Survey: Market Risk Premium and Risk-Free Rate used for 95 countries in 2022

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ABSTRACT

This paper contains the statistics of a survey about the Risk-Free Rate (**R_F**) and the Market Risk Premium (**MRP**) used in 2022 for **95 countries**. We got answers for 99 countries, but we only report the results for 95 countries with more than 6 answers.

Many respondents use for European countries a R_F higher than the yield of the 10-year Government bonds. The coefficient of variation (standard deviation / average) of R_F is higher than the coefficient of variation of MRP for the Euro countries.

The paper also contains the links to previous years surveys, from 2008 to 2021.

JEL Classification: G12, G31, M21

Keywords: equity premium; required equity premium; coronavirus; expected equity premium; risk-free rate

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xPpLhMpAc

1. Market Risk Premium (MRP), Risk Free Rate (R_F) and Km [R_F + MRP] used in 2022 in 95 countries

We sent a short email (see exhibit 1) on May, 2022 to more than 15,000 email addresses of finance and economics professors, analysts and managers of companies obtained from previous correspondence, papers and webs of companies and universities. We asked about the Risk-Free Rate (**R_F**) and the Market Risk Premium (**MRP**) **used *"to calculate the required return to equity in different countries"***.

By May 23, 2022, we had received 1,624 emails. 167 persons answered that they do not use MRP for different reasons (see table 1). The remaining emails had specific Risk-Free Rates and MRPs used in 2022 for one or more countries.[1] We would like to sincerely thank everyone who took the time to answer us.

Table 1. MRP and R_F used in 2022: 1,624 emails

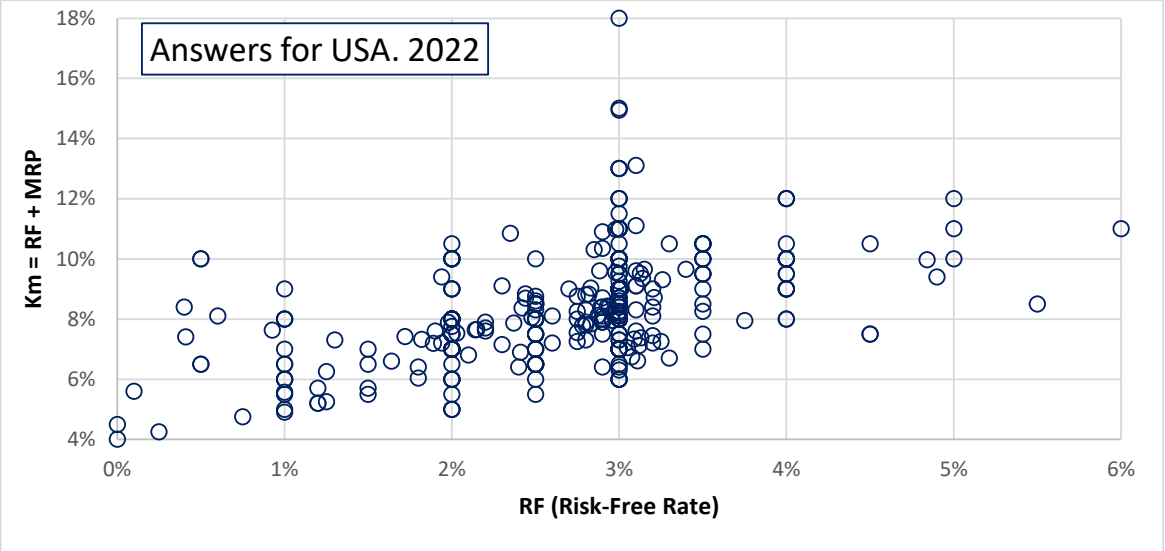
	Total
Answers reported (MRP figures)	**4,337**
Outliers	**96**
"I can't provide you those figures: now are confidential"	**47**
Only MRP or RF (not both)	**11**
"We do not use MRP"	**167**

Table 2 contains the statistics of the **MRP** used in 2022 **for 95 countries**. We got answers for 99 countries, but we only report the results for 95 countries with more than 6 answers.

Table 3 contains the statistics of the Risk-Free Rate (**RF**) used in 2022 in the 95 countries[2] and **Table 4** contains the average of **Km** (required return to equity: Km = Risk-Free Rate + MRP).

Figure 1 is a graphic representation of the answers (Km and RF) we got for USA.

Figure 1. Answers for USA. R_F and Km (R_F + MRP) used in 2022



[1] We considered 96 of them as outliers because they provided a very small MRP (below 2%)

[2] Fernandez, P. (2020), "'Normalized' Risk-Free Rate: Fiction or Science Fiction?" Available at: https://ssrn.com/abstract=3708863

