DATA UPDATE 4 FOR 2023: COUNTRY RISK

Globalization's dark side!

A confession...

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- I describe myself as a dabbler, and it does get in the way of my best laid plans. A few weeks ago, I posted my first data update pulling together what I had learned from looking at the data in 2023, and promised many more on the topic.
- In the month since, I have added two more posts, one on US equities and one on interest rates, but my attention has been drawn away by other interesting stories.
 - Thus, I took a detour to value Tesla, around the time of their most recent earnings report on January 26, and added a second post to respond to the pushback that I got.
 - About a week and a half ago, just as I was getting ready to get started on my fourth data update, I got distracted again, this time by a story of a short seller (Hindenburg) targeting one of India's most visible companies (Adani Group)
 - Whether you think Hindenburg's short selling thesis against the Adani Group has legs, it is undeniable that the fate and value of this family group's companies is intertwined with the India story. A strongly growing India needs massive investments in infrastructure to succeed, and the Adani Group seemed uniquely qualified because of its perceived capacity to deliver on its promises, as well as its political connections.

Country Risk: The Foundations

- There is risk in investing in every country in the world,
 with the differences being one of degree.
 - Thus, you would be making a mistake, if you assume that this discussion only applies if you are investing in India, Brazil or Belarus, and that it does not, if your investing is in the United States, Germany or Australia.
 - The developed/emerging market divide was created for convenience, and while it sometimes has consequential effects, as is sometimes the case when a company is reclassified as developed from emerging, or vice versa, much of what I will say about how governments, legal systems and regulatory frameworks can affect corporate value applies to all countries.

Country Risk: Determinants

Political Structure

- The degree of political freedom/democracy affects business risk, but the <u>effects can cut both ways</u> (good and bad).
- Democracies expose businesses to <u>more</u> <u>continuous risk</u>, as laws and regulations can change, when elections create government changes.
- Authoritarian regimes often offer the promise of predictability, and less risk on a period-to-period basis, but face <u>more discontinuous risk</u>, since regime change is often violent and significantly disruptive.

Corruption

- Corruption operates as a <u>hidden tax</u>, reducing profitability and value for private businesses
- Businesses operating in corrupt locales face a choice of either accepting corruption as part of the cost of doing business or operating at a disadvantage to competitors who are less scruplous.

Country Risk

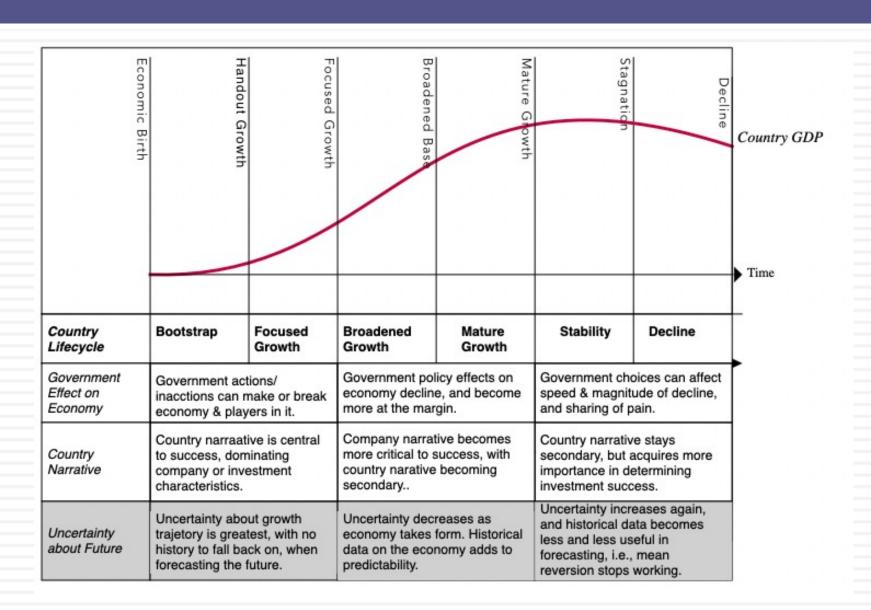
War & Violence

- Operating a business in a country that is more <u>exposed to violence</u>, from war, terrorism or internal strife, is more difficult than operating that business in a more peaceful environment.
- Businesses will face higher costs in operations and/ or from trying to insure themselves against violence.

