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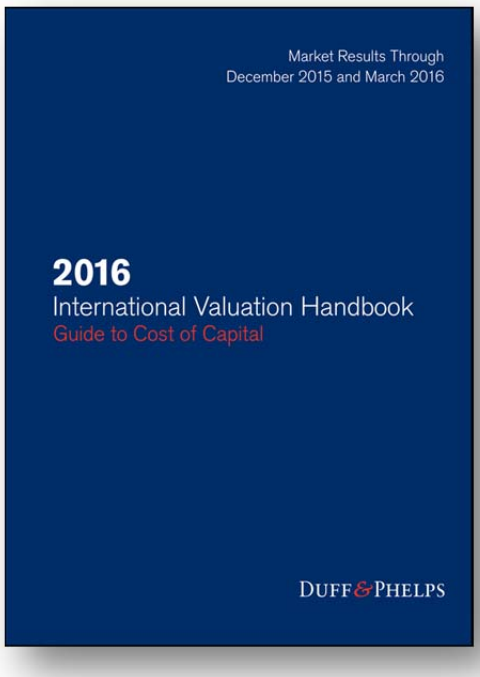
2016 International Valuation Handbook – Guide to Cost of Capital

Wiley & Sons has partnered with Duff & Phelps, the premier global valuation and corporate finance advisor with expertise in complex valuation, dispute and legal management consulting, M&A, restructuring, and compliance and regulatory consulting, to produce a new annual source for this data: the new *International Valuation Handbook – Guide to Cost of Capital.*

The *2016 International Valuation Handbook – Guide to Cost of Capital* provides the same type of rigorous country-level analysis previously published in the former Morningstar/Ibbotson *International Cost of Capital Report* (discontinued), the former Morningstar/Ibbotson *International Cost of Capital Perspectives Report* (discontinued), and the former Morningstar/Ibbotson *International Equity Risk Premia Report* (discontinued). The *2016 International Valuation Handbook – Guide to Cost of Capital* ships in August 2016, with data through December 2015 and March 2016, and includes an optional September Semi-annual Update, with data through June 2016 and September 2016.

The *2016 International Valuation Handbook – Guide to Cost of Capital* provides data and methodology guidance that will enable the reader to assess risk and develop cost of capital estimates on a global scale.

This publication provides country-level country risk premia (CRPs), Relative Volatility (RV) factors, and equity risk premia (ERPs), which can be used to estimate country-level cost of equity capital globally, for up to 188 countries, from the perspective of investors based in up to 56 different countries.*



2016 International Valuation Handbook – Guide to Cost of Capital

Includes optional September Semi-annual Update

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*Depending on the estimation model being employed, and data availability. Some models do not include estimates for all countries.

Table of Contents

Table of contents

The table of contents of last year's *2015 International Valuation Handbook – Guide to Cost of Capital* is provided in the following two pages, for evaluative purposes. The 2016 version of the book ships in August 2016 with data through December 2015 and March 2016, and includes an optional September Semi-annual Update, with data through June 2016 and September 2016.

The data exhibits in the *International Valuation Handbook – Guide to Cost of Capital* include:

- International Equity Risk Premia (ERPs)
- Country Yield Spread Model: Country Risk Premia (CRPs)
- Relative Volatility Model: Relative Volatility (RV) Factors
- Erb-Harvey-Viskanta Country Credit Rating Model: Country Risk Premia (CRPs)

Table of Contents

Acknowledgements xi

Introduction xii
Who Should Use the *2016 International Valuation Handbook – Guide to Cost of Capital* xii
New and Notable xiii
About the *International Valuation Handbook – Guide to Cost of Capital* xiv
ERPs, CRPs, and RVs Are *Different*, and Are Properly Used *Differently* xviii
Risk Premia Over the Risk-free Rate and Risk Premia over CAPM (i.e., size premia)
Measure Different Types of Risks xix

Chapter 1 International Cost of Capital – Overview 1-1
Cost of Capital Defined 1-1
Are Country Risks Real? 1-2
Risks Typically Associated with International Investment 1-5
Does the Currency Used to Project Cash Flows Impact the Discount Rate? 1-11
Summary 1-13