Table 2. Market Risk Premium (MRP) used for 95 countries in 2022

MRP	Number of Answers	Average	Median	MAX	min
USA	1591	5,6%	5,5%	15,0%	3,0%
Spain 2022	586	6,7%	6,0%	15,5%	4,0%
AbuDhabi	6	5,9%	6,0%	7,0%	4,7%
Andorra	6	5,3%	6,1%	7,0%	2,0%
Angola	11	11,5%	11,0%	13,0%	10,7%
Argentina	16	29,9%	19,3%	65,0%	16,1%
Australia	34	6,3%	6,0%	10,0%	3,2%
Austria	63	5,8%	5,5%	9,0%	4,0%
Bangladesh	13	9,5%	8,2%	12,5%	7,1%
Barbados	10	13,2%	11,9%	16,4%	10,8%
Belgium	53	5,8%	5,5%	9,0%	4,0%
Bolivia	11	10,2%	9,7%	14,1%	6,0%
Bosnia	9	6,9%	6,0%	15,1%	4,0%
Brazil	40	9,8%	8,5%	22,0%	3,5%
Bulgaria	16	6,0%	6,0%	9,0%	4,0%
Canada	38	5,7%	5,6%	8,0%	4,2%
Chile	21	7,4%	7,1%	11,8%	4,0%
China	28	8,7%	7,8%	15,0%	4,9%
Colombia	12	6,7%	6,1%	10,4%	5,1%
Costa Rica	9	10,0%	10,1%	14,5%	3,0%
Croatia	11	6,1%	6,0%	9,4%	4,0%
Czech Republic	13	6,0%	5,8%	6,8%	4,8%
Denmark	17	5,8%	5,5%	9,0%	4,0%
Dominican Rep.	9	9,1%	7,8%	12,1%	6,7%
Ecuador	13	13,1%	14,1%	18,7%	7,0%
Egypt	12	12,7%	11,3%	20,0%	5,5%
Estonia	28	5,8%	5,5%	9,0%	4,0%
Ethiopia	6	12,3%	12,6%	15,0%	8,9%
Finland	37	5,6%	5,5%	9,0%	0,4%
France	92	6,3%	5,9%	9,0%	0,5%
Georgia	8	8,8%	7,5%	11,8%	6,4%
Germany	283	5,7%	6,0%	9,5%	2,0%
Ghana	6	15,8%	14,0%	30,7%	9,6%
Greece	41	6,6%	6,8%	11,0%	2,6%
Hong Kong	15	6,5%	6,4%	9,0%	3,8%
Hungary	13	6,7%	7,0%	7,5%	6,0%
Iceland	7	6,5%	6,5%	8,0%	5,1%
India	37	6,9%	6,5%	14,0%	2,0%
Indonesia	15	7,7%	6,1%	16,3%	3,3%
Ireland	47	5,8%	5,5%	9,0%	4,0%
Israel	15	6,0%	5,0%	9,1%	3,9%
Italy	67	6,0%	6,0%	9,0%	2,0%
Jamaica	9	11,4%	10,1%	14,5%	9,0%
Japan	27	5,9%	6,0%	10,0%	3,5%
Kazakhstan	10	7,8%	6,5%	10,8%	5,4%
Kenya	10	10,7%	9,7%	14,1%	8,6%
Korea, (South)	10	6,0%	4,7%	8,9%	3,7%
Kuwait	7	6,1%	5,5%	7,8%	1,5%
Latvia	10	6,2%	6,2%	7,0%	5,4%
Lithuania	37	6,3%	5,1%	9,3%	4,0%
Luxembourg	39	5,8%	5,5%	9,0%	4,0%
Macedonia	6	8,9%	7,9%	12,1%	6,7%
Malaysia	15	7,0%	7,0%	9,6%	4,4%
Mauritius	10	7,4%	6,1%	10,4%	5,1%

Mexico	32	7,4%	6,2%	17,0%	3,0%
Mongolia	14	12,9%	12,4%	17,5%	9,6%
Montenegro	11	9,2%	8,7%	13,0%	5,5%
Morocco	9	8,5%	8,3%	11,0%	5,6%
Mozambique	9	14,5%	13,1%	17,7%	12,0%
Netherlands	58	6,2%	5,0%	7,4%	3,9%
New Zealand	14	5,7%	5,5%	8,4%	3,2%
Nigeria	9	9,3%	9,7%	14,1%	1,2%
Norway	18	5,8%	5,5%	10,0%	4,0%
Pakistan	7	8,4%	7,5%	14,0%	4,0%
Panama	12	7,4%	6,1%	10,4%	5,1%
Peru	23	6,9%	7,0%	10,1%	3,0%
Phillipines	18	6,2%	6,1%	7,0%	5,1%
Poland	25	5,7%	6,0%	9,0%	1,0%
Portugal	44	6,2%	6,0%	9,0%	2,5%
Qatar	12	5,6%	4,8%	9,0%	3,2%
Romania	14	7,5%	6,5%	10,7%	5,4%
Russia	15	14,2%	14,0%	20,0%	9,0%
Saudi Arabia	12	6,5%	6,5%	9,1%	3,9%
Serbia	12	5,9%	5,7%	9,0%	4,0%
Singapore	9	5,5%	4,2%	8,4%	3,2%
Slovakia	24	6,1%	6,0%	9,0%	4,0%
Slovenia	18	6,1%	6,0%	9,0%	4,0%
South Africa	16	7,3%	7,2%	12,0%	5,0%
Sri Lanka	13	14,5%	13,1%	17,7%	12,0%
Sweden	66	6,0%	6,0%	10,0%	4,0%
Switzerland	56	5,8%	5,7%	9,0%	4,0%
Taiwan	16	6,7%	6,3%	12,0%	3,0%
Tanzania	13	11,3%	10,0%	14,4%	8,9%
Thailand	14	7,0%	6,9%	9,0%	4,8%
Trinidad and Tobago	9	7,7%	7,4%	9,0%	7,0%
Tunisia	7	13,3%	13,3%	16,1%	10,5%
Turkey	11	11,0%	10,0%	14,1%	8,6%
Uganda	12	11,8%	10,5%	14,9%	9,4%
Ukraine	9	34,0%	35,0%	50,0%	19,0%
United Arab Emirates	11	5,9%	4,7%	9,7%	2,0%
United Kingdom	69	6,1%	6,0%	15,0%	2,0%
Uruguay	19	7,3%	6,1%	10,4%	5,1%
Venezuela	10	26,1%	24,6%	29,6%	23,3%
Vietnam	6	9,1%	7,8%	12,1%	6,7%
Zambia	6	21,3%	17,9%	40,0%	14,9%

