

## Market Risk Premium used in 71 countries in 2016: a survey with 6,932 answers

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### ABSTRACT

This paper contains the statistics of the Equity Premium or Market Risk Premium (MRP) used in 2016 for **71 countries**. We got answers for more countries, but we only report the results for 71 countries with more than 8 answers.

54% of the MRP used in 2016 decreased (vs. 2015) and 38% increased.

Most previous surveys have been interested in the Expected MRP, but this survey asks about the Required MRP. The paper also contains the references used to justify the MRP, and comments from 46 persons.

**JEL Classification:** G12, G31, M21

**Keywords:** equity premium; required equity premium; expected equity premium; historical equity premium

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## 1. Market Risk Premium (MRP) used in 2016 in 71 countries

We sent a short email (see exhibit 1) on April 2016 to more than 23,000 email addresses of finance and economic professors, analysts and managers of companies obtained from previous correspondence, papers and webs of companies and universities. We asked about the Market Risk Premium (MRP) used *“to calculate the required return to equity in different countries”*. We also asked about *“Books or articles that I use to support this number”*.

By May 4, 2016, we had received 2,732 emails with 6,734 specific MRP used in 2016.<sup>1</sup> We considered 86 of them as outliers because they provided a very small MRP (for example, -4% for the USA) or a very high MRP (for example, 30% for the USA). Other 112 persons answered that they do not use MRP for different reasons (see table 1). We would like to sincerely thank everyone who took the time to answer us.

Table 1. MRP used in 2016: 6932 answers

	Professors	Analyst	Companies	Financial companies	Other	Total
Answers reported (MRP figures)	3.006	430	1.337	983	978	6.734
Outliers	2	4	23	20	37	86
Answers that do not provide a figure	7	24	34	43	4	112
Total	3.015	458	1.394	1.046	1.019	6.932

Some answers that do not provide a figure: *“We use a minimum IRR”*; *“We use multiples”*; *“MRP is a concept that we do not use”*; *“It is confidential”*; *“The CAPM is not very useful”*; *“I think about premia for particular stocks”*; *“I teach derivatives: I did not have to use a MRP”*; *“The MRP changes every day”*.

**Table 2** contains the statistics of the MRP used in 2016 for 71 countries. We got answers for more countries, but we only report the results for 71 countries with more than 8 answers. Fernandez et al (2011a)<sup>2</sup> is an analysis of the answers for the USA; it also shows the evolution of the Market Risk Premium used for the USA in 2011, 2010, 2009 and 2008 according to previous surveys (Fernandez et al, 2009, 2010a and 2010b). Fernandez et al (2011b)<sup>3</sup> is an analysis of the answers for Spain.

**Figures 1 and 2** are graphic representations of the MRPs reported in table 2.

Surveys of previous years		
2015	Risk-Free Rate and MRP used for 41 countries in 2015	<a href="http://ssrn.com/abstract=2598104">http://ssrn.com/abstract=2598104</a>
2014	MRP used in 88 countries in 2014	<a href="http://ssrn.com/abstract=2450452">http://ssrn.com/abstract=2450452</a>
2013	MRP and Risk Free Rate used for 51 countries in 2013	<a href="http://ssrn.com/abstract=914160">http://ssrn.com/abstract=914160</a>
2012	MRP used in 82 countries in 2012	<a href="http://ssrn.com/abstract=2084213">http://ssrn.com/abstract=2084213</a>
2011	MRP used in 56 countries in 2011	<a href="http://ssrn.com/abstract=1822182">http://ssrn.com/abstract=1822182</a>
2010	MRP used in 22 countries in 2010	<a href="http://ssrn.com/abstract=1609563">http://ssrn.com/abstract=1609563</a>

<sup>1</sup> 1,217 emails contained MRP for more than one country.

<sup>2</sup> Fernandez, P., J. Aguirreamalloa and L. Corres (2011a), “US Market Risk Premium Used in 2011 by Professors, Analysts and Companies: A Survey...”, downloadable in <http://ssrn.com/abstract=1805852>

<sup>3</sup> Fernandez, P., J. Aguirreamalloa and L. Corres (2011b), “The Equity Premium in Spain: Survey 2011 (in Spanish)”, downloadable in <http://ssrn.com/abstract=1822422>