Chapter 2 Strengths and Weaknesses of Commonly Used Models 2-1
World (or Global) CAPM 2-1
Single-country Version of the CAPM 2-4
Damodaran's Local Country Risk Exposure Model 2-5
Alternative Risk Measures (downside risk) 2-6
What Model Should I Use? 2-11

Chapter 3 International Equity Risk Premia 3-1
Description of Data 3-1
Methodology 3-4
Description of Data Series Used 3-8
Currency Translation 3-15
How to Use the International ERP Tables 3-17
Appendix 3A: Additional Sources of International ERP Data 3A-1
Dimson, Marsh, and Staunton Equity Risk Premia Data 3A-1
Pablo Fernandez Equity Risk Premia and Risk-free Rate Surveys 3A-7
Appendix 3B: Additional Sources of Equity Risk Premium Data – Australia 3B-1
Overview of the Australian Dividend Imputation Tax System 3B-1
Australian Equity Risk Premium Under Three Investor Perspectives 3B-2

Chapter 4 Country Yield Spread Model 4-1
Introduction 4-1
Brief Background on Euromoney's ECR Score 4-2
Investor Perspectives 4-3
Country Yield Spread Model 4-4

Methodology – Country Yield Spread Model 4-6
Using Country Yield Spread Model CRPs to Estimate Base Country-level Cost of Equity Capital 4-10
Using Country Yield Spread Model CRPs to Estimate Cost of Equity Capital for Use in Evaluating a Subject Business, Asset, or Project 4-12

Chapter 5 Relative Volatility Model 5-1
Relative Volatility Model 5-1
Investor Perspectives 5-2
Methodology – Relative Volatility Model 5-3
Using Relative Volatility Model RV Factors to Estimate Base Country-level Cost of Equity Capital 5-5
Using Relative Volatility Model RV Factors to Estimate Cost of Equity Capital for Use in Evaluating a Subject Business, Asset, or Project 5-7

Chapter 6 Erb-Harvey-Viskanta Country Credit Rating Model 6-1
A Notable Difference with Previous Reports: Country Risk Premia (CRPs) 6-2
Data Sources 6-3
The CCR Model 6-5
Different Investor Perspectives 6-6
Global Cost of Equity Capital – High-level Comparisons 6-8
Presentation of Cost of Capital Data 6-14
Country Risk Premia (CRP) Defined 6-15
How CRPs Are Calculated 6-15
Using CCR Model CRPs to Estimate Base Country-level Cost of Equity Capital 6-17
Using CCR Model CRPs to Estimate Cost of Equity Capital for Use in Evaluating a Subject Business, Asset, or Project 6-20

Chapter 7 Firm Size and the Cost of Equity Capital in Europe 7-1
Differences in Returns Between Large and Small Companies in Europe 7-1
Countries Included 7-2
Data Sources 7-2
Regional Differences 7-3
Two Types of Risk Premia Examined 7-5
Conclusion 7-11

Data Exhibit 1: International Equity Risk Premia (ERPs)

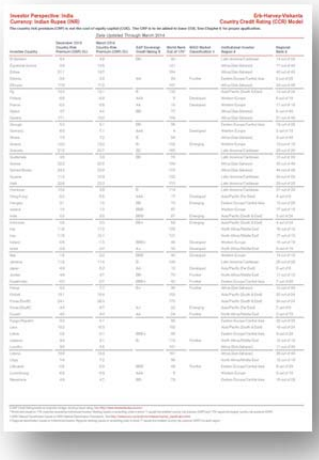
Data Exhibit 2: Country Yield Spread Model: Country Risk Premia (CRPs)