Table 3. Risk Free Rate (R_F) used for 95 countries in 2022

R_F	Number of Answers	**Average**	Median	MAX	min
USA	1591	2,7%	3,0%	6,0%	0,0%
Spain 2022	586	2,1%	2,0%	5,5%	0,0%
AbuDhabi	6	2,3%	2,3%	3,0%	1,5%
Andorra	6	2,5%	2,8%	3,0%	1,5%
Angola	11	11,0%	11,0%	13,0%	9,0%
Argentina	16	28,4%	27,8%	55,0%	3,0%
Australia	34	3,4%	3,2%	6,5%	0,4%
Austria	63	1,8%	1,7%	3,0%	0,0%
Bangladesh	13	5,5%	5,0%	7,1%	4,5%
Barbados	10	4,5%	4,0%	6,1%	3,5%
Belgium	53	1,4%	1,5%	3,0%	0,0%

Bolivia	11	5,9%	5,9%	8,1%	3,0%
Bosnia	9	1,9%	1,5%	5,9%	0,0%
Brazil	40	10,3%	11,0%	12,8%	2,8%
Bulgaria	16	1,6%	1,5%	6,2%	0,0%
Canada	38	2,8%	2,8%	5,0%	1,3%
Chile	21	5,7%	6,4%	8,8%	1,1%
China	28	3,9%	3,0%	7,0%	0,5%
Colombia	12	9,8%	11,1%	13,5%	3,2%
Costa Rica	9	4,2%	4,0%	6,1%	2,5%
Croatia	11	1,5%	1,5%	3,1%	0,0%
Czech Republic	13	4,1%	4,2%	4,7%	2,9%
Denmark	17	1,4%	1,5%	3,0%	0,0%
Dominican Rep.	9	7,5%	7,0%	9,1%	6,5%
Ecuador	13	7,8%	7,2%	10,9%	5,0%
Egypt	12	14,6%	14,7%	16,6%	11,0%
Estonia	28	1,4%	1,5%	3,0%	0,0%
Ethiopia	6	9,5%	9,5%	13,0%	6,0%
Finland	37	1,4%	1,5%	3,0%	0,0%
France	92	1,3%	1,5%	3,0%	0,0%
Georgia	8	4,3%	3,8%	5,9%	3,3%
Germany	283	1,2%	1,0%	3,0%	0,0%
Ghana	6	18,8%	19,0%	21,4%	14,0%
Greece	41	1,6%	1,5%	4,5%	0,0%
Hong Kong	15	2,9%	2,8%	4,9%	0,4%
Hungary	13	4,9%	5,8%	7,2%	1,0%
Iceland	7	5,8%	5,8%	6,2%	5,4%
India	37	5,6%	6,8%	7,4%	1,4%
Indonesia	15	5,5%	6,3%	7,3%	1,3%
Ireland	47	1,5%	1,5%	3,0%	0,0%
Israel	15	2,7%	2,5%	3,6%	2,0%
Italy	67	1,7%	1,5%	3,1%	0,0%
Jamaica	9	3,5%	3,0%	5,1%	2,5%
Japan	27	0,5%	0,4%	1,5%	0,2%
Kazakhstan	10	4,5%	4,0%	6,1%	3,5%
Kenya	10	13,9%	13,4%	15,8%	12,8%
Korea, (South)	10	3,7%	3,3%	5,3%	2,7%
Kuwait	7	1,3%	1,5%	2,1%	0,3%
Latvia	10	1,9%	2,1%	3,0%	0,5%
Lithuania	37	2,5%	2,1%	4,1%	1,5%
Luxembourg	39	1,4%	1,5%	3,0%	0,0%
rth Macedonia	6	5,6%	5,5%	7,1%	4,5%
Malaysia	15	4,2%	4,3%	6,5%	0,8%
Mauritius	10	4,0%	3,5%	5,6%	3,0%
Mexico	32	7,4%	7,7%	9,5%	1,5%
Mongolia	14	10,3%	9,9%	12,2%	9,2%
Montenegro	11	2,8%	2,5%	4,4%	1,5%
Morocco	9	3,1%	2,9%	5,1%	1,5%
Mozambique	9	9,5%	9,0%	11,2%	8,5%
Netherlands	58	1,3%	1,2%	3,5%	0,0%
New Zealand	14	3,8%	3,4%	5,6%	2,7%
Nigeria	9	9,8%	11,2%	13,6%	3,9%
Norway	18	1,7%	1,5%	4,0%	0,0%
Pakistan	7	12,6%	12,9%	13,3%	12,0%
Panama	12	7,1%	6,6%	8,7%	6,1%
Peru	23	6,4%	7,2%	10,0%	2,0%
Phillipines	18	6,3%	6,3%	8,6%	3,0%
Poland	25	4,0%	3,8%	8,0%	0,2%
Portugal	44	1,6%	1,5%	4,0%	0,0%