Legal & Property Rights

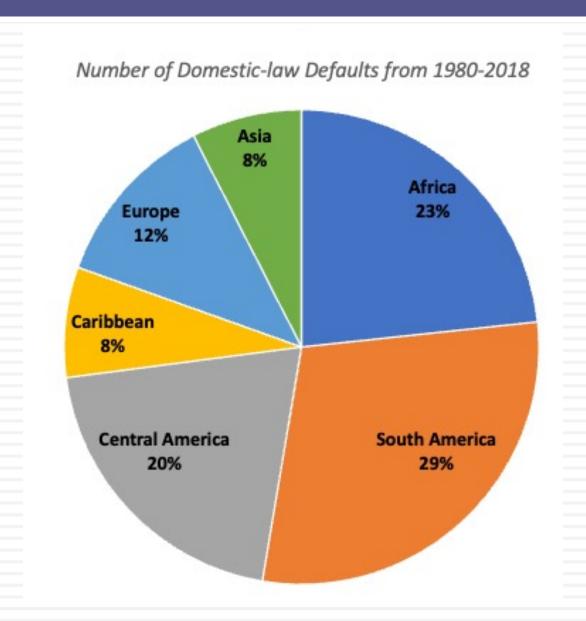
- The value of a private business is dependent on a legal system that <u>respects property rights and</u> <u>enforces those rights</u>.
- In a country where there are no or weak property rights or that has a <u>legal system that does not</u> <u>enforce those rights</u>, businesses face more risks and have less value.
- Timeliness in enforcing legal rights matters as much as the due process, since rights not enforced in a timely manner provide weak protection.

A Country Life Cycle...

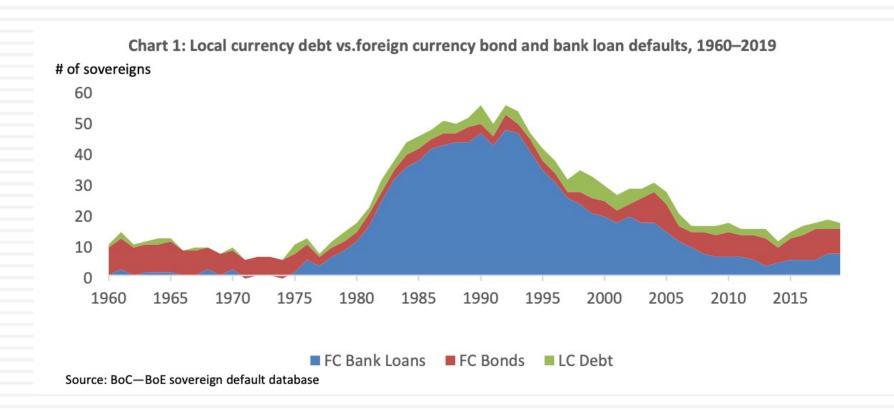


History of Sovereign Default: Geography

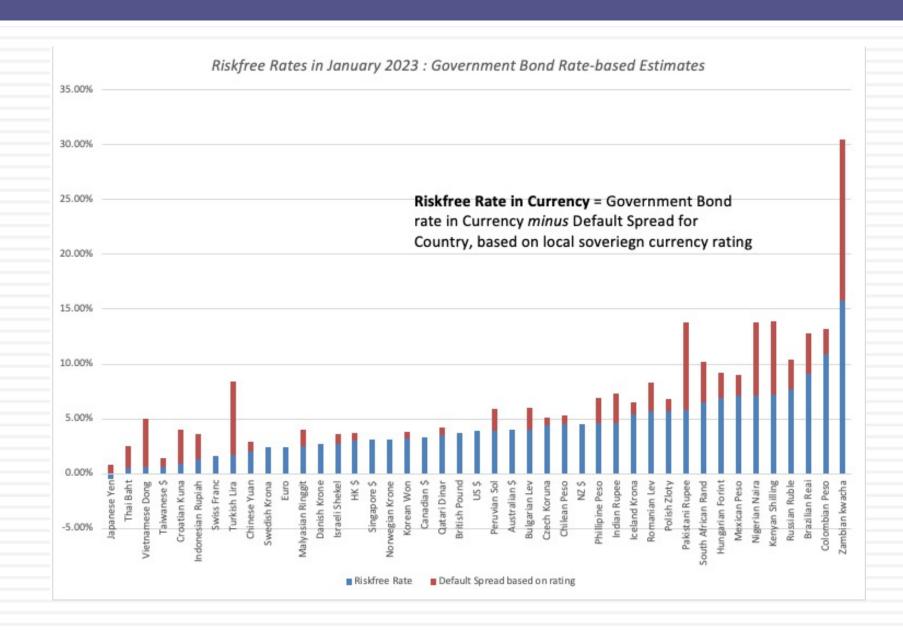
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History of Default Risk: Currency