Table 2. Market Risk Premium (%) used for 71 countries in 2016

	<b>Average</b>	<b>Median</b>	<b>St Dev</b>	<b>Max</b>	<b>min</b>	<b>Q1</b>	<b>Q3</b>	<b>N</b>
1 USA	5,3%	5,0%	1,3%	20,0%	1,5%	4,5%	6,0%	2536
2 Spain	6,2%	6,0%	1,4%	12,0%	1,5%	5,0%	6,8%	817
3 Germany	5,3%	5,0%	1,7%	12,4%	1,2%	4,0%	6,0%	360
4 UK	5,3%	5,0%	1,4%	12,8%	1,5%	4,5%	6,0%	221
5 Italy	5,6%	5,5%	1,5%	10,1%	2,0%	4,8%	6,0%	152
6 Canada	5,4%	5,2%	1,3%	10,5%	3,0%	4,6%	6,0%	127
7 Brazil	8,2%	7,0%	4,9%	30,0%	1,8%	5,5%	8,7%	107
8 France	5,8%	5,5%	1,6%	11,4%	2,0%	5,0%	6,7%	105
9 Mexico	7,4%	7,0%	2,3%	15,0%	3,0%	6,0%	9,0%	103
10 South Africa	6,3%	6,0%	1,5%	11,8%	3,0%	5,5%	7,0%	99
11 China	8,3%	7,0%	4,4%	30,0%	3,8%	6,0%	10,0%	96
12 Netherlands	5,1%	5,0%	1,2%	11,6%	2,5%	4,5%	5,9%	93
13 Switzerland	5,1%	5,0%	1,1%	9,6%	3,0%	4,5%	5,6%	88
14 Australia	6,0%	6,0%	1,6%	15,0%	3,0%	5,0%	6,2%	87
15 India	8,1%	8,0%	2,4%	16,0%	2,3%	6,6%	9,0%	82
16 Russia	7,9%	7,0%	3,5%	25,0%	2,7%	6,0%	9,0%	81
17 Chile	6,1%	6,0%	1,6%	15,0%	3,0%	5,5%	7,0%	72
18 Sweden	5,2%	5,0%	1,0%	9,0%	3,0%	4,5%	5,9%	72
19 Austria	5,4%	5,3%	1,4%	14,3%	2,5%	5,0%	6,0%	71
20 Belgium	5,6%	5,5%	1,1%	8,1%	3,6%	5,0%	6,4%	71
21 Norway	5,5%	5,0%	1,8%	14,0%	3,0%	4,5%	6,0%	70
22 Denmark	5,3%	5,0%	1,7%	14,0%	2,0%	4,4%	6,0%	63
23 Japan	5,4%	5,0%	2,3%	16,7%	2,0%	4,0%	6,8%	58
24 Argentina	11,8%	11,0%	4,4%	28,7%	5,0%	9,0%	14,0%	57
25 Colombia	8,1%	7,8%	3,9%	20,5%	2,0%	6,5%	9,0%	56
26 Portugal	7,9%	8,0%	2,1%	14,0%	4,0%	6,6%	9,0%	55
27 Finland	5,5%	5,0%	1,6%	12,0%	3,0%	4,7%	6,0%	51
28 Poland	6,2%	5,8%	1,5%	10,0%	4,4%	5,0%	7,6%	50
29 Peru	7,8%	7,5%	2,6%	15,0%	3,5%	6,3%	8,3%	44
30 New Zealand	5,8%	6,0%	1,4%	8,0%	2,0%	5,0%	7,0%	42
31 Greece	13,0%	12,4%	5,2%	23,0%	6,5%	8,5%	17,9%	41
32 Luxembourg	4,7%	5,0%	1,1%	7,0%	2,0%	4,0%	5,4%	38
33 Israel	5,9%	6,0%	2,2%	15,0%	2,5%	5,0%	7,0%	37
34 Turkey	8,1%	8,0%	3,4%	18,0%	2,5%	5,5%	10,5%	37
35 Czech Republic	6,3%	6,5%	1,0%	8,0%	4,3%	5,5%	7,3%	32
36 Egypt	13,8%	13,0%	6,2%	30,3%	3,5%	9,0%	16,4%	32
37 Indonesia	8,0%	8,0%	2,1%	14,5%	4,5%	6,1%	9,3%	29
38 Ireland	6,6%	5,8%	2,2%	12,3%	4,0%	5,0%	8,2%	28
39 Pakistan	9,8%	6,5%	5,4%	18,0%	2,5%	6,0%	16,0%	26
40 Taiwan	7,9%	7,2%	2,1%	15,0%	4,3%	7,0%	8,4%	26
41 Korea	6,7%	7,0%	1,8%	11,1%	2,0%	6,0%	7,3%	25
42 Singapore	5,9%	6,0%	1,3%	9,6%	3,9%	5,5%	6,3%	25
43 Liechtenstein	4,8%	5,0%	1,0%	7,3%	3,0%	4,4%	5,0%	24
44 Hong Kong	7,6%	6,9%	2,6%	12,0%	3,5%	5,5%	10,0%	21

Table 2 (cont). Market Risk Premium (%) used for 71 countries in 2016

		<b>Average</b>	<b>Median</b>	<b>St Dev</b>	<b>Max</b>	<b>min</b>	<b>Q1</b>	<b>Q3</b>	<b>N</b>
45	Malaysia	6,5%	6,8%	1,6%	8,8%	3,4%	6,0%	8,0%	21
46	Hungary	8,1%	8,0%	2,5%	13,8%	5,0%	6,0%	10,0%	19
47	Thailand	8,4%	8,0%	1,9%	15,1%	6,5%	7,1%	9,0%	19
48	Kazakhstan	6,9%	7,0%	1,4%	9,2%	4,7%	6,0%	8,0%	18
49	Croatia	7,5%	6,5%	2,1%	10,1%	4,4%	5,5%	9,6%	17
50	Bulgaria	8,2%	8,3%	1,8%	12,0%	5,0%	7,0%	9,2%	16
51	Romania	7,4%	7,0%	1,7%	10,0%	5,0%	6,1%	8,4%	16
52	Saudi Arabia	6,6%	6,5%	1,3%	10,6%	5,5%	5,5%	7,1%	15
53	Ecuador	11,8%	12,6%	5,2%	20,0%	5,0%	6,6%	16,3%	14
54	Vietnam	9,9%	9,9%	3,0%	15,0%	3,9%	8,0%	12,0%	14
55	Nigeria	11,1%	10,0%	3,9%	20,0%	6,9%	8,5%	12,0%	13
56	United Arab Emir.	7,9%	7,5%	1,2%	9,7%	5,7%	7,0%	9,0%	12
57	Bolivia	10,7%	11,8%	2,5%	15,1%	7,5%	8,3%	12,0%	11
58	Philippines	8,1%	8,0%	1,3%	10,0%	6,4%	7,1%	9,2%	11
59	Kuwait	6,7%	6,8%	1,6%	10,6%	5,0%	5,5%	7,0%	10
60	Senegal	9,9%	10,0%	2,7%	13,2%	5,0%	8,5%	12,3%	10
61	Bahrain	7,7%	8,3%	2,2%	11,1%	5,5%	5,5%	9,6%	9
62	Slovenia	7,1%	6,0%	2,4%	10,0%	3,6%	5,5%	9,6%	9
63	Ukraine	14,6%	13,8%	5,0%	21,7%	8,0%	12,0%	18,0%	9
64	Costa Rica	9,2%	10,0%	2,4%	12,0%	3,8%	8,8%	10,1%	8
65	Malta	6,8%	8,1%	2,5%	9,3%	3,1%	5,3%	8,1%	8
66	Oman	6,9%	7,1%	2,0%	11,1%	5,0%	5,0%	7,3%	8
67	Panama	9,4%	9,2%	1,8%	11,3%	6,0%	9,1%	10,5%	8
68	Qatar	7,5%	7,0%	1,1%	10,1%	7,0%	7,0%	7,1%	8
69	Serbia	11,3%	12,4%	3,0%	13,2%	5,5%	11,1%	13,2%	8
70	Uruguay	8,2%	9,2%	2,1%	10,4%	5,0%	6,8%	9,6%	8
71	Venezuela	15,3%	17,8%	6,5%	21,7%	6,0%	11,0%	19,8%	8

Figure 1. Market Risk Premium used in 2016 for some countries (plot of answers)