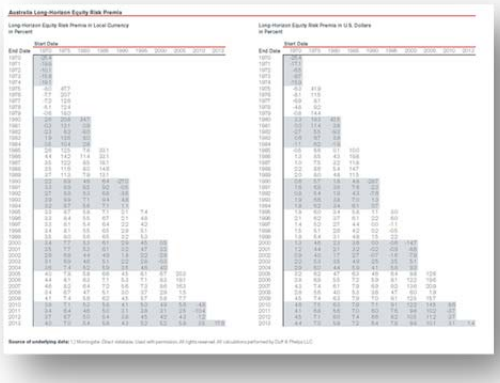
Data Exhibit 3: Relative Volatility Model: Relative Volatility (RV) Factors

Data Exhibit 4: Erb-Harvey-Viskanta Country Credit Rating Model: Country Risk Premia (CRPs)

Data Exhibit 5: Study of Differences in Returns Between Large and Small Companies in Europe

Sample Data Exhibits





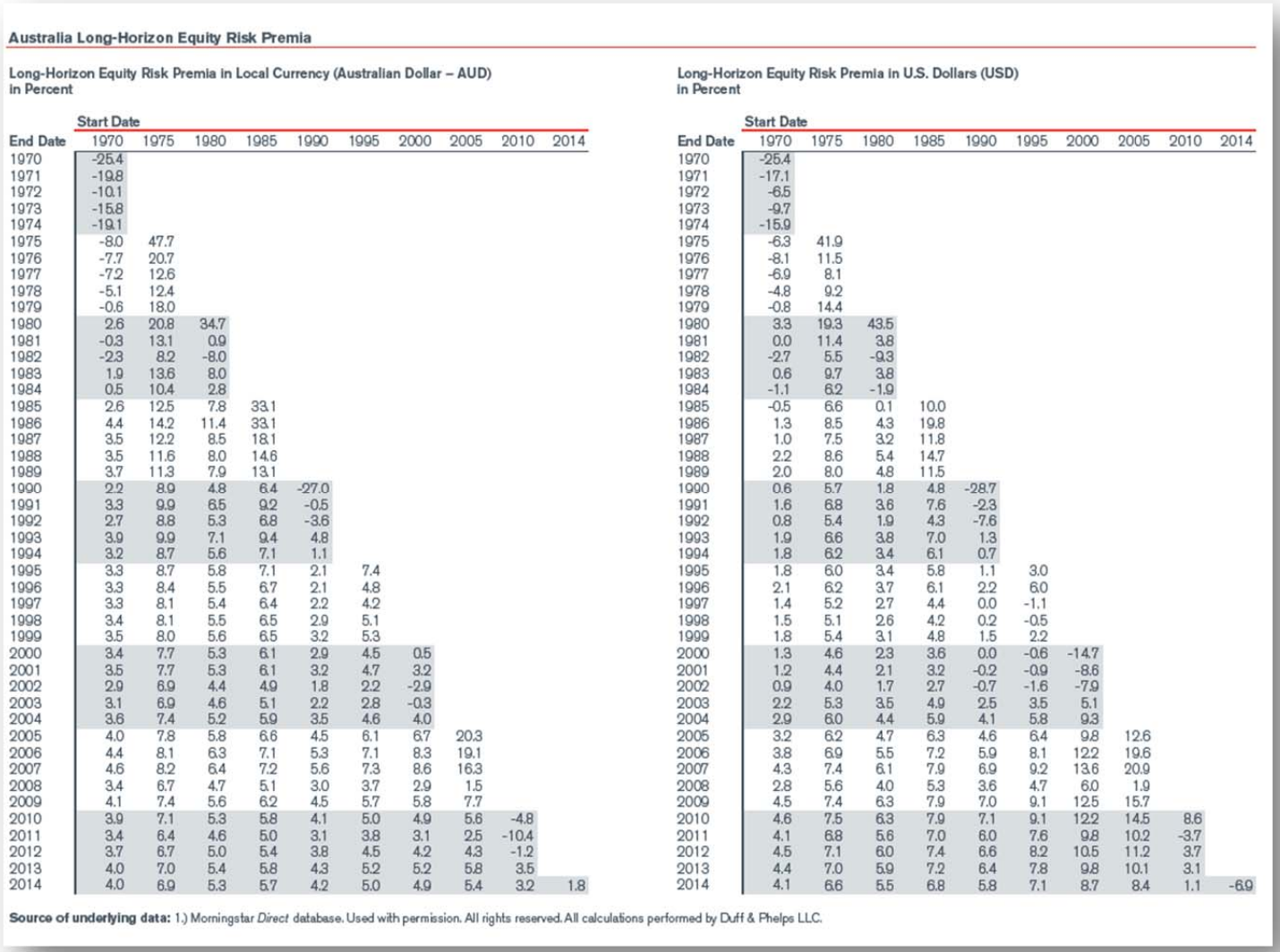
Sample Data Exhibits

The *2016 International Valuation Handbook – Guide to Cost of Capital* provides country-level country risk premia (CRPs), Relative Volatility (RV) factors, and equity risk premia (ERPs), which can be used to estimate country-level cost of equity capital globally, for up to 188 countries, from the perspective of investors based in up to 56 different countries.

Representative data exhibits from last year's *2015 International Valuation Handbook – Guide to Cost of Capital* is provided in the following seven pages, for evaluative purposes. The 2016 version of the book ships in August 2016 with data through December 2015 and March 2016.

Sample Data Exhibits

Country-level Equity Risk Premia (ERPs)



Australia Long-Horizon Equity Risk Premia

Long-Horizon Equity Risk Premia in Local Currency (Australian Dollar – AUD)
in Percent