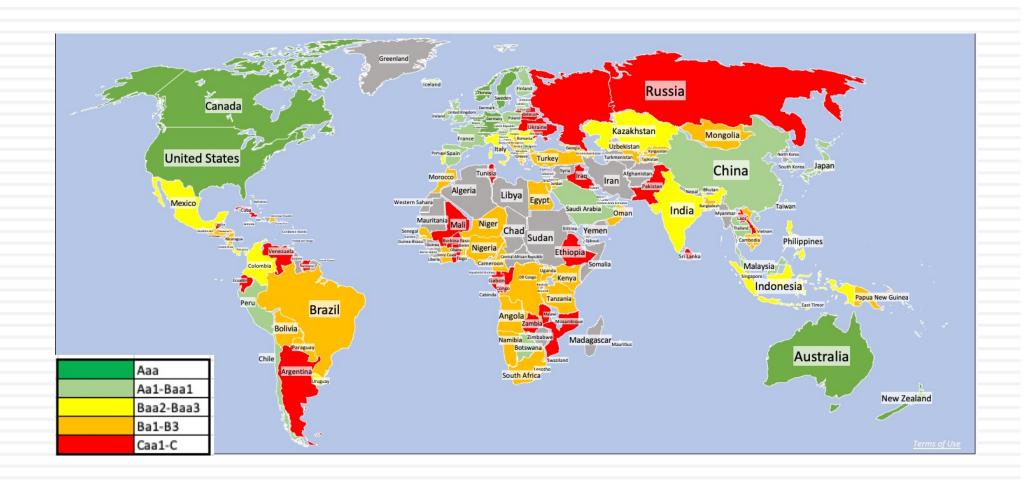
Riskfree Rates in Currencies



Sovereign Ratings

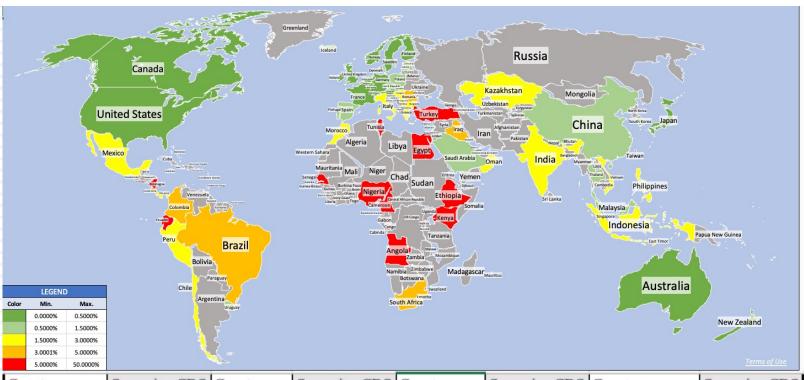
- The ratings agencies that rate corporate default with ratings have also had a long history of assessing sovereign default risk, with ratings, with the numbers of countries rated increasing dramatically over time, with the number of countries rated by Moody's (S&) increasing from 33 (35) in 1990 to 152 (131) at the start of 2023.
- Sovereign ratings, like corporate ratings, range from Aaa (AAA) in Moody's (S&P's) scale, to D (in default, with a couple of differences in how you read the ratings:
 - While each company generally gets one rating, countries are usually assigned two ratings, one for local currency borrowing and one for foreign currency borrowing.
 - The fundamentals that feed corporate ratings come primarily from its financial disclosures, though qualitative factors play a role. Sovereign ratings start with quantitative measures of a country's economic standing, but there are far more non-financial forces that seem to come into play.