Qatar	12	4,0%	3,6%	5,8%	2,8%
Romania	14	7,2%	7,8%	10,3%	4,0%
Russia	15	5,8%	5,0%	10,2%	4,0%
Saudi Arabia	12	4,3%	3,9%	6,1%	3,5%
Serbia	12	1,8%	1,8%	3,0%	0,8%
Singapore	9	3,2%	2,7%	4,8%	2,2%
Slovakia	24	2,7%	2,8%	3,0%	1,9%
Slovenia	18	2,6%	2,8%	3,0%	1,1%
South Africa	16	9,1%	9,5%	12,0%	5,0%
Sri Lanka	13	9,5%	9,0%	11,2%	8,5%
Sweden	66	1,4%	1,5%	3,0%	0,0%
Switzerland	56	1,4%	1,5%	3,0%	0,0%
Taiwan	16	1,5%	1,3%	3,3%	0,7%
Tanzania	13	8,0%	7,5%	9,7%	7,0%
Thailand	14	3,1%	3,1%	5,2%	0,5%
Trinidad and Tobago	9	4,9%	5,0%	6,0%	4,0%
Tunisia	7	6,7%	6,9%	9,1%	2,7%
Turkey	11	22,6%	23,4%	26,1%	16,0%
Uganda	12	11,5%	11,0%	13,2%	10,4%
Ukraine	9	20,1%	19,0%	32,0%	14,0%
United Arab Emirates	11	2,9%	2,8%	5,1%	0,5%
United Kingdom	69	2,4%	2,5%	5,0%	0,5%
Uruguay	19	5,4%	5,0%	9,1%	3,5%
Venezuela	10	32,7%	40,0%	48,0%	10,4%
Vietnam	6	3,7%	3,2%	5,3%	2,7%
Zambia	6	24,1%	25,9%	28,5%	12,0%

Table 4. Km [Required return to equity (market): R_F + MRP)] used for 95 countries in 2022

Km	Average	Km	Average	Km	Average
USA	8,3%	Ghana	34,6%	Panama	14,5%
Spain 2022	8,8%	Greece	8,2%	Peru	13,4%
AbuDhabi	8,2%	Hong Kong	9,4%	Phillipines	12,5%
Andorra	7,8%	Hungary	11,6%	Poland	9,7%
Angola	22,5%	Iceland	12,3%	Portugal	7,8%
Argentina	58,3%	India	12,5%	Qatar	9,6%
Australia	9,8%	Indonesia	13,2%	Romania	14,6%
Austria	7,6%	Ireland	7,3%	Russia	20,0%
Bangladesh	15,0%	Israel	8,7%	Saudi Arabia	10,8%
Barbados	17,7%	Italy	7,7%	Serbia	7,7%
Belgium	7,3%	Jamaica	14,9%	Singapore	8,7%
Bolivia	16,1%	Japan	6,4%	Slovakia	8,8%
Bosnia	8,7%	Kazakhstan	12,3%	Slovenia	8,7%
Brazil	20,1%	Kenya	24,5%	South Africa	16,4%
Bulgaria	7,6%	Korea, (South)	9,7%	Sri Lanka	24,0%
Canada	8,5%	Kuwait	7,4%	Sweden	7,4%
Chile	13,2%	Latvia	8,1%	Switzerland	7,2%
China	12,6%	Lithuania	8,9%	Taiwan	8,2%
Colombia	16,5%	Luxembourg	7,2%	Tanzania	19,3%
Costa Rica	14,2%	Macedonia	14,5%	Thailand	10,2%
Croatia	7,6%	Malaysia	11,2%	Trinidad and Tobago	12,6%
Czech Republic	10,1%	Mauritius	11,4%	Tunisia	20,0%
Denmark	7,1%	Mexico	14,8%	Turkey	33,5%
Dominican Rep.	16,6%	Mongolia	23,2%	Uganda	23,3%
Ecuador	20,9%	Montenegro	12,0%	Ukraine	54,1%
Egypt	27,3%	Morocco	11,6%	United Arab Emirates	8,9%
Estonia	7,3%	Mozambique	24,0%	United Kingdom	8,4%
Ethiopia	21,8%	Netherlands	7,5%	Uruguay	12,7%

Finland	7,0%
France	7,6%
Georgia	13,1%
Germany	6,9%

New Zealand	9,5%
Nigeria	19,1%
Norway	7,5%
Pakistan	21,1%

Venezuela	58,8%
Vietnam	12,8%
Zambia	45,4%

2. Changes from 2015 to 2018, 2019, 2020, 2021 and 2022

Table 5 compares the results of the 2022 survey with the results of the surveys published in 2015, 2018, 2019, 2020 and 2021.