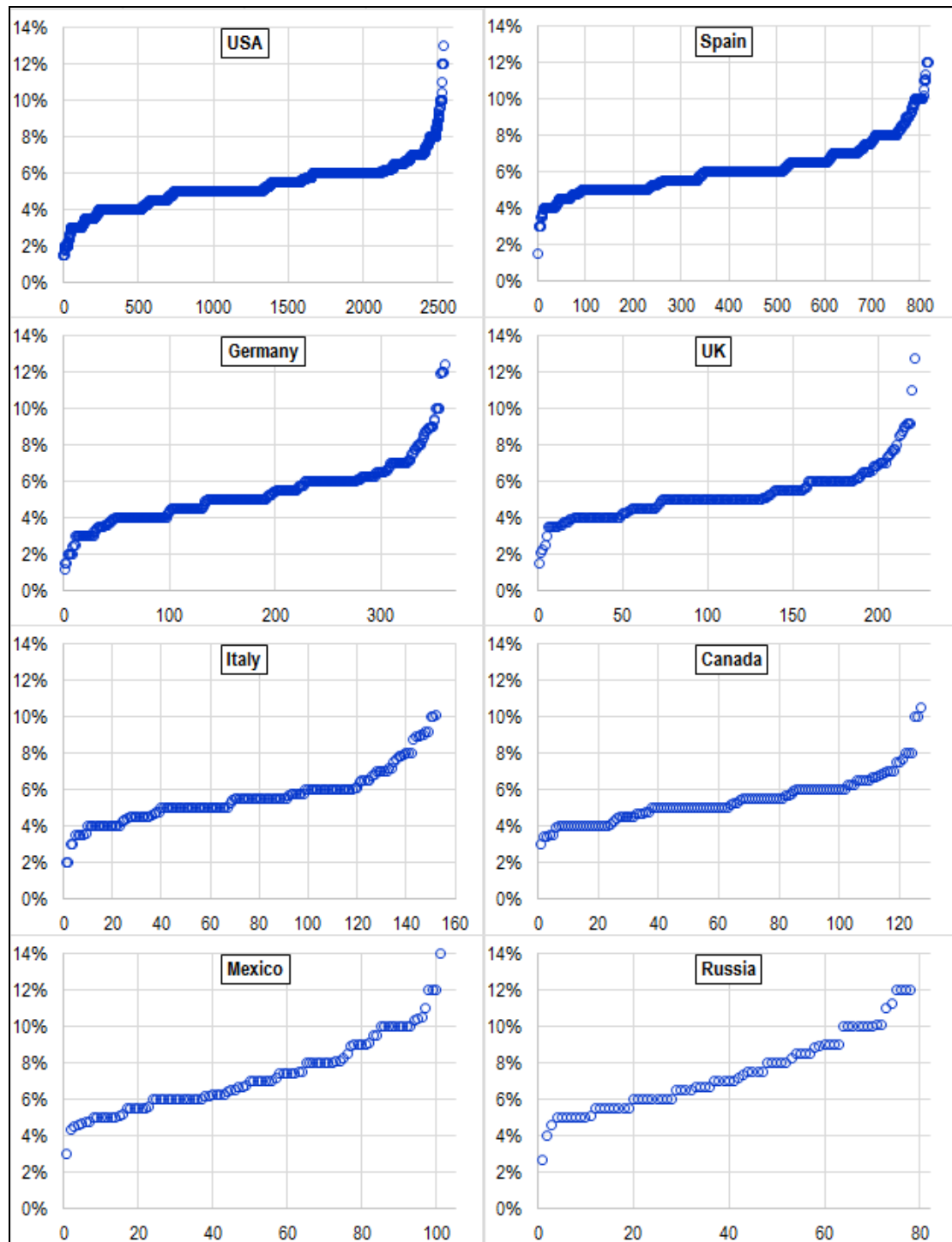
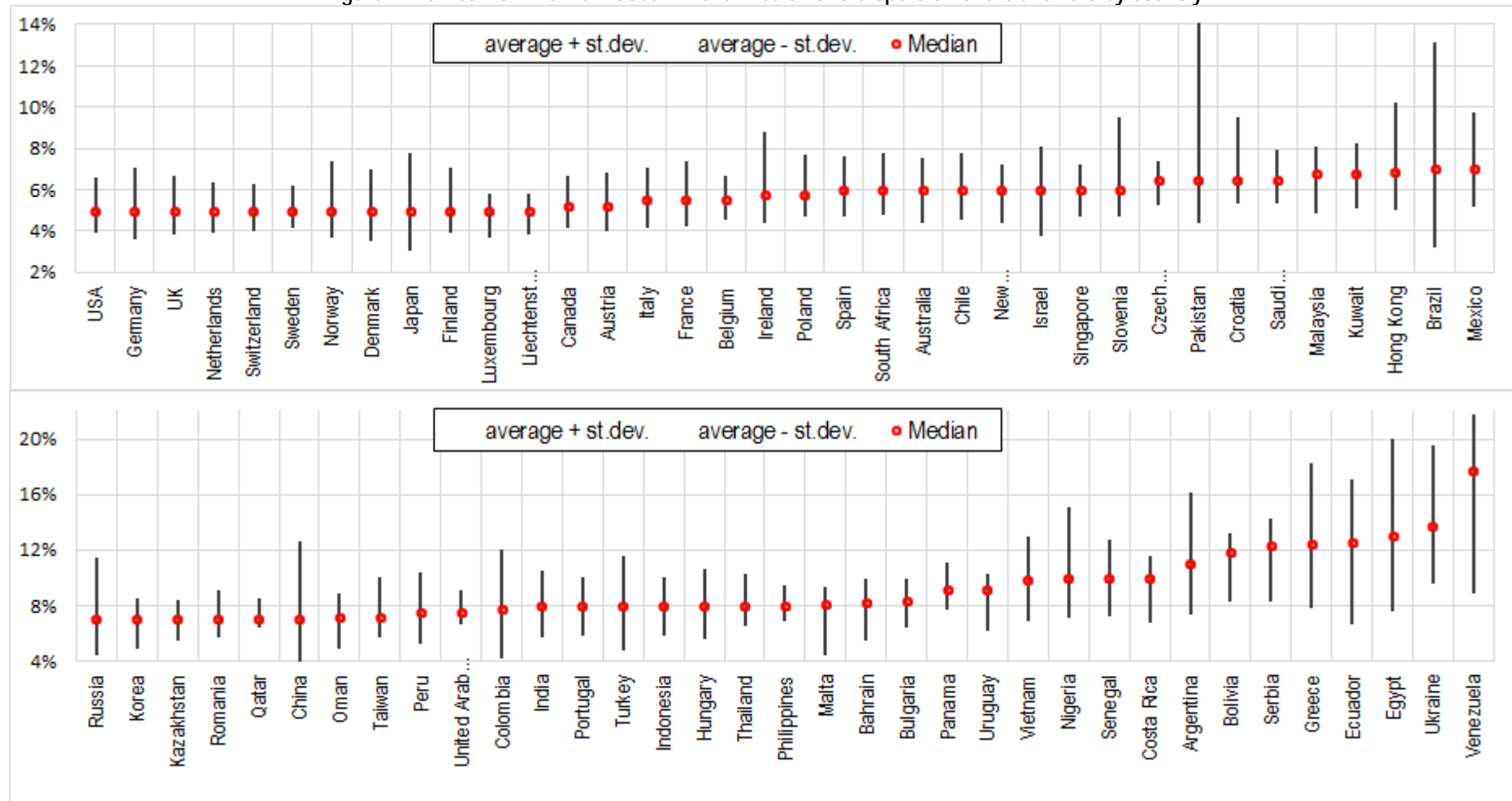