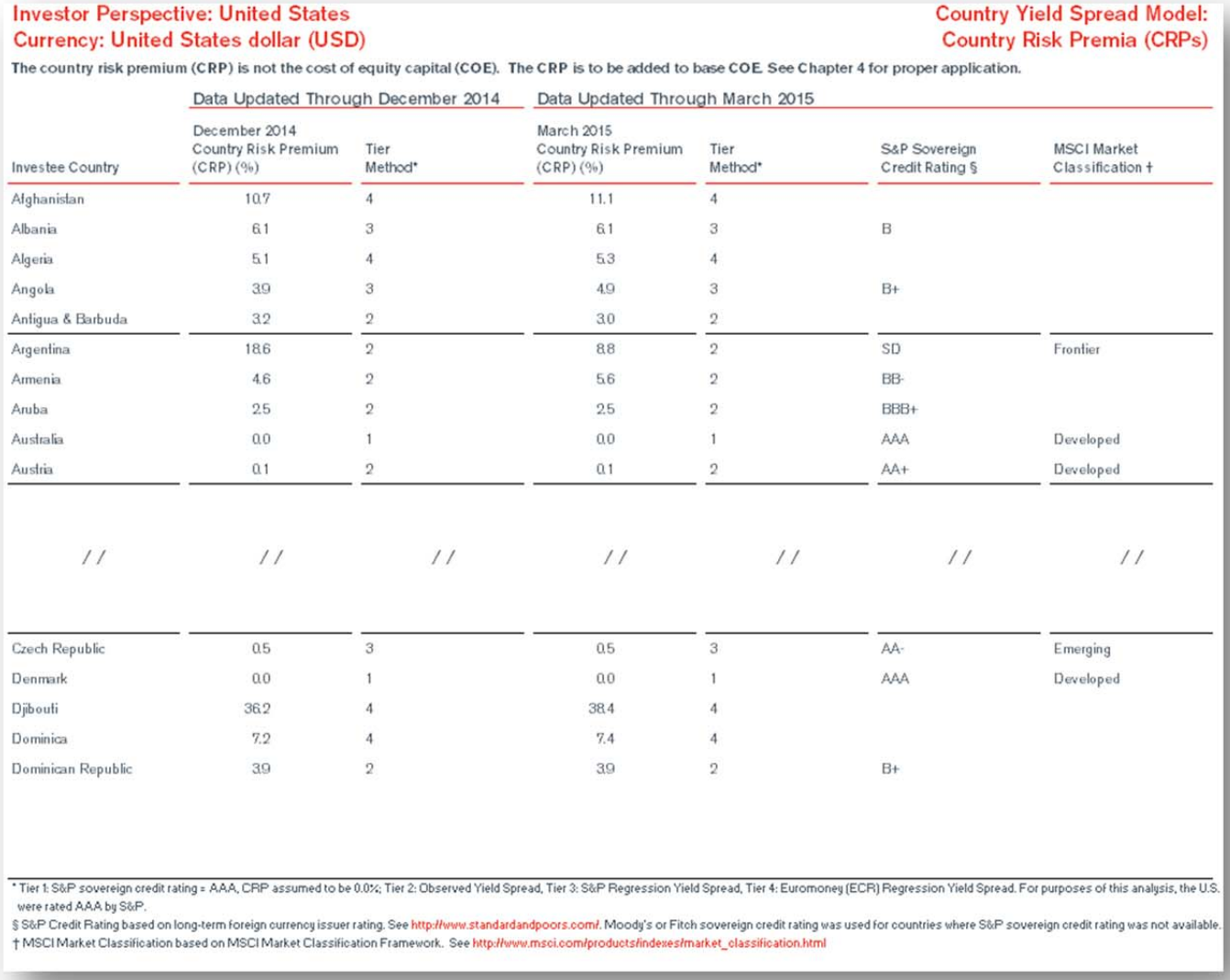
End Date	Start Date 1970	1975	1980	1985	1990	1995	2000	2005	2010	2014
1970	-25.4									
1971	-19.8									
1972	-10.1									
1973	-15.8									
1974	-19.1									
1975	-8.0	47.7								
1976	-7.7	20.7								
1977	-7.2	12.6								
1978	-5.1	12.4								
1979	-0.6	18.0								
1980	2.6	20.8	34.7							
1981	-0.3	13.1	0.9							
1982	-2.3	8.2	-8.0							
1983	1.9	13.6	8.0							
1984	0.5	10.4	2.8							
1985	2.6	12.5	7.8	33.1						
1986	4.4	14.2	11.4	33.1						
1987	3.5	12.2	8.5	18.1						
1988	3.5	11.6	8.0	14.6						
1989	3.7	11.3	7.9	13.1						
1990	2.2	8.9	4.8	6.4	-27.0					
1991	3.3	9.9	6.5	9.2	-0.5					
1992	2.7	8.8	5.3	6.8	-3.6					
1993	3.9	9.9	7.1	9.4	4.8					
1994	3.2	8.7	5.6	7.1	1.1					