Sovereign Ratings in January 2023



Sovereign CDS Spreads

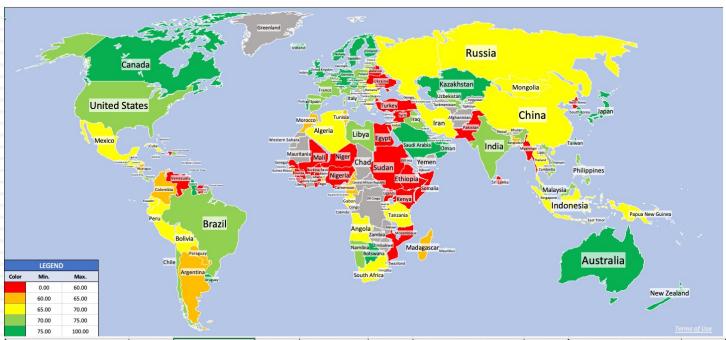
- The sovereign CDS market, a relatively recent entrant into the sovereign default risk game, has for the last two decades offered investors a market where they can buy insurance against default risk by sovereigns.
- By doing so, provided a constantly updated, albeit noisy, measure of the default spreads of countries.
 - In January 2023, there were 76 countries with sovereign CDS spreads available on the market.



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Country	Sovereign CDS	Country	Sovereign CDS	Country	Sovereign CDS	Country	Sovereign CDS
Abu Dhabi	0.78%	Egypt	8.01%	Kenya	7.60%	Qatar	0.79%
Angola	6.55%	El Salvador	27.46%	Korea	0.68%	Romania	3.17%
Australia	0.34%	Estonia	1.76%	Kuwait	0.79%	Rwanda	5.42%
Austria	0.24%	Ethiopia	28.33%	Latvia	1.37%	Saudi Arabia	0.96%
Bahrain	2.78%	Finland	0.34%	Lithuania	1.45%	Senegal	5.39%
Belgium	0.37%	France	0.42%	Malaysia	1.24%	Serbia	2.93%
Brazil	3.52%	Germany	0.28%	Mexico	2.11%	Slovakia	0.75%
Bulgaria	1.50%	Greece	1.97%	Morocco	2.53%	Slovenia	1.00%
Cameroon	6.68%	Hong Kong	0.71%	Netherlands	0.26%	South Africa	3.51%
Canada	0.36%	Hungary	2.43%	New Zealand	0.39%	Spain	0.82%
Chile	1.76%	Iceland	0.73%	Nicaragua	6.27%	Sweden	0.26%
China	1.11%	India	1.67%	Nigeria	8.52%	Switzerland	0.17%
Colombia	3.65%	Indonesia	1.75%	Norway	0.28%	Thailand	0.87%
Costa Rica	4.35%	Iraq	4.69%	Oman	2.37%	Tunisia	8.69%
Croatia	1.34%	Ireland	0.43%	Panama	1.79%	Turkey	5.30%
Cyprus	1.33%	Israel	0.67%	Peru	1.94%	United Kingdom	0.36%
Czech Republic	0.62%	Italy	1.84%	Philippines	1.64%	United States	0.32%
Denmark	0.23%	Japan	0.31%	Poland	1.45%	Uruguay	1.43%
Ecuador	16.93%	Kazakhstan	2.70%	Portugal	0.81%	Vietnam	2.07%

Composite Country Risk

- While default risk measures are widely available and used, they can be rightly challenged as taking too narrow a view of risk. After all, there are countries that score low on the default risk dimension but are exposed to political and economic risks that are considerable, as is the case with much of the oil-rich countries of the Middle East.
- There are no easy remedies for this problem, but there are services that generate country risk scores that bring in multiple measures of risk.
- While the Economist, the World Bank and private services provide country risk scores, I will stay with Political Risk Services, a data service I have used for a long time, more because of my familiarity with it than for any perceived superiority in how it measures risk.