Figure 2. Market Risk Premium used in 2016. Median and dispersion of the answers by country



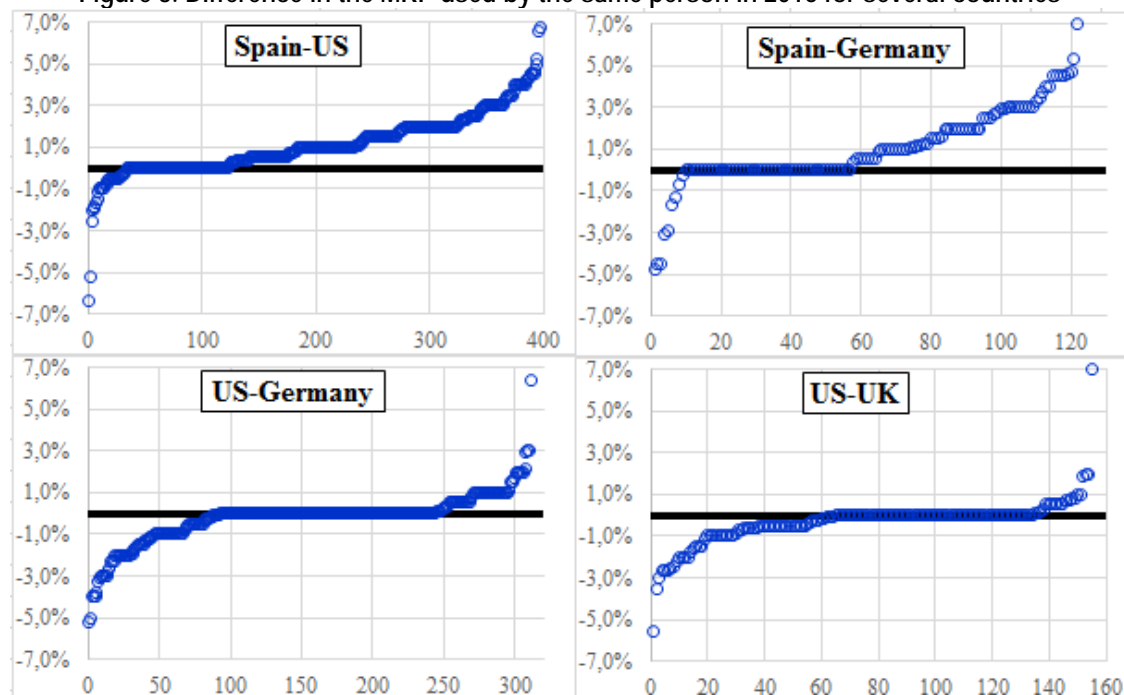
## 2. Differences among respondents

Table 3 and figure 3 show the differences in Market Risk Premium used by the same person for 2 countries. 312 respondents provided us with answers for USA and Germany. 155 provided us with answers for USA and UK.

Table 3. Difference in the Market Risk Premium used in 2016 by the same person for two countries

MRP	Average	Number of answers		
		Total	<0	>0
US - Germany	-0,2%	312	92	151
US - UK	-0,3%	155	63	70
Germany - UK	0,1%	80	17	43
Spain - Germany	1,0%	122	9	48
Spain - US	1,1%	397	33	90

Figure 3. Difference in the MRP used by the same person in 2016 for several countries



## 3. References used to justify the MRP figure

Some respondents indicated which books, papers... they use as a reference to justify the MRP that they use. The most cited references were: Damodaran, Internal estimate, Duff&Phelps, Ibbotson/Morningstar, Fernandez, DMS, Graham-Harvey, Bloomberg, Analysts, Experience, Own judgement, Grabowski, Pratt's & Grabowski, Brealy & Myers, Siegel.

#### 4. Comparison with previous surveys

Table 4 compares some results of this survey with the results of 2011, 2012, 2013, 2014 and 2015.

Table 4. Comparison of some results of the surveys of 2011, 2012, 2013, 2014, 2015 and 2016 (%)