1995	3.3	8.7	5.8	7.1	2.1	7.4				
1996	3.3	8.4	5.5	6.7	2.1	4.8				
1997	3.3	8.1	5.4	6.4	2.2	4.2				
1998	3.4	8.1	5.5	6.5	2.9	5.1				
1999	3.5	8.0	5.6	6.5	3.2	5.3				
2000	3.4	7.7	5.3	6.1	2.9	4.5	0.5			
2001	3.5	7.7	5.3	6.1	3.2	4.7	3.2			
2002	2.9	6.9	4.4	4.9	1.8	2.2	-2.9			
2003	3.1	6.9	4.6	5.1	2.2	2.8	-0.3			
2004	3.6	7.4	5.2	5.9	3.5	4.6	4.0			
2005	4.0	7.8	5.8	6.6	4.5	6.1	6.7	20.3		
2006	4.4	8.1	6.3	7.1	5.3	7.1	8.3	19.1		
2007	4.6	8.2	6.4	7.2	5.6	7.3	8.6	16.3		
2008	3.4	6.7	4.7	5.1	3.0	3.7	2.9	1.5		
2009	4.1	7.4	5.6	6.2	4.5	5.7	5.8	7.7		
2010	3.9	7.1	5.3	5.8	4.1	5.0	4.9	5.6	-4.8	
2011	3.4	6.4	4.6	5.0	3.1	3.8	3.1	2.5	-10.4	
2012	3.7	6.7	5.0	5.4	3.8	4.5	4.2	4.3	-1.2	
2013	4.0	7.0	5.4	5.8	4.3	5.2	5.2	5.8	3.5	
2014	4.0	6.9	5.3	5.7	4.2	5.0	4.9	5.4	3.2	1.8