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Country	PRS Score	Country	PRS Score	Country	PRS Score	Country	PRS Score	Country	PRS Score	I
Abu Dhabi	#N/A	Congo (Republic of)	#N/A	Indonesia	68.25	Montenegro	#N/A	Somalia	52.00	
Albania	67.75	Cook Islands	#N/A	Iran	66.50	Montserrat	#N/A	South Africa	67.25	ı
Algeria	69.25	Costa Rica	72.00	Iraq	71.00	Morocco	64.50	Spain	72.75	
Andorra (Principality of)	#N/A	Côte d'Ivoire	#N/A	Ireland	82.25	Mozambique	54.50	Sri Lanka	48.50	
Angola	68.00	Croatia	73.75	Isle of Man	#N/A	Myanmar	55.75	St. Maarten	#N/A	ĺ
Argentina	63.75	Cuba	69.25	Israel	76.00	Namibia	71.75	St. Vincent & the Grenadines	#N/A	
Armenia	60.00	Curacao	#N/A	Italy	73.50	Netherlands	79.75	Sudan	43.00	Ĺ
Aruba	#N/A	Cyprus	70.00	Jamaica	72.25	New Zealand	76.00	Suriname	58.50	Ĺ
Australia	81.25	Czech Republic	75.50	Japan	76.25	Nicaragua	62.75	Swaziland	#N/A	Ĺ
Austria	78.50	Denmark	84.25	Jersey (States of)	#N/A	Niger	57.25	Sweden	81.00	ſ
Azerbaijan	72.50	Dominican Republic	72.50	Jordan	64.50	Nigeria	59.50	Switzerland	87.25	Γ
Bahamas	71.00	Ecuador	68.25	Kazakhstan	76.00	Norway	87.00	Syria	43.75	ſ
Bahrain	68.75	Egypt	57.75	Kenya	58.25	Oman	78.25	Taiwan	84.25	ſ
Bangladesh	62.50	El Salvador	63.75	Korea	#N/A	Pakistan	51.00	Tajikistan	#N/A	ſ
Barbados	#N/A	Estonia	71.50	Korea, D.P.R.	51.00	Panama	73.50	Tanzania	65.00	ſ
Belarus	57.00	Ethiopia	58.50	Kuwait	80.75	Papua New Guinea	69.25	Thailand	65.00	ſ
Belgium	74.50	Fiji	#N/A	Kyrgyzstan	#N/A	Paraguay	64.25	Togo	63.25	ſ
Belize	#N/A	Finland	78.25	Latvia	71.50	Peru	68.00	Trinidad and Tobago	#N/A	ſ
Benin	#N/A	France	72.25	Lebanon	41.25	Philippines	70.75	Tunisia	61.25	ĺ
Bermuda	#N/A	Gabon	66.50	Liberia	58.00	Poland	71.00	Turkey	54.25	ĺ
Bolivia	66.50	Gambia	65.00	Libya	70.75	Portugal	75.50	Turks and Caicos Islands	#N/A	ĺ
Bosnia and Herzegovina	#N/A	Georgia	#N/A	Liechtenstein	#N/A	Qatar	78.75	Uganda	59.25	ſ
Botswana	77.00	Germany	78.75	Lithuania	70.25	Ras Al Khaimah (Emirate of)	#N/A	Ukraine	51.75	ſ
Brazil	70.00	Ghana	58.75	Luxembourg	86.00	Romania	66.75	United Arab Emirates	82.25	ſ
Brunei	79.50	Greece	68.00	Macao	#N/A	Russia	66.00	United Kingdom	76.75	ſ
Bulgaria	70.75	Guatemala	71.00	Macedonia	#N/A	Russia	66.00	United States	71.75	ſ
Burkina Faso	59.50	Guernsey (States of)	#N/A	Madagascar	62.50	Rwanda	#N/A	Uruguay	75.25	ſ
Cambodia	#N/A	Guinea	57.25	Malawi	51.00	Saudi Arabia	85.50	Uzbekistan	72.50	ſ
Cameroon	60.25	Guinea-Bissau	64.00	Malaysia	73.50	Senegal	58.25	Venezuela	58.00	ſ
Canada	82.00	Guyana	75.75	Maldives	#N/A	Serbia	#N/A	Vietnam	70.75	ĺ
Cape Verde	#N/A	Haiti	54.25	Mali	58.75	Sharjah	#N/A	Yemen, Republic	48.25	ĺ
Cayman Islands	#N/A	Honduras	66.75	Malta	74.75	Sierra Leone	53.50	Zambia	62.75	ĺ
Chile	71.75	Hong Kong	74.00	Mauritius	#N/A	Singapore	85.75	Zimbabwe	61.50	ľ
China	69.50	Hungary	71.50	Mexico	68.25	Slovakia	68.75			İ
Colombia	64.00	Iceland	80.50	Moldova	59.00	Slovenia	73.00			ľ
Congo (Democratic Republic of)	#N/A	India	70.25	Mongolia	65.00	Solomon Islands	#N/A			İ

Equity Risk: From default spreads to equity risk premiums

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ERP Estimation Procedure - January 1, 2023

Step 1: Mature Market Premium Step 2: Assess country risk Step 3: Convert country risk measure into an additional country risk premium for equity Step 4: Estimate an ERP for country

Estimate the implied equity risk premium for S&P 500

On Jan 1, 2023, the implied ERP for S&P 500 was 5.94% If sovereign rating is AAA

ERP for country = US ERP

Check the sovereign local currency rating for the country, with Moody's.