	Average						St. Dev.					
	2016	2015	2014	2013	2012	2011	2016	2015	2014	2013	2012	2011
Switzerland	5,1	5,4	5,2	5,6	5,4	5,7	1,1	1,2	1,1	1,5	1,2	1,3
Netherlands	5,1	5,9	5,2	6,0	5,4	5,5	1,2	0,6	1,2	1,3	1,3	1,9
Sweden	5,2	5,4	5,3	6,0	5,9	5,9	1,0	1,3	1,0	1,7	1,2	1,4
Denmark	5,3	5,5	5,1	6,4	5,5	5,4	1,7	1,2	1,8	0,8	1,9	3,3
Germany	5,3	5,3	5,4	5,5	5,5	5,4	1,7	1,5	1,7	1,7	1,9	1,4
UK	5,3	5,2	5,1	5,5	5,5	5,3	1,4	1,7	1,4	1,4	1,9	2,2
USA	5,3	5,5	5,4	5,7	5,5	5,5	1,3	1,4	1,4	1,6	1,6	1,7
Austria	5,4	5,7	5,5	6,0	5,7	6,0	1,4	0,3	1,5	1,9	1,6	1,8
Canada	5,4	5,9	5,3	5,4	5,4	5,9	1,3	1,3	1,2	1,3	1,3	2,1
Japan	5,4	5,8	5,3	6,6	5,5	5,0	2,3	2,0	2,4	2,7	2,7	3,7
Finland	5,5	5,7	5,6	6,8	6,0	5,4	1,6	1,1	1,6	1,2	1,6	2,0
Norway	5,5	5,5	5,8	6,0	5,8	5,5	1,8	1,2	2,0	1,8	1,6	1,6
Belgium	5,6	5,5	5,6	6,1	6,0	6,1	1,1	1,3	1,1	1,8	1,1	1,0
Italy	5,6	5,4	5,6	5,7	5,6	5,5	1,5	1,5	1,5	1,5	1,4	1,4
France	5,8	5,6	5,8	6,1	5,9	6,0	1,6	1,4	1,5	1,6	1,5	1,5
New Zealand	5,8	6,6	5,6	5,4	6,2	6,0	1,4	1,3	1,4	1,8	1,1	1,0
Israel	5,9	5,2	5,8	6,4	6,0	5,6	2,2	1,1	2,1	1,1	2,3	1,7
Australia	6,0	6,0	5,9	6,8	5,9	5,8	1,6	4,0	1,6	4,9	1,4	1,9
Chile	6,1	6,5	6,0	5,0	6,1	5,7	1,6	0,9	1,5	2,2	1,7	2,1
Poland	6,2	5,2	6,3	6,3	6,4	6,2	1,5	1,0	1,5	1,0	1,6	1,1
Spain	6,2	5,9	6,2	6,0	6,0	5,9	1,4	1,6	1,6	1,7	1,6	1,6
Czech Republic	6,3	5,6	6,5	6,5	6,8	6,1	1,0	0,7	1,6	1,1	1,6	0,9
South Africa	6,3	7,7	6,3	6,8	6,5	6,3	1,5	2,3	1,4	1,4	1,5	1,5
Ireland	6,6	5,5	6,8	6,2	6,6	6,0	2,2	1,3	2,4	3,3	2,3	2,2
Korea (South)	6,7	6,2	6,3	7,0	6,7	6,4	1,8	1,5	1,8	1,8	1,4	2,5
Mexico	7,4	8,0	7,4	6,7	7,5	7,3	2,3	1,5	2,4	2,4	2,6	2,7
Peru	7,8	7,2	7,8	6,5	8,1	7,8	2,6	1,2	2,5	2,1	2,5	2,8
Portugal	7,9	5,7	8,5	6,1	7,2	6,5	2,1	1,5	2,0	2,3	2,0	1,7
Russia	7,9	9,7	7,9	7,3	7,6	7,5	3,5	2,9	3,4	4,1	2,9	3,7
Indonesia	8,0	8,9	7,9	7,8	8,1	7,3	2,1	1,2	2,0	1,4	1,7	2,3
Colombia	8,1	8,3	8,1	8,4	7,9	7,5	3,9	1,4	3,8	3,4	3,7	4,3
Hungary	8,1	8,8	8,3	8,2	7,4	8,0	2,5	0,8	2,3	1,6	2,3	2,4
India	8,1	8,4	8,0	8,5	8,0	8,5	2,4	2,5	2,4	2,9	2,4	2,8
Turkey	8,1	9,3	7,9	8,2	8,4	8,1	3,4	2,5	3,3	2,9	3,4	3,0
Brazil	8,2	7,5	7,8	6,5	7,9	7,7	4,9	2,1	4,2	2,1	4,7	4,6
China	8,3	8,1	8,1	7,7	8,7	9,4	4,4	5,6	3,5	2,3	4,6	5,1
Thailand	8,4	7,3	8,0	7,6	8,1	7,9	1,9	0,9	1,8	0,6	1,8	2,8
Argentina	11,8	22,9	11,8	10,6	10,9	9,9	4,4	12,3	4,2	8,1	3,6	3,4
Greece	13,0	14,3	15,0	7,3	9,6	7,4	5,2	5,8	4,7	4,1	4,4	2,7

Welch (2000) performed two surveys with finance professors in 1997 and 1998, asking them what they thought the Expected MRP would be over the next 30 years. He obtained 226 replies, ranging from 1% to 15%, with an average arithmetic EEP of 7% above T-Bonds.<sup>4</sup> Welch

<sup>4</sup> At that time, the most recent Ibbotson Associates Yearbook reported an arithmetic HEP versus T-bills of 8.9% (1926–1997).



(2001) presented the results of a survey of 510 finance and economics professors performed in August 2001 and the consensus for the 30-year arithmetic EEP was 5.5%, much lower than just 3 years earlier. In an update published in 2008 Welch reports that the MRP “used in class” in December 2007 by about 400 finance professors was on average 5.89%, and 90% of the professors used equity premiums between 4% and 8.5%.

Johnson et al (2007) report the results of a survey of 116 finance professors in North America done in March 2007: 90% of the professors believed the Expected MRP during the next 30 years to range from 3% to 7%.

Graham and Harvey (2007) indicate that U.S. CFOs reduced their average EEP from 4.65% in September 2000 to 2.93% by September 2006 (st. dev. of the 465 responses = 2.47%). In the 2008 survey, they report an average EEP of 3.80%, ranging from 3.1% to 11.5% at the tenth percentile at each end of the spectrum. They show that average EEP changes through time. Goldman Sachs (O'Neill, Wilson and Masih 2002) conducted a survey of its global clients in July 2002 and the average long-run EEP was 3.9%, with most responses between 3.5% and 4.5%.

Ilmanen (2003) argues that surveys tend to be optimistic: “*survey-based expected returns may tell us more about hoped-for returns than about required returns*”. Damodaran (2008) points out that “*the risk premiums in academic surveys indicate how far removed most academics are from the real world of valuation and corporate finance and how much of their own thinking is framed by the historical risk premiums... The risk premiums that are presented in classroom settings are not only much higher than the risk premiums in practice but also contradict other academic research*”.

**Table 5. Comparison of previous surveys**

	Surveys of Ivo Welch					Fernandez et al (2009, 2010)			
	Oct 97– Feb 98*	Jan-May 99+	Sep 2001**	Dec. 2007#	January 2009++	US 2008	Europe 2008	US 2009	Europe 2009
Number of answers	226	112	510	360	143	487	224	462	194
<b>Average</b>	<b>7.2</b>	<b>6.8</b>	<b>4.7</b>	<b>5.96</b>	<b>6.2</b>	<b>6.3</b>	<b>5.3</b>	<b>6.0</b>	<b>5.3</b>
<b>Std. Deviation</b>	<b>2.0</b>	<b>2.0</b>	<b>2.2</b>	<b>1.7</b>	<b>1.7</b>	<b>2.2</b>	<b>1.5</b>	<b>1.7</b>	<b>1.7</b>
Max	15	15	20	20		19.0	10.0	12.0	12.0
Q3	8.4	8	6	7.0	7	7.2	6.0	7.0	6.0
Median	7	7	4.5	6.0	6	6.0	5.0	6.0	5.0
Q1	6	5	3	5.0	5	5.0	4.1	5.0	5.3
Min	1.5	1.5	0	2		0.8	1.0	2.0	2.0