Long-Horizon Equity Risk Premia in U.S. Dollars (USD)
in Percent

End Date	Start Date 1970	1975	1980	1985	1990	1995	2000	2005	2010	2014
1970	-25.4									
1971	-17.1									
1972	-6.5									
1973	-9.7									
1974	-15.9									
1975	-6.3	41.9								
1976	-8.1	11.5								
1977	-6.9	8.1								
1978	-4.8	9.2								
1979	-0.8	14.4								
1980	3.3	19.3	43.5							
1981	0.0	11.4	3.8							
1982	-2.7	5.5	-9.3							
1983	0.6	9.7	3.8							
1984	-1.1	6.2	-1.9							
1985	-0.5	6.6	0.1	10.0						
1986	1.3	8.5	4.3	19.8						
1987	1.0	7.5	3.2	11.8						
1988	2.2	8.6	5.4	14.7						
1989	2.0	8.0	4.8	11.5						
1990	0.6	5.7	1.8	4.8	-28.7					
1991	1.6	6.8	3.6	7.6	-2.3					
1992	0.8	5.4	1.9	4.3	-7.6					
1993	1.9	6.6	3.8	7.0	1.3					
1994	1.8	6.2	3.4	6.1	0.7					
1995	1.8	6.0	3.4	5.8	1.1	3.0				
1996	2.1	6.2	3.7	6.1	2.2	6.0				
1997	1.4	5.2	2.7	4.4	0.0	-1.1				
1998	1.5	5.1	2.6	4.2	0.2	-0.5				
1999	1.8	5.4	3.1	4.8	1.5	2.2				
2000	1.3	4.6	2.3	3.6	0.0	-0.6	-14.7			
2001	1.2	4.4	2.1	3.2	-0.2	-0.9	-8.6			
2002	0.9	4.0	1.7	2.7	-0.7	-1.6	-7.9			
2003	2.2	5.3	3.5	4.9	2.5	3.5	5.1			
2004	2.9	6.0	4.4	5.9	4.1	5.8	9.3			
2005	3.2	6.2	4.7	6.3	4.6	6.4	9.8	12.6		
2006	3.8	6.9	5.5	7.2	5.9	8.1	12.2	19.6		
2007	4.3	7.4	6.1	7.9	6.9	9.2	13.6	20.9		
2008	2.8	5.6	4.0	5.3	3.6	4.7	6.0	1.9		
2009	4.5	7.4	6.3	7.9	7.0	9.1	12.5	15.7		
2010	4.6	7.5	6.3	7.9	7.1	9.1	12.2	14.5	8.6	
2011	4.1	6.8	5.6	7.0	6.0	7.6	9.8	10.2	-3.7	
2012	4.5	7.1	6.0	7.4	6.6	8.2	10.5	11.2	3.7	
2013	4.4	7.0	5.9	7.2	6.4	7.8	9.8	10.1	3.1	
2014	4.1	6.6	5.5	6.8	5.8	7.1	8.7	8.4	1.1	-6.9

Source of underlying data: 1.) Morningstar *Direct* database. Used with permission. All rights reserved. All calculations performed by Duff & Phelps LLC.

Country Yield Spread Model: Country Risk Premia (CRPs)*



Investor Perspective: United States
Currency: United States dollar (USD)

Country Yield Spread Model: Country Risk Premia (CRPs)

The country risk premium (CRP) is not the cost of equity capital (COE). The CRP is to be added to base COE. See Chapter 4 for proper application.