If rating not available on Moody's, check on S&P & convert into Moody's equivalent If sovereign rating is less than AAA, get a default spread for the country, using one of

- Spread on sovereign bond in US\$
- 2. CDS spread (Jan 1, 2023)
- 3. Ratings table

Relative Equity
Market Volatility =
Std dev of
emerging market
equity index/ Std
dev of emerging
market bond index

= US ERP + Default Spread * Relative Equity Market Volatility

ERP for country

In Jan 2023= 1.41

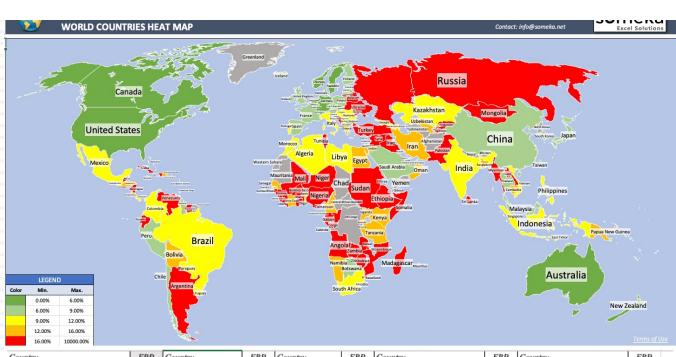
If there is no sovereign rating, get a country risk score from PRS.

