Aswath Damodaran

COUNTRY RISK: A 2022 MID-YEAR UPDATE!

The times they are a'changin'

A Mid-year Ritual

- It has been my practice for the last two decades to take a detailed look at how risk varies across countries, once at the start of the year and once mid-year.
- In most years, the differences between the two updates are small, and often ignorable, but this year's update brings significant changes for many reasons.
 - The first is the retreat of risk capital, which I talked about in my last post, not only affects the flow of capital and repricing of the riskiest assets (high yield bonds, money losing companies) within each asset class, but also has consequences for the flow of capital across geographies, with riskier countries feeling the effect more than safer countries.
 - The second is that this has been a consequential year for country risk shifts, with Russia's invasion of Ukraine upending risk not only for those countries, but also in the region, and tumult in Sri Lanka and Pakistan playing out as risk to investors in both countries.

Country Risk: Drivers

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

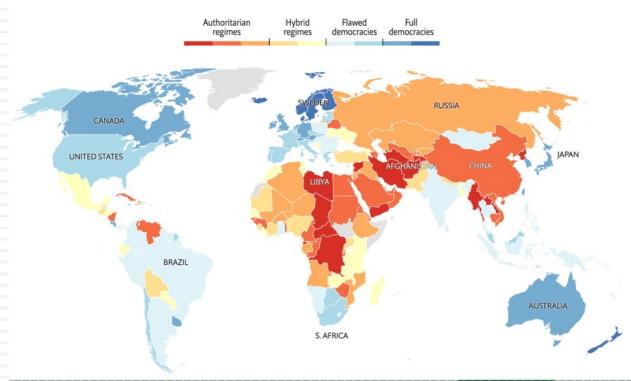
War & Violence

- Operating a business in a country that is more exposed to violence, 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 enforce those rights</u>, businesses face more risks and have less value.
- <u>Timeliness</u> in enforcing legal rights matters as much as the due process, since rights not enforced in a timely manner provide weak protection.

1. Political Freedom/Democracy



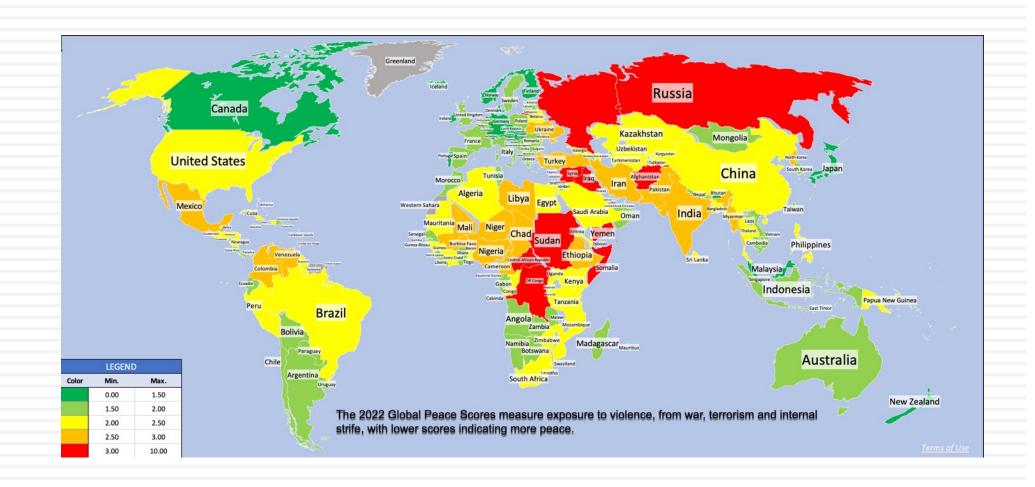
	EIU Democracy Index Score (Higher = More Democratic)						
Region	2021	2020	2016	2011	2006		
Asia & Australasia	5.46	5.62	5.74	5.51	5.44		
Eastern Europe	5.36	5.36	5.43	5.50	5.76		
Latin America	5.83	6.09	6.33	6.35	6.37		
Middle East & North Africa	3.41	3.44	3.56	3.62	3.53		
North America	8.36	8.58	8.56	8.59	8.64		
Western Europe	8.22	8.29	8.40	8.40	8.60		
Sub-Saharan Africa	4.12	4.16	4.37	4.32	4.24		
World average	5.28	5.37	5.52	5.49	5.52		

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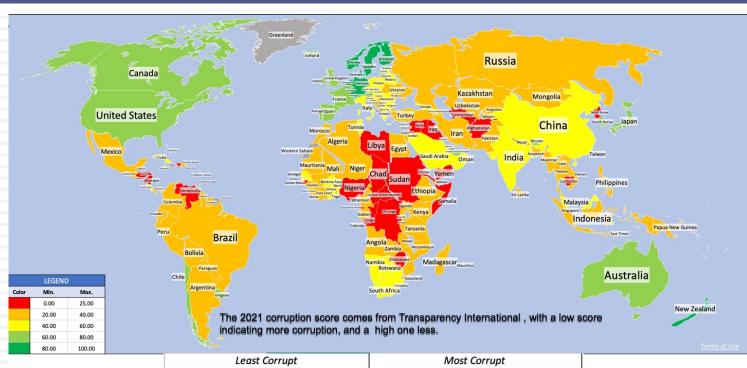
Risk and Democracy: The Trade Off

- As the Economist noted, a third of the world's population lived under authoritarian regimes and only 6.4% lived under full democracy, in 2021, with large differences across regions.
- □ From a business risk standpoint, though, the question of whether you would rather operate in a democracy or a dictatorship is a complicated one, with the former creating more continuous risk, as laws and regulations change, as elections often bring in new governments, and the latter more discontinuous risk, since regime changes, though less frequent, are often more wrenching and painful.

2. Violence and Risk