- \* 30-Year Forecast. Welch (2000) First survey + 30-Year Forecast. Welch (2000) Second survey
- \*\* 30 year Equity Premium Forecast (Geometric). “The Equity Premium Consensus Forecast Revisited” (2001)
- # 30-Year Geo Eq Prem Used in class. Welch, I. (2008), “The Consensus Estimate for the Equity Premium by Academic Financial Economists in December 2007”. <http://ssrn.com/abstract=1084918>
- ++ In your classes, what is the main number you are recommending for long-term CAPM purposes? “Short Academic Equity Premium Survey for January 2009”. <http://welch.econ.brown.edu/academics/equpdate-results2009.html>

**Table 6. Estimates of the EEP (Expected Equity Premium) according to other surveys**

Authors	Conclusion about EEP	Respondents
<i>Pensions and Investments</i> (1998)	3%	Institutional investors
Graham and Harvey (2007)	Sep. 2000. Mean: 4.65%. Std. Dev. = 2.7%	CFOs
Graham and Harvey (2007)	Sep. 2006. Mean: 2.93%. Std. Dev. = 2.47%	CFOs
Graham and Harvey (2014)	3.73%	CFOs
Welch update	December 2007. Mean: 5.69%. Range 2% to 12%	Finance professors
O'Neill, Wilson and Masih (2002)	3.9%	Global clients Goldman

The magazine *Pensions and Investments* (12/1/1998) carried out a survey among professionals working for institutional investors: the average EEP was 3%. Shiller<sup>5</sup> publishes and updates an index of investor sentiment since the crash of 1987. While neither survey provides a direct measure of the equity risk premium, they yield a broad measure of where investors or professors expect stock prices to go in the near future. The 2004 survey of the Securities Industry Association (SIA) found that the median EEP of 1500 U.S. investors was about 8.3%. Merrill

<sup>5</sup> See <http://icf.som.yale.edu/Confidence.Index>

Lynch surveys more than 300 institutional investors globally in July 2008: the average EEP was 3.5%.

A main difference of this survey with previous ones is that this survey asks about the **Required** MRP, while most surveys are interested in the **Expected** MRP.

## 5. MRP or EP (Equity Premium): 4 different concepts

As Fernandez (2007, 2009b) claims, the term “equity premium” is used to designate four different concepts:

1. **Historical** equity premium (HEP): historical differential return of the stock market over treasuries.
2. **Expected** equity premium (EEP): expected differential return of the stock market over treasuries.
3. **Required** equity premium (REP): incremental return of a diversified portfolio (the market) over the risk-free rate required by an investor. It is used for calculating the required return to equity.
4. **Implied** equity premium (IEP): the required equity premium that arises from assuming that the market price is correct.

The four concepts (HEP, REP, EEP and IEP) designate different realities. The **HEP** is easy to calculate and is equal for all investors, provided they use the same time frame, the same market index, the same risk-free instrument and the same average (arithmetic or geometric). But the **EEP**, the **REP** and the **IEP** may be different for different investors and are not observable.

The **HEP** is the historical average differential return of the market portfolio over the risk-free debt. The most widely cited sources are Ibbotson Associates and Dimson *et al.* (2007).

Numerous papers and books assert or imply that there is a “market” EEP. However, it is obvious that investors and professors do not share “homogeneous expectations” and have different assessments of the **EEP**. As Brealey *et al.* (2005, page 154) affirm, “Do not trust anyone who claims to know what returns investors expect”.

The **REP** is the answer to the following question: What incremental return do I require for investing in a diversified portfolio of shares over the risk-free rate? It is a crucial parameter because the REP is the key to determining the company’s required return to equity and the WACC. Different companies may use, and in fact do use, different **REPs**.

The **IEP** is the implicit REP used in the valuation of a stock (or market index) that matches the current market price. The most widely used model to calculate the IEP is the dividend discount model: the current price per share ( $P_0$ ) is the present value of expected dividends discounted at the required rate of return ( $K_e$ ). If  $d_1$  is the dividend per share expected to be received in year 1, and  $g$  the expected long term growth rate in dividends per share,

$$P_0 = d_1 / (K_e - g), \text{ which implies: } IEP = d_1/P_0 + g - R_f \quad (1)$$

The estimates of the IEP depend on the particular assumption made for the expected growth ( $g$ ). Even if market prices are correct for all investors, there is not an IEP common for all investors: there are many pairs (IEP,  $g$ ) that accomplish equation (1). Even if equation (1) holds for every investor, there are many *required* returns (as many as expected growths,  $g$ ) in the market. Many papers in the financial literature report different estimates of the IEP with great dispersion, as for example, Claus and Thomas (2001, IEP = 3%), Harris and Marston (2001, IEP = 7.14%) and Ritter and Warr (2002, IEP = 12% in 1980 and -2% in 1999). There is no a common **IEP** for all investors.

For a particular investor, the **EEP** is not necessary equal to the REP (unless he considers that the market price is equal to the value of the shares). Obviously, an investor will hold a diversified portfolio of shares if his EEP is higher (or equal) than his REP and will not hold it otherwise.

We can find out the REP and the EEP of an investor by asking him, although for many investors the REP is not an explicit parameter but, rather, it is implicit in the price they are prepared to pay for the shares. However, it is not possible to determine the REP for the market as a whole, because it does not exist: even if we knew the REPs of all the investors in the market, it would be meaningless to talk of a REP for the market as a whole. There is a distribution of REPs and we can only say that some percentage of investors have REPs contained in a range. The average of that distribution cannot be interpreted as the REP of the market nor as the REP of a representative investor.

Much confusion arises from not distinguishing among the four concepts that the phrase *equity premium* designates: Historical equity premium, Expected equity premium, Required equity premium and Implied equity premium. 129 of the books reviewed by Fernandez (2009b) identify Expected and Required equity premium and 82 books identify Expected and Historical equity premium.

Finance textbooks should clarify the MRP by incorporating distinguishing definitions of the four different concepts and conveying a clearer message about their sensible magnitudes.

## 6. Conclusion

Most surveys have been interested in the Expected MRP, but this survey asks about the Required MRP.

We provide the statistics of the Equity Premium or Market Risk Premium (MRP) used in 2016 for **71 countries**.

Most previous surveys have been interested in the Expected MRP, but this survey asks about the Required MRP. The paper also contains the references used to justify the MRP, comments from several persons that do not use MRP, and comments from others that do use MRP. Fernandez et al. (2011a)<sup>6</sup> has additional comments. The comments illustrate the various interpretations of the required MRP and its usefulness.

This survey links with the *Equity Premium Puzzle*: Fernandez et al (2009), argue that the equity premium puzzle may be explained by the fact that many market participants (equity investors, investment banks, analysts, companies...) do not use standard theory (such as a standard representative consumer asset pricing model...) for determining their Required Equity Premium, but rather, they use historical data and advice from textbooks and finance professors. Consequently, ex-ante equity premia have been high, market prices have been consistently undervalued, and the ex-post risk premia has been also high. Many investors use historical data and textbook prescriptions to estimate the required and the expected equity premium.

