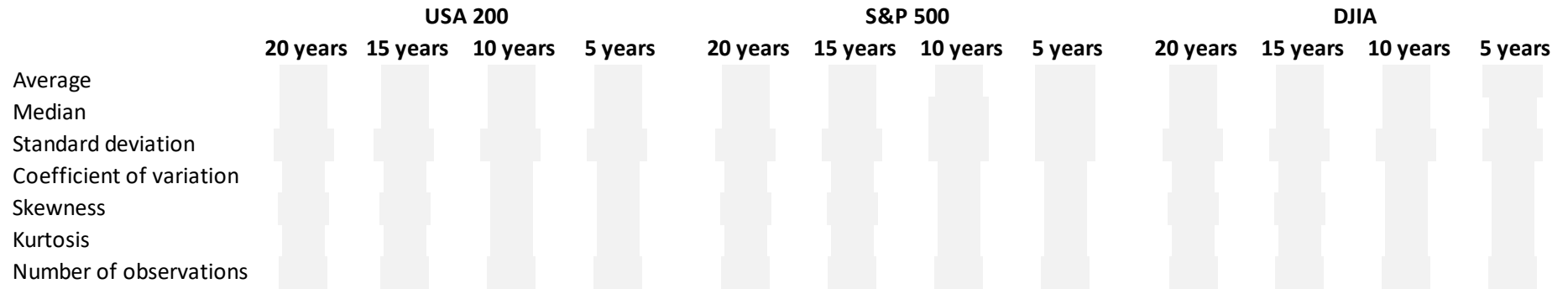
The table below shows our ERP calculation based on the FCFE method. Forecasted cash flows are based on analyst forecasts for a portfolio of stocks that represent our proxy for the broad stock market. The market cap of this portfolio is a sum of the individual market caps of the constituent stocks. Cost of equity represents the discount rate that equates the present value of future cash flows to the market cap. Risk-free rate is represented by the actual yield on 10-year government bonds. We apply [redacted] because the Implied ERP portfolio of companies is a proxy for the aggregate stock market.

Amounts in USD mln	2021	2022	2023	Terminal Value	Cost of equity	
FCFE	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Long-term growth rate				[redacted]		[redacted]
Terminal value				[redacted]		[redacted]
Portion of the year	[redacted]	[redacted]	[redacted]			
Cum. discount periods						
Cost of equity	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Discounted cash flow	[redacted]	[redacted]	[redacted]	[redacted]		
Firm value	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Other LT liabilities	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Minorities & pref stock	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Financial Assets	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Equity Value	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Market Cap	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
Difference	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]