Table 5. Market Risk Premium (MRP) and Risk Free Rate (RF) (%)
Averages of the surveys of 2022, 2021, 2020, 2019, 2018 and 2015

	Av. 2022		Av. 2021		Av. 2020		Av. 2019		Av. 2018		Av. 2015	
	RF	MRP	RF	MRP	RF	MRP	RF	MRP	RF	MRP	RF	MRP
USA	2,7	5,6	1,8	5,5	1,9	5,6	2,7	5,6	2,8	5,4	2,4	5,5
Spain	2,1	6,7	1,0	6,4	1,3	6,3	1,7	6,4	2,1	6,7	2,2	5,9
Argentina	28,4	29,9	24,2	17,4	12,3	17,3	10,1	14,9	9,3	13,9	12,6	22,9
Australia	3,4	6,3	2,6	6,4	2,4	7,9	2,8	6,5	3,1	6,6	3,1	6,0
Austria	1,8	5,8	0,6	5,9	0,9	6,2	1,3	6,1	2,0	6,2	2,8	5,7
Belgium	1,4	5,8	0,6	5,9	0,9	6,2	1,2	6,2	1,6	6,2	1,3	5,5
Brazil	10,3	9,8	6,5	7,7	4,8	7,9	7,2	8,2	7,3	8,4	9,0	7,5
Canada	2,8	5,7	1,9	5,6	1,8	5,7	2,5	5,8	2,9	5,8	2,3	5,9
Chile	5,7	7,4	3,9	6,3	3,6	6,6	4,2	6,3	4,1	6,1	3,9	6,5
China	3,9	8,7	2,8	6,2	3,1	6,7	4,0	7,5	3,8	6,3	4,5	8,1
Colombia	9,8	6,7	6,9	6,9	6,3	8,2	6,2	7,7	6,7	8,7	3,8	8,3
Czech Rep.	4,1	6,0	2,0	5,8	1,8	6,4	2,4	6,3	2,6	5,9	1,8	5,6
Denmark	1,4	5,8	0,7	5,8	0,9	6,1	1,2	6,0	1,6	6,0	1,3	5,5
Finland	1,4	5,6	0,6	5,9	1,0	6,5	1,1	6,2	1,7	5,9	1,2	5,7
France	1,3	6,3	0,8	5,8	0,8	6,2	1,2	6,0	1,6	5,9	1,5	5,6
Germany	1,2	5,7	0,6	5,8	0,8	5,8	1,1	5,7	1,4	5,3	1,3	5,3
Greece	1,6	6,6	0,9	6,9	6,4	12,7	4,3	15,4	4,8	15,8	15,0	14,3
Hungary	4,9	6,7	3,3	7,1	3,1	7,4	4,0	7,9	3,6	7,9	0,6	8,8
India	5,6	6,9	5,6	7,3	4,8	7,0	6,5	8,3	6,8	7,9	7,4	8,4
Indonesia	5,5	7,7	5,9	7,0	6,3	7,6	7,2	9,0	6,8	8,8	7,5	8,9
Ireland	1,5	5,8	0,7	5,9	1,3	6,6	1,4	6,0	1,6	6,5	1,3	5,5
Israel	2,7	6,0	1,1	5,7	1,5	6,3	2,0	6,4	1,9	5,8	0,9	5,2
Italy	1,7	6,0	1,0	6,0	1,3	6,2	1,6	6,3	2,3	6,1	1,5	5,4
Japan	0,5	5,9	0,5	5,2	0,9	6,2	1,1	6,1	0,3	5,7	0,7	5,8
Korea (South)	3,7	6,0	2,4	5,9	2,0	6,1	2,5	6,6	2,4	6,4	2,3	6,2
Mexico	7,4	7,4	5,8	6,4	5,4	8,3	7,1	8,3	6,8	8,5	4,3	8,0
Netherlands	1,3	6,2	0,9	5,8	1,6	5,9	1,3	6,0	1,7	5,8	1,8	5,9
New Zealand	3,8	5,7	2,0	6,0	2,4	6,2	3,0	5,9	3,1	5,8	2,9	6,6
Norway	1,7	5,8	1,8	5,4	1,2	5,8	1,4	6,0	2,4	5,7	1,4	5,5
Peru	6,4	6,9	4,3	6,8	3,7	7,0	5,6	7,5	5,3	7,3	4,0	7,2
Poland	4,0	5,7	2,7	5,5	2,4	6,6	3,1	6,6	3,4	6,0	2,7	5,2
Portugal	1,6	6,2	1,4	6,8	1,6	7,1	2,6	7,5	3,2	7,2	1,6	5,7
Russia	5,8	14,2	5,7	8,1	5,9	7,8	8,3	8,5	7,8	8,7	7,4	9,7
South Africa	9,1	7,3	8,1	7,0	6,7	7,9	8,0	8,4	7,6	6,9	8,2	7,7
Sweden	1,4	6,0	0,9	7,5	1,0	6,1	1,3	6,1	1,8	7,1	1,1	5,4
Switzerland	1,4	5,8	0,1	5,2	0,9	6,1	1,1	6,2	1,1	6,9	1,1	5,4
Thailand	3,1	7,0	2,2	7,3	4,5	5,7	3,1	8,2	3,5	8,9	8,7	7,3
Turkey	22,6	11,0	17,7	9,5	10,9	10,3	11,2	9,6	10,3	7,7	7,8	9,3
UK	2,4	6,1	1,3	5,6	1,1	5,8	2,1	6,2	2,0	5,5	2,1	5,2
Uruguay	5,4	7,3	4,2	7,1	6,1	9,1	4,4	8,4	5,3	8,3	3,6	7,1
Venezuela	32,7	26,1	40,4	19,8	11,4	23,1	12,6	23,7	11,7	16,9	3,5	19,6