### EXHIBIT 1. Mail sent on April 2016

We are doing a survey about the Market Risk Premium (MRP) or Equity Premium used to calculate the required return to equity in different countries.

We will be very grateful to you if you kindly reply to the following 2 questions.

Of course, no companies, individuals or universities will be identified, and only aggregate data will be made public.

Best regards and thanks, Pablo Fernandez

2 questions:

1. The Market Risk Premium that I am using in 2016

for USA is: \_\_\_\_\_%

for \_Germany\_ is: \_\_\_\_\_%

for \_\_\_\_\_ is: \_\_\_\_\_%

for \_\_\_\_\_ is: \_\_\_\_\_%

2. Books or articles that I use to support this number:

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<sup>6</sup> Fernandez, P., J. Aguirreamalloa and L. Corres (2011a), "US Market Risk Premium Used in 2011 by Professors, Analysts and Companies: A Survey...", downloadable in <http://ssrn.com/abstract=1805852>

## EXHIBIT 2 COMMENTS OF RESPONDENTS TO THE SURVEY

I use Duff & Phelps: “Duff & Phelps has currently concluded on a 4.0% “normalized” risk free rate in developing its U.S. ERP (as compared to the 2.4% “spot rate” as of January 31, 2016)”. “Duff & Phelps Increases U.S. Equity Risk Premium Recommendation to 5.5%, Effective January 31, 2016.”

Market risk premium for USA is around 10%. Purely based on observation of deal flow and have seen upwards of 20% on some. Irrational exuberance at play in some gateway cities.

I'm not using any market premium. Just the old fashioned multiples and an overall view. For discounting I just use a common sense kind of rate depending on the company (size, quality etc), around 7.5%. With interest rates at these levels (negative – 9 bpt in Japan), what sense does a “market premium” make? Market valuations have already been “distorted”.

I do not believe in modern portfolio theory, so I do not calculate required return using the CAPM. I use judgement based on my assessment of risk with the company's WACC as my floor for required return.

I only deal with small, private companies and do not calculate market risk.

In our fund we use an outside investment advisor to manage the portfolio.

My approach considers the underlying value using traditional methods, and the value of an acquisition based on market opportunities of the combined units.

I do not use any MRP in my investment process. It is really hard to estimate.

MRP for USA is 10%. Use intuition and the fact that the RF is about 1% and historical return on the market is about 11%.

Mi modelo es diferente: cuando las economías son débiles, me concentro más en retornos intangibles que en retornos monetarios. Cuando las cosas son así, es cuando la gente nota cuales son los verdaderos amigos, y es cuando yo me concentro en afirmar relaciones.

We normally calculate market risk premium based on the market rate of interest less risk free rate of return for a given portfolio. This form of calculation is accepted by Chartered Institute of management Accountant (UK)

No utilizo risk premium, solo una tasa de 7% para actualizar cash flows, menos 1% de inflacion = 6%

You can estimate of the average equity risk premium for a particular set of firms by using the implied cost of capital using analysts forecasts. It is nonsense to talk about there being a risk premium for a particular country.

I can't be of much help in your survey: I believe in the doctrine of the “Absurdity of CAPM”

You can an estimate of the average equity risk premium for a particular set of firms by using the implied cost of capital using analysts forecasts. It is nonsense to talk about there being a risk premium for a particular country.

Mi concepción de riesgo es la que Howard Marks profesa, y es simple y llanamente, la posibilidad de pérdida permanente de capital. Así pues, establezco una rentabilidad mínima a todas mis inversiones en bolsa con acciones de un +15% anual. No distingo entre países. No creo ni en el WACC, ni en la prima de riesgo ni en activo libre de riesgo (existe tal cosa??).

Dada la alta volatilidad y la incertidumbre política actual prefiero no hacer predicciones.

I would use the risk premium in each market defined not as the traditional risk premium: Avg return on the S&P less the risk free rate, but rather the avg return on a market index less the return on cash cow stocks that pay large dividends (you can construct an index for such stocks), especially that the risk free return is very

close to 1-2 almost everywhere and is sometimes negative as is -the case in Japan. I will then weigh each risk premium by the country GDP to total GDP in the countries in the study.

We do not usually calculate MRP in China in the Private Equity sector, instead, we usually calculate the IRR of those project, and will be in favor of IRR over 25%.

I do not use MRP. In evaluating today's equity opportunities, I look at historical P/E ratios. My conclusion regarding U.S equities is 4.5% for 2016.

The Market Risk Premium that I am using in 2016 for USA is:  $(5+7*i)\%$  (a complex number)

You don't define exactly what you mean by "Market Risk Premium". Different authorities define it in different ways. Is it expected return over short-term government securities (e.g. 30 or 90 day T-Bills), or longer-term government bonds? What about in countries with risky government debt, like Greece? You also don't specify over what time period. Given the literature on predictability of stock returns, a particular time period should be specified.

My starting point was a capm (beta) thinking, but I was not able to get reasonable/realistic return requirements for the low beta P&C insurance sector.

I believe there is an additional agent/volatility price that is not reflecting itself in the beta, but should be accounted for elsewhere. You would normally not let an agent invest in zero beta assets for you. These risks should disappear in a well diversified portfolio, but apparently they do not.

I believe investors have some kind of utility function (experience based) that might differ from the direct economic risk. Bad experience can change the view on the future performance and hence impact price of equity, despite the financial impact in diversified portfolio disappears.

I actually backed out a reasonable RR across my sector, and adjusted them individually (per company) according to the risk properties (in capm / beta thinking). Also I disclosed the rate used in the valuation.

I do not know if it is helpful, but there were some consistent thinking behind my approach, but also an understanding that the market gives us some unobserved information through pricing. I believe that I had one of most scientific approaches in the sector.

As a Project Finance person, most of my projects looking at Equity Returns are in emerging markets and my clients are greedy. The benchmark return since I started my job 20 years ago is 20% IRR and has never changed. At the end people accept 17 to 18 %.

To my experience large utilities go far below this (rather 10%), but would therefore never enter the real frontier states (i.e. Nigeria vs Turkey).

From my personal investment the question is what is fair and what is realistic.

Germany yields 5-6% (over 20 years) and France 8% (over 15 years), both take significant residual value of the assets risk, wind risk, but no tariff risk (price per KWh is fixed with France even adapting to (albeit non existing) inflation).

Compare this to a Lufthansa subordinated debt which yields 5%. What is the likelihood that the German Government will let Lufthansa go down, besides the fact that it is one of the best capitalized airlines.