Estimate an ERP based on PRS score

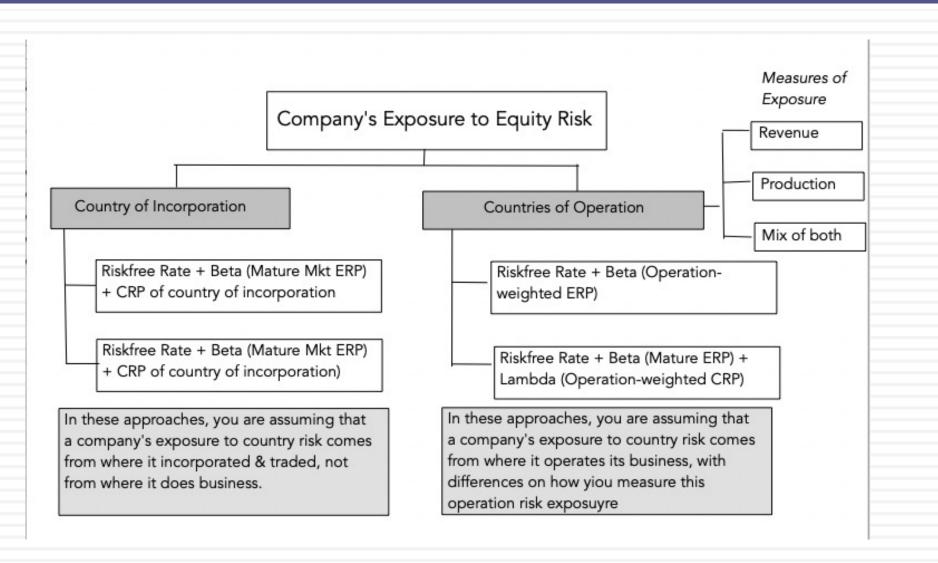
ERP for country = PRSbased ERP

Monthly

Semi Annually



Country	ERP	Country	ERP	Country	ERP	Country	ERP	Country	ERP
Abu Dhabi	6.79%	Congo (Republic of)	21.48%	Indonesia	9.23%	Mongolia	17.16%	Somalia	26.65%
Albania	13.71%	Cook Islands	13.71%	Iran	13.71%	Montenegro	13.71%	South Africa	11.13%
Algeria	11.13%	Costa Rica	15.43%	Iraq	18.88%	Montserrat	9.73%	Spain	8.70%
Andorra (Principality of)	9.23%	Côte d'Ivoire	12.15%	Ireland	7.16%	Morocco	10.26%	Sri Lanka	26.65%
Angola	17.16%	Croatia	9.23%	Isle of Man	6.97%	Mozambique	21.48%	St. Maarten	11.13%
Argentina	26.65%	Cuba	26.65%	Israel	7.16%	Myanmar	23.20%	St. Vincent & the Grenadines	17.16%
Armenia	12.15%	Curacao	9.23%	Italy	9.73%	Namibia	13.71%	Sudan	30.63%
Aruba	9.23%	Cyprus	10.26%	Jamaica	15.43%	Netherlands	5.94%	Suriname	23.20%
Australia	5.94%	Czech Republic	6.97%	Japan	7.16%	New Zealand	5.94%	Swaziland	17.16%
Austria	6.63%	Denmark	5.94%	Jersey (States of)	5.94%	Nicaragua	17.16%	Sweden	5.94%
Azerbaijan	10.26%	Dominican Republic	12.15%	Jordan	13.71%	Niger	17.16%	Switzerland	5.94%
Bahamas	13.71%	Ecuador	23.20%	Kazakhstan	9.23%	Nigeria	17.16%	Syria	30.63%
Bahrain	15.43%	Egypt	15.43%	Kenya	15.43%	Norway	5.94%	Taiwan	6.97%
Bangladesh	12.15%	El Salvador	23.20%	Korea	6.79%	Oman	12.15%	Tajikistan	17.16%
Barbados	18.88%	Estonia	7.16%	Korea, D.P.R.	26.65%	Pakistan	18.88%	Tanzania	15.43%
Belarus	26.65%	Ethiopia	21.48%	Kuwait	7.16%	Panama	9.23%	Thailand	8.70%
Belgium	6.97%	Fiji	13.71%	Kyrgyzstan	17.16%	Papua New Guinea	15.43%	Togo	17.16%
Belize	21.48%	Finland	6.63%	Laos	23.20%	Paraguay	10.26%	Trinidad and Tobago	11.13%
Benin	13.71%	France	6.79%	Latvia	8.01%	Peru	8.70%	Tunisia	18.88%
Bermuda	7.40%	Gabon	18.88%	Lebanon	30.63%	Philippines	9.23%	Turkey	17.16%
Bolivia	15.43%	Gambia	15.43%	Liberia	21.48%	Poland	7.40%	Turks and Caicos Islands	8.70%
Bosnia and Herzegovina	17.16%	Georgia	11.13%	Libya	11.13%	Portugal	9.23%	Uganda	15.43%
Botswana	8.01%	Germany	5.94%	Liechtenstein	5.94%	Qatar	6.97%	Ukraine	23.20%
Brazil	11.13%	Ghana	26.65%	Lithuania	7.40%	Ras Al Khaimah (Emirate of)	8.01%	United Arab Emirates	6.79%
Brunei	7.40%	Greece	12.15%	Luxembourg	5.94%	Romania	9.73%	United Kingdom	6.97%
Bulgaria	8.70%	Guatemala	10.26%	Macao	6.97%	Russia	18.88%	United States	5.94%
Burkina Faso	18.88%	Guernsey (States of)	5.94%	Macedonia	12.15%	Rwanda	15.43%		
Cambodia	15.43%	Guinea	21.48%	Madagascar	17.16%	Saudi Arabia	7.16%		
Cameroon	15.43%	Guinea-Bissau	17.16%	Malawi	26.65%	Senegal	12.15%		
Canada	5.94%	Guyana	8.70%	Malaysia	8.01%	Serbia	11.13%		
Cape Verde	17.16%	Haiti	26.65%	Maldives	18.88%	Sharjah	10.26%		
Cayman Islands	6.97%	Honduras	13.71%	Mali	21.48%	Sierra Leone	26.65%		
Chile	7.40%	Hong Kong	6.97%	Malta	7.40%	Singapore	5.94%		
China	7.16%	Hungary	9.23%	Mauritius	9.73%	Slovakia	7.40%		
Colombia	9.23%	Iceland	7.40%	Mexico	9.23%	Slovenia	8.01%		
Congo (Democratic Republic of)	17.16%	India	9.73%	Moldova	17.16%	Solomon Islands	18.88%		



The End Game for Government

- I know that I am going against the current political trend, but I believe that the end game for a good government is analogous to that of a good founder, and that is, once it has provided the structure and the basis for growth and prosperity, to make itself less central to the economy, not more so.
- Note that while this may seem like the libertarian position, there are significant differences.
 - I do believe that it is a government's role to craft laws and regulations that minimize the externalities that businesses create
 - Those laws/regulations should be few in number and changes, when they happen, should be reasoned and infrequent and enforcement should be fair and timely.
- There is nothing more unsettling than being a businessperson, consumer or citizen in a setting, where you are faced an avalanche of rules, sometimes contradictory, that are constantly changing, and enforced inconsistently.