3. Previous surveys

2008	http://ssrn.com/abstract=1344209
2010	http://ssrn.com/abstract=1606563; http://ssrn.com/abstract=1609563
2011	http://ssrn.com/abstract=1822182; http://ssrn.com/abstract=1805852
2012	http://ssrn.com/abstract=2084213
2013	http://ssrn.com/abstract=914160
2014	http://ssrn.com/abstract=1609563
2015	https://ssrn.com/abstract=2598104
2016	https://ssrn.com/abstract=2776636
2017	https://ssrn.com/abstract=2954142
2018	https://ssrn.com/abstract=3155709
2019	https://ssrn.com/abstract=3358901
2020	https://ssrn.com/abstract=3560869
2021	https://ssrn.com/abstract=3861152
2022	https://ssrn.com/abstract=3803990

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.[3] Welch (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 4 of Fernandez et al (2011a) 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).

The magazine *Pensions and Investments* (12/1/1998) carried out a survey among professionals working for institutional investors: the average EEP was 3%. Shiller[4] 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

[3] At that time, the most recent Ibbotson Associates Yearbook reported an arithmetic HEP versus T-bills of 8.9% (1926–1997).

[4] 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.

4. Expected and Required Equity Premium: different concepts

Fernandez and F. Acín (2015) claim and show that Expected Return and Required Return are two very different concepts. Fernandez (2007, 2009b) claims that 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 (Ke). 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,

$P_0 = d_1 / (Ke - g)$, which implies: $IEP = d_1/P_0 + g - R_F$ (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.

5. Conclusion

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

This paper contains the statistics of a survey about the Risk-Free Rate (**RF**) and the Market Risk Premium (**MRP**) used in 2022 for **95 countries**. We got answers for 99 countries, but we only report the results for 95 countries with more than 6 answers.

Due to "Quantitative Easing", many respondents use for European countries a RF higher than the yield of the 10-year Government bonds. The coefficient of variation (standard deviation / average) of RF is higher than the CV of MRP for the Euro countries.

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, the undervaluation and the high ex-post risk premium are self fulfilling prophecies.

EXHIBIT 1. Mail sent on may 2022

Survey Market Risk Premium and Risk-Free Rate 2022

We are doing a **survey** about the **Market Risk Premium** (MRP or Equity Premium) and **Risk-Free Rate** that companies, analysts, regulators and professors use to calculate the **required return on equity** in different countries.

I would be grateful if you would kindly answer the following 2 questions. No companies, individuals or universities will be identified, and only aggregate data will be made public. I will send you the results in a month.

Best regards and thanks,

Pablo Fernandez. Professor of Finance. IESE Business School. Spain.

2 questions:

1. The Market Risk Premium that I am using in 2022
for USA is: _____%
for_____ is: _____ %
for_____ is: _____ %

2. The Risk-Free rate that I am using in 2022
for USA is: _____ %
for _____ is: _____ %
for _____ is: _____ %

EXHIBIT 2. Some comments and webs recommended by respondents

Equity premium: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html
http://www.market-risk-premia.com/market-risk-premia.html
http://www.marktrisikoprämie.de/marktrisikopraemien.html

US risk free rate: http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2015

risk free rate: http://www.basiszinskurve.de/basiszinssatz-gemaess-idw.html
http://www.econ.yale.edu/~shiller/
http://www.cfosurvey.org/pastresults.htm
http://alephblog.com/

I'm not much use for you because I don't add a market risk premium to a risk free rate to get a basic equity rate of return. Many years ago, I took your lessons to heart and stopped using any sort of build-up method, principally because it is backwards looking. Instead, I rely on the Pepperdine survey, along with my understanding of how investors think and my best judgement of the risks of a particular asset. I have not found any better way to do this.

Islamic Development Bank works under development mandate and therefore does not follow market based premium on pricing, and uses its internal costs as benchmark. In short, all of our member countries are given financing at the same pricing.

Our commercial bank can invest overnight funds in our excess balance account with the U.S. Federal Reserve Bank at 2.5%. Our overall cost of funds is 0.2%, yielding a spread of 2.3%. Our leverage ratio (equity/assets) is 9.63%. Hence, our pre-tax risk-free rate is 23.88% of equity. Our target is to earn a net interest margin (interest income less interest expense as a percentage of earning assets) of 4.00%, which yields a targeted asset yield of 4.2%, or 43.61% of equity.