On the other hand, wind farms generate constant cash flows. Equities are pretty volatile.

What should I expect from a Daimler investment? a great dividend and some up-side.

What is the real value of an Insurance (Allianz, Munich RE) in a negative interest environment.

Utilities are canceling dividends, the world as we know it is changing rapidly.

Am I going to define my equity return requirement as a margin over 10 year BUNDS? I hope I can do better than that.

So I go for cash flow is king and solid assets. I guess I take the 8% return from the French windfarm and consider it the less risky alternative to a portfolio of 5 top dividend payers in the DAX (which I also have, as a wise portfolio strategist).

I am curious on the following matters:

1) Does a risk-free asset exist, also in light of the recent events that have been characterizing the financial markets? 2) Do the role provided by the exchange rates is important for the valuation and the comparison of the MRPs across countries? 3) Do the visions of the academics and practitioners for estimating the MRPs are standardized to a common numeraire, in terms of currency?

Somos una Pyme y sólo usamos en presupuesto 2016 un valor mínimo exigido de EBT/ingresos del 9%.

I don't use market risk premiums. We use bottom valuation analysis at a stock level for each region

In the globe with listed real estate securities. Measures that we do consider are regional spreads On 10yr Govt bonds to; dividend yields and the direct property yields.

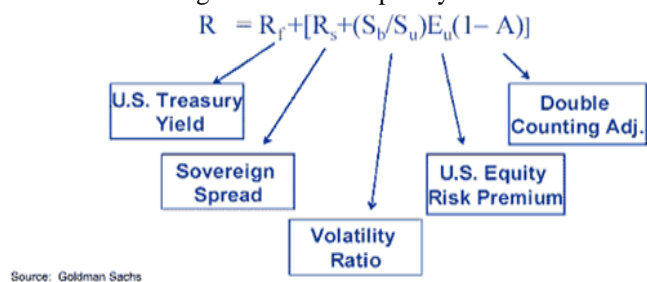
I am aware of academic debates on this issue and remember from university days of some debate that 6% Was too low. I would think that required risk premiums would move around and in the future how useful Will it be in a world of low investment returns coupled with periods of high volatility particularly as more Govts and central banks interfere with the market pricing of so many different asset classes.

It is at the stock level that we determine return on equity but given the markets that we invest in being Listed global real estate there is not a lot of ROE dispersion between stocks. What we have found to be more useful. At a regional market level is compile forward looking Net Asset Values (NAVs) compared to current pricing and then calculate warranted total returns for each region. So we build from the bottom-up for required returns at the stock level which feeds into regional required returns.

The market risk premium used when calculating the required return to equity in our WACC-model is fixed at 5 percent. In the period 2007-2012 the market risk premium was fixed at 4 percent. The level of the premium is based on studies and surveys among Norwegian corporate finance utilities, member of The Norwegian society of financial analysts and the Oslo Stock Exchange. This is the market premium used in our regulation, other authorities and sectors might be using another premium. For more information about our WACC-model, please see

[http://www.icer-regulators.net/portal/page/portal/ICER\\_HOME/publications\\_press/ICER\\_Chronicle/Art4\\_09](http://www.icer-regulators.net/portal/page/portal/ICER_HOME/publications_press/ICER_Chronicle/Art4_09)

I use the following formula developed by Goldman Sachs for developing countries:



MRP for the US is 6%. I derive it myself in a simple fashion. Since a Forward PE can be conceptualized as  $1/(rE - g)$ , and  $rE$  for the market is  $rF + 1*MRP$ , if we set  $rF = g$  (using insights on nominal productivity growth rates from Macro 101) and if we know the market's Forward PE, we can easily back out the MRP.

We generally use the Duff & Phelps 2015 Valuation Handbook as the source for the equity risk premium and we use the long horizon (1926 to 2014) risk premium.

5.5% for US based on Duff & Phelps suggested ERP and the supply-side ERP after adjustment for WWII interest rates (both from D&P Valuation Handbook).

In my team we use a prudent 4% for developed Equity Markets. If the 10y were not so distorted, a lower rate of 2x the 10y yield could suffice.

<http://www.absolute-strategy.com/x/erp.html>

We apply a system of global enterprise (not equity) risk premiums in our valuation. Currently they average 2.25% in the range of 0.75-4.50% depending on industries, not countries. The system was designed by ourselves from general experience.

S&P 500 return over the past 5 years is 7% compounded. You could do the same calculation for the respective stock exchange indices for countries you are interested in.

Use intuition and the fact that the RF is about 1% and historical return on the market is about 11%.

I regret that you dropped a question on risk-free interest rate. Now that the negative interest policy is in effect in Euro Zone and Japan, I see several investment banks in Japan started to use negative risk-free rate in their CAPM application. 10Y Japanese Government Bond yield is indeed in negative territory, so that it is not illogical to use negative risk-free rate.

However, I doubt that the negative JGB yield will be sustainable for long, and that we should use it for our valuation of cash flows which survive much further than 10 years.

I'm using in most of my classes a RFR of 3% and a MRP of 6% this year -- but this is based upon your material and my bias on short-term rates (financial repression make them too low in the U.S.)

We generally use CAPM model to estimate Cost of Equity, where we use international benchmarks for Equity Risk Premium, i.e. 6% - 8% followed by estimation for 'beta' taken from Aswath Damodaran. We also add 'alpha' factor to address company specific risk premium, to allow adjustments in respect of factors such as aggressive forecasts, quality of financial information, experience of management, relative size, etc. Based on international practices adopted by almost every other professional services firm, we also consider valuation discounts, such as discounts for lack of marketability (private businesses), lack of liquidity (closely held stocks), size discounts (with reference to the comparable market players), etc.

The market watch survey shows that average analyst expectation for S&P500 for the end of 2016 was 2193. The end of 2015 index value was 2043. So, the average expected return was around 7.5%. Since the t-bill yield is close to zero, the market risk premium for 2016 that I use is 7.5%.

The Equity Risk Premium in 2015 (Graham, Harvey): [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2611793](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2611793)

I generally use 3.0-3.5% with reference to Dimson, Marsh and Staunton (2011).

10 yr average of bench mark nifty index is about 16%, risk free rate on the 364 Tbill is 7%, difference of 16-7 gives you 9%

[www.market-risk-premia.com](http://www.market-risk-premia.com)

I use a MRP of 7% which is the mid-point of the range quoted in "A Random Walk Down Wall Street" by Burton Malkiel. Professor Malkiel updates his rolling 25 year equity risk premiums every couple of years and the 6 to 8% range is fairly consistent.

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