	Data Updated Through December 2014		Data Updated Through March 2015			
Investee Country	December 2014 Country Risk Premium (CRP) (%)	Tier Method*	March 2015 Country Risk Premium (CRP) (%)	Tier Method*	S&P Sovereign Credit Rating §	MSCI Market Classification †
Afghanistan	10.7	4	11.1	4		
Albania	6.1	3	6.1	3	B	
Algeria	5.1	4	5.3	4		
Angola	3.9	3	4.9	3	B+	
Antigua & Barbuda	3.2	2	3.0	2		
Argentina	18.6	2	8.8	2	SD	Frontier
Armenia	4.6	2	5.6	2	BB-	
Aruba	2.5	2	2.5	2	BBB+	
Australia	0.0	1	0.0	1	AAA	Developed
Austria	0.1	2	0.1	2	AA+	Developed
//	//	//	//	//	//	//
Czech Republic	0.5	3	0.5	3	AA-	Emerging
Denmark	0.0	1	0.0	1	AAA	Developed
Djibouti	36.2	4	38.4	4		
Dominica	7.2	4	7.4	4		
Dominican Republic	3.9	2	3.9	2	B+	

* Tier 1: S&P sovereign credit rating = AAA, CRP assumed to be 0.0%; Tier 2: Observed Yield Spread, Tier 3: S&P Regression Yield Spread, Tier 4: Euromoney (ECR) Regression Yield Spread. For purposes of this analysis, the U.S. were rated AAA by S&P.
§ S&P Credit Rating based on long-term foreign currency issuer rating. See http://www.standardandpoors.com/. Moody's or Fitch sovereign credit rating was used for countries where S&P sovereign credit rating was not available.
† MSCI Market Classification based on MSCI Market Classification Framework. See http://www.msci.com/products/indexes/market_classification.html

*This is an abbreviated version of the Country Yield Spread Model: Country Risk Premium (CRP) exhibit from the *International Valuation Handbook – Guide to Cost of Capital*. The hardcover book's Country Yield Model CRP exhibits provide country-level CRP estimates for up 188 different countries, from the perspective of investors in the U.S. and Germany.

Relative Standard Deviation Model: Relative Volatility (RV) Factors*

Investor Perspective: Germany
Currency: Euro (EUR)

Relative Volatility Model:
Relative Volatility RV Factors

The RV Factor is to be multiplied to the ERP. See Chapter 5 for proper application.

Data Updated Through March 2015

Investee Country	December 2014 Relative Volatility Factor (RV)*	March 2015 Relative Volatility Factor (RV)*	S&P Sovereign Credit Rating §	MSCI Market Classification †
Argentina	2.4	2.5	SD	Frontier
Australia	1.0	1.0	AAA	Developed
Austria	1.1	1.2	AA+	Developed
Bahrain	0.9	0.9	BBB-	Frontier
Bangladesh	2.0	1.8	BB-	Frontier
Belgium	0.8	0.8	AA	Developed
Botswana	N/A	1.0	A-	Frontier
Brazil	1.2	1.1	BBB-	Emerging
Bulgaria	1.5	1.4	BB+	Frontier
Canada	1.0	1.0	AAA	Developed
//	//	//	//	//
Nigeria	1.5	1.4	B+	Frontier
Norway	1.0	1.0	AAA	Developed
Oman	0.9	0.9	A-	Frontier
Pakistan	1.3	1.3	B-	Frontier
Peru	1.3	1.2	BBB+	Emerging

* S&P sovereign credit rating = AAA, RV assumed to be 1.0. For purposes of this analysis, the U.S. is being treated as if it were rated AAA by S&P.
§ S&P Credit Rating based on long-term foreign currency issuer rating. See http://www.standardandpoors.com/. Moody's or Fitch sovereign credit rating was used for countries where S&P sovereign credit rating was not available.
† MSCI Market Classification based on MSCI Market Classification Framework. See http://www.msci.com/products/indexes/market_classification.html

*This is an abbreviated version of the Relative Standard Deviation Model: Relative Volatility (RV) Factors exhibit from the *International Valuation Handbook – Guide to Cost of Capital.* The hardcover book's Relative Standard Deviation Model RV Factor exhibits provide country-level relative volatility factor estimates for up 75 different countries, from the perspective of investors in the U.S. and Germany.

Country Credit Rating Model: Country Risk Premia (CRPs)*

Investor Perspective: China
Currency: Chinese Yuan Renminbi (CNY)

Erb-Harvey-Viskanta
Country Credit Rating (CCR) Model

The country risk premium (CRP) is not the cost of equity capital (COE). The CRP is to be added to base COE. See Chapter 6 for proper application.