Market risk premium = actual equity return - risk free rate

I want to explain the unusually high risk premium I am using in the US market (7%). In my opinion, the way that costs whether they be raw materials, labor, interest etc. process through the economy differently than a simple "add on" cost. I believe that as any cost increase requires a greater capital base to hold inventory or to produce goods and services, that the pass through is not just the actual cost but the cost plus an increment for a return on the greater capital base. Accordingly, the "cost" of money with interest rates so low is more likely than not to be higher in the future. Labor also with unemployment so low is more likely than not to be higher in the future. Therefore although I do not see traditional commodity inflation and labor costs have been unusually stable for this unemployment level, I believe the probability is higher of an increase than a decrease. Thus I have a higher than would be expected market risk premium to address the direction I think the pressures will move on the discount rate. Conversely, If wrong on the upward pressures on capital

returns; it would likely be due to slowing global growth and/or trade disruption of longer duration. In that event I again want a higher discount rate to reflect that greater risk potential. Interesting times we live in.

I do not use a MRP or a RF rate for three reasons:
1) I am retired.
2) I do not accept their validity.
3) The "new normal" makes no economic or financial sense.

I am an academic in a public university – I don't know of any University discount rate.

"The subject who is truly loyal to the Chief Magistrate will neither advise nor submit to arbitrary measures." Junius

Prima de riesgo que utilizo en España: diferencia de rentabilidad que ofrece el bono español respecto al alemán. Tipos de interés sin riesgo: los extraídos día a día del boletín de deuda pública española en operaciones de compra-venta al contado.

I don't value companies on this basis. I prefer to use price to earnings ratio.

In the Netherlands there is a discussion with the fiscal authorities. A lot of valuation experts use the MRP from your Survey. The Fiscal authorities accept that but want consequently also the use of the Rf from your survey. There is a lot of discussion when we use a normalized adjusted Rf.

Por tipo de interés sin riesgo se entiende en el corto plazo, pe 3 meses, al tipo de interés interbancario al plazo correspondiente para el área de referencia. En caso del euro, sería el EURIBOR y en caso de EEUU el Libor USD.
Hablando de riesgo soberano USA y Alemania son considerados Benchmarks, por lo que su prima de riesgo es 0 y por tanto se les considera que son libres de riesgo. (Excepto entre ellos cuando se habla de riesgo entre EUR y USD) Por ello, cuando hablamos de prima de riesgo de un país, pe. España, hablamos del diferencial de tipos que hay el bono español con el de Alemania, tomando el mismo plazo. Normalmente se utiliza el plazo estándar del 10 años.

Sigo las recomendaciones de Credit Swiss Global Investment Return Yearbook, en este caso, 2018, con un 3,5% de PRM. No me gustan las recomendaciones de Damodaran, cuando incluye un riesgo país a España mayor que el de, creo, Perú o Ecuador, El tipo de interés sin riesgo que utilizo es, para España, el de el bono alemán a 10 años, según leo es de 0,17%, aunque Credit Swiss, creo recordar utiliza otro....el de EEUU es de 2,73%.

The risk free rate is determined on the historical present value-equivalent base interest rates on the basis of a series of payments increasing with the selected growth rate over a period of 1,000 years. For the calculations, the spot rate from year 30 to year 1,000 is updated constantly based upon the valuation date.

Germany

Risk free rate	0.9%	20 y Bund	Investing.com/rates-bonds/germany-20-year-bond-yield (1-1-2018)
Adjustment	1.8%	Credit Suisse	Credit Suisse Global Investment Source book and Yield book 2016 – Range of estimated long term real rate government bonds 1900-2015 - globally diversified
Risk free rate Adjusted	**2.7%**		

I don't use the market risk premium. I use a hurdle rate of return and won't invest in investments that don't achieve that hurdle. I aspire to a 25% rate of return on my investments but will generally settle for 15%.

I use the relevant rate from each country/currency "risk-free" yield curve to discount the respective expected future cash flow: V0 = CF1/(1 + Rf1 + risk prem)^1 + CF2/(1 + Rf2 + risk prem)^2 + ... + CFt/(1 + Rft + risk prem)^t

The Rf that I am using in 2019 for USA is: 10 year historical average, US Treasuries 20-year notes.

I use the US Equity premium of Damodaran to avoid explanations or justifications to clients.

We only use ROS (Return on Sales).

Rf: 3%, of which 2% is a premium for the risk of manipulation of the interest rate market operated by the ECB with the Quantitative Easing.

Al tener limitación nacional al hacer inversiones, debemos emplear un tipo de interés sin riesgo alto. Al operar en mercados muy consolidados, con pocos operadores y con fuertes barreras de entrada, la prima de riesgo de mercado es muy alta.