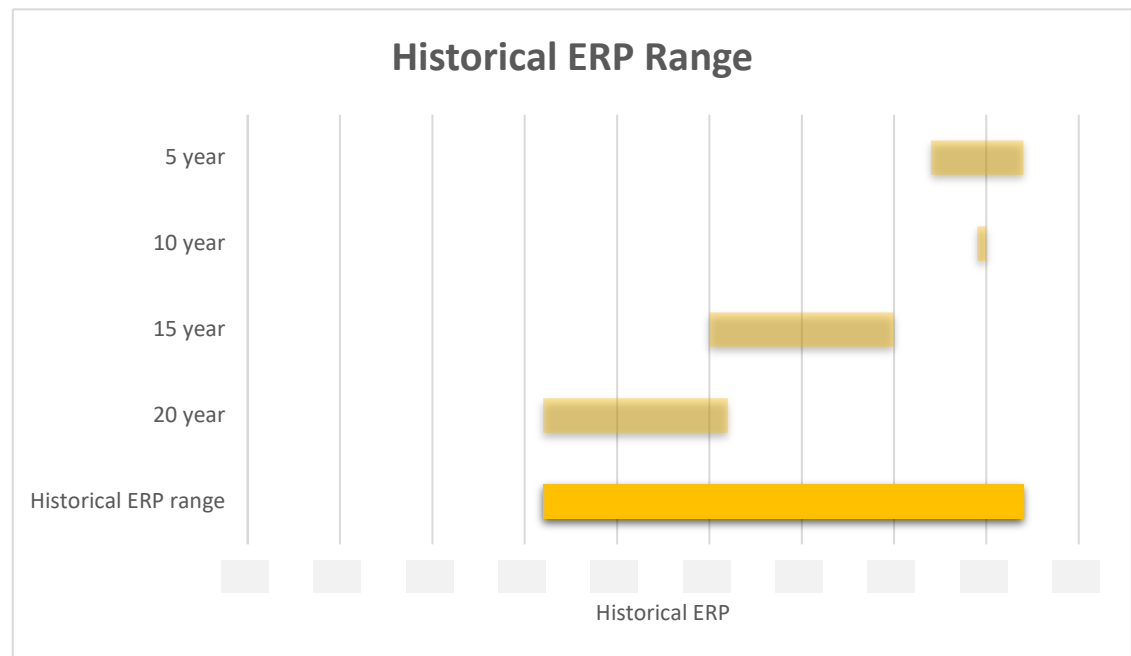


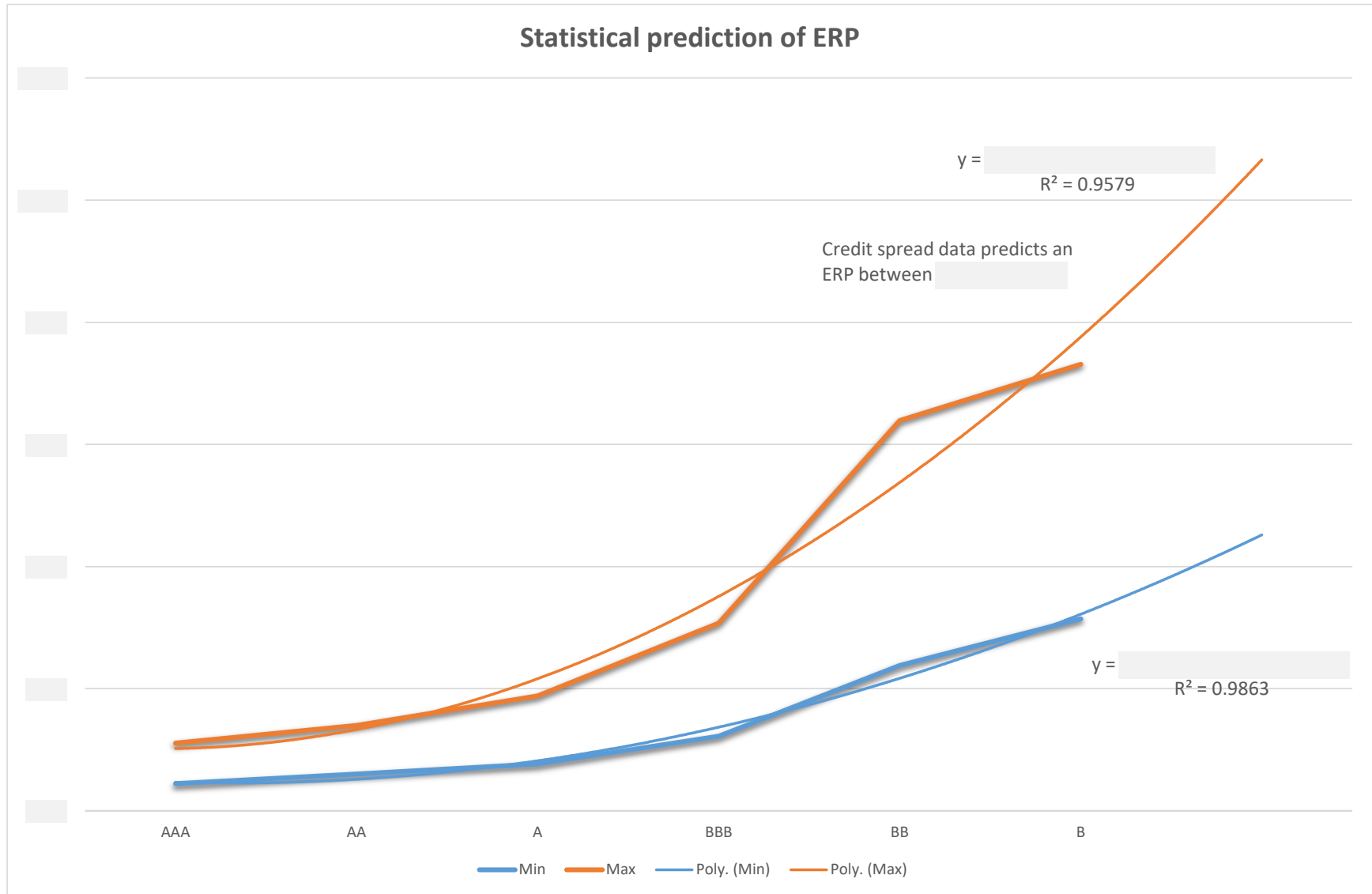
ERP's for the S&P 500 and DJIA indices had a wider range of results than those of the USA 200. This was due in part to differences in the construction of these portfolios and, in particular, to rebalancing rules of the S&P 500 and DJIA indices.

Historical ERP's were not normally distributed for any of the data frequency periods or benchmarks that we tested. The data shows some measure of skew, which suggests that the averages do not represent midpoints. The data also shows kurtosis, also known as "fat tails", which results when a substantial amount of results are high or low relative to the average. We can conclude that the average ERP's probably did not represent midpoints. We assumed the midpoint ERP to occur somewhere between the average and median. The table below shows the statistical results of Historical ERP measurements.



The range of average and median Historical ERP's was approximately [redacted]. The graph to the right shows an approximate range of Historical ERP results.







The statistical results in the table below show that approximately 99.7% of the change in credit spread can be explained by change in default probability. The Significance F statistic suggests that there was less than 0.1% chance that our regression equation did not result in actual historical credit spreads.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.9987
R Square	0.9975
Adjusted R Squ	0.9969
Standard Error	0.0006
Observations	

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression		0.0006	0.0006	1,596	0.0002%
Residual		0.0000	0.0000		
Total		0.0006			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 98.0%</i>	<i>Upper 98.0%</i>
Intercept		0.0005	(4.0895)	1.4982%				
Default probab		0.0025	39.9493	0.0002%				



The graph below shows default probability as columns, and the yield spread and ERP range as lines. Default probability levels are shown on the left axis and the yield spread and ERP rates are shown on the right axis.