Data Updated Through March 2015

Investee Country	December 2014 Country Risk Premium (CRP) (%)	March 2015 Country Risk Premium (CRP) (%)	S&P Sovereign Credit Rating §	World Rank Out of 179*	MSCI Market Classification †	Institutional Investor Region ‡	Regional Rank ‡
Afghanistan	34.1	31.0		173		Asia/Pacific (South & East)	23 out of 24
Albania	13.7	13.4	B	91		Eastern Europe/Central Asia	20 out of 29
Algeria	7.6	7.3		71		North Africa/Middle East	9 out of 19
Angola	12.6	12.8	B+	87		Africa (Sub-Saharan)	7 out of 49
Argentina	19.1	21.4	SD	139	Frontier	Latin America/Caribbean	25 out of 29
Armenia	12.8	13.8		92		Eastern Europe/Central Asia	21 out of 29
Australia	-2.7	-2.7	AAA	12	Developed	Asia/Pacific (Far East)	2 out of 8
Austria	-2.6	-2.6	AA+	13	Developed	Western Europe	9 out of 19
Azerbaijan	7.3	8.0	BBB-	72		Eastern Europe/Central Asia	15 out of 29
Bahamas	4.5	4.7	BBB	52		Latin America/Caribbean	9 out of 29
//	//	//	//	//	//	//	//
Djibouti	21.4	20.9		133		Africa (Sub-Saharan)	22 out of 49
Dominican Republic	12.0	12.5	B+	84		Latin America/Caribbean	17 out of 29
East Timor	25.7	24.5		152		Asia/Pacific (South & East)	20 out of 24
Ecuador	16.8	17.5	B+	119		Latin America/Caribbean	20 out of 29
Egypt	17.5	16.9	B-	112	Emerging	North Africa/Middle East	15 out of 19

§ S&P Credit Rating based on long-term foreign currency issuer rating. See http://www.standardandpoors.com/.
* World rank based on 179 countries covered by Institutional Investor. Ranking based on ascending order in which '1' equals the smallest country risk premium (CRP) and '179' equals the largest country risk premium (CRP).
† MSCI Market Classification based on MSCI Market Classification Framework. See http://www.msci.com/products/indexes/market_classification.html
‡ Regional classification based on Institutional Investor. Regional rankings based on ascending order in which '1' equals the smallest country risk premium (CRP) for each region.

*This is an abbreviated version of the Country Credit Rating Model: Country Risk Premium (CRP) exhibit from the *International Valuation Handbook – Guide to Cost of Capital*. The hardcover book's Country Credit Rating Model CRP exhibits provide country-level CRP estimates for up 179 different countries, from the perspective of 56 different countries.

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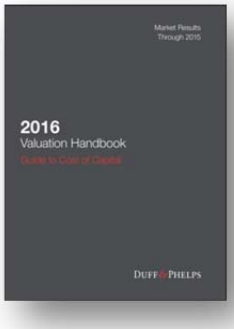
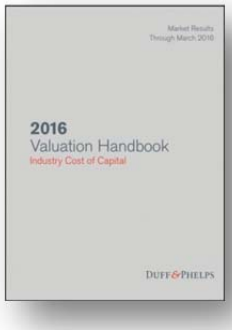


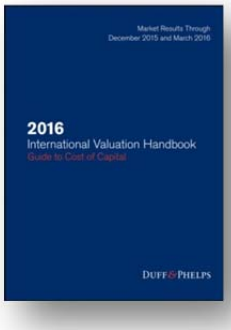
Company-level U.S. Data

2014, 2015, and 2016 editions available



Industry-level U.S. Data

2014, 2015, and 2016 editions available



International Country-level data

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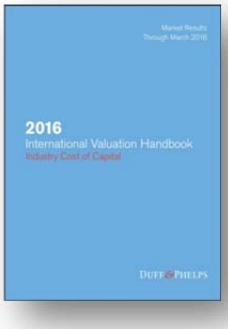

International Industry-level data

2015 edition available; 2016 edition available late summer 2016

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