En anteriores encuestas intenté ofreceros un tipo orientativo pero estos últimos años, después de la "experimentación" de tipos, de diferentes QE con tipos negativos… sólo tengo una certeza, que ya hemos comentado en muchas ocasiones: es muy difícil, o de dudosa utilidad, establecer un tipo de interés sin riesgo. Porque ¿Es normal que la Deuda Griega pague menos que la Deuda de USA? ¿Emisiones de Deuda del gobierno argentino a periodos larguísimos? ¿Deuda alemana o suiza en tipos negativos?…
Respecto a establecer una tasa que sirva como referencia, mantendría dos premisas: 1) El horizonte de inversión (una Tasa de referencia con el mismo plazo); 2) La seguridad en las estimaciones de los flujos de caja futuros del proyecto o inversión: en caso de menor confianza o duda en las estimaciones, mayor tasa de Descuento
Como norma, siempre tenemos en cuenta que la Renta variable ha sido en periodos muy largos el activo más rentable y, por tanto, a muy largo plazo es el Activo de "Menor riesgo"

Fascinating results. It is always interesting how investors and fund managers interpret the risk free rate of countries who have a negative prevailing long-term bond rate.

I am sure you that you are analysing the data and asking more questions that data can answer. It´s time to improve theory! I hope you will advance on it.

In my DCF valuation I use a global perspective of the marginal investor hence a global MRP.

I match rf with currency/inflation of cash flows being discounted and do not rely too much on current interest rates due to imperfections in the market. The MRP is made consistent with the level of interest rate I use in my model (E(Rm)-Rf) end end up with 6%

For equities we use a 10% as a cost of opportunity independently of the level of interest.

Rf: average last 5-year 10 year Treasury

I would like to help you with these two questions, but the problem is that in no any literature sources or analytical reports I met the calculation of Market Risk Premium and Risk Free rate for Uzbekistan.

The risk free rate that I use depends upon the timing of the future cash flows. I refer to the interest rate swap market and the US treasury market for starters. These days, one has to bear in mind currency volatility as that has a bigger effect on PV than market cost-of-capital.

We use the same Market Risk Premium for any country: 5,75% (source: Damodaran). Only Rf changes.

I am happy that you are asking the second question, because it accounts for what I consider to be a historical anomaly in the reply to the first question. I've concluded that the ERP was recently 3-4 percent. But I think US monetary policy (the various "QE" programs) have in the past couple of years distorted the traditional relationship between expected total market returns and the risk free rate. QE has been driving the US Treasury rate down, while the expected total market return has held steady, leading to a larger than usual market risk premium. This higher market risk premium is not a sign of higher market equity risk, but of the perverse impact of aggressive monetary policy.

For the US in 2015: MRP: 14% (as US equities are even more highly priced than last year).

Interest rates are artificially well below historic levels. Thus, bonds and equities values are artificially inflated.

I do not use "canned" rates applicable for a whole year. The rates I use are time-specific and case-specific, depending on conditions prevailing as of the valuation date.

I must confess I am still surprised with the rates suggested that are at the upper bound of respondent answers.

One hint: It might make sense to ask more precisely about the premium before/after personal income tax. For Germany the premium would differ and I am not sure how people would interpret the question.

The Risk-Free Rate we use is based on rates published by the Federal Reserve. We use the 20 year rate, currently 2.73%. The Equity Risk Premium we use is based on Duff & Phelps Annual Valuation Handbook.

For foreign countries, I generally look at it in dollar terms and assume that purchasing power parity held; hence, I'd use US rates. If I had to do it in a foreign currency, I would use the local 10-year treasury for the risk-free rate. I would use the US equity risk premium, adjust for inflation to real terms, and then adjust for foreign inflation to put it in local nominal terms.

USA. MRP 6.4% - essentially bloomberg/ibbotson number. RF 10 year U.S. treasury yield.

Exijo un mínimo de un 15% de retorno neto de impuestos a cualquier acción, independientemente de su nacionalidad.

No existe un activo libre de riesgo en absoluto. Y menos en estos distorsionados entornos debido a la intervención de los bancos centrales. En mi modesta opinión, creo que nunca sido tan riesgosa la renta fija como lo es ahora.

No creo especialmente en el modelo de CAPM y prefiero usar una cifra basada en el sentido común.

Market Risk Premium for any market is not salubrious for peace or mind.
https://comcom.govt.nz/__data/assets/pdf_file/0029/282674/5B20225D-NZCC-12-Cost-of-capital-determination-EDBs-and-WIAL-3-May-2022.pdf.
https://indialogue.io/clients/reports/public/5d9da61986db2894649a7ef2/5d9da63386db2894649a7ef5

The CAPM is wrongly derived from very beginning (basically, CAPM is the first order condition for optimal portfolio decision (which must have a unique solution of mean-variance efficient portfolio) with its unique solution of market portfolio. CAPM is, of course, a tautology even the market portfolio is mean-variance efficient, not an asset pricing no matter market portfolio is mean-variance efficient or no. In sum, CAPM is theoretical useless.

En Uruguay la práctica más aceptada es descontar flujos convertidos a USD dada la debilidad de la moneda local y dolarizacion de la economía.

Your research over the years has been enlightening. It would be interesting to see the "meta" research on your data, that is, an analysis of the cross-section / time series to determine if there is any information embedded in the disperse responses that you receive, e.g. for forecasting or determining whether the consensus is correct over time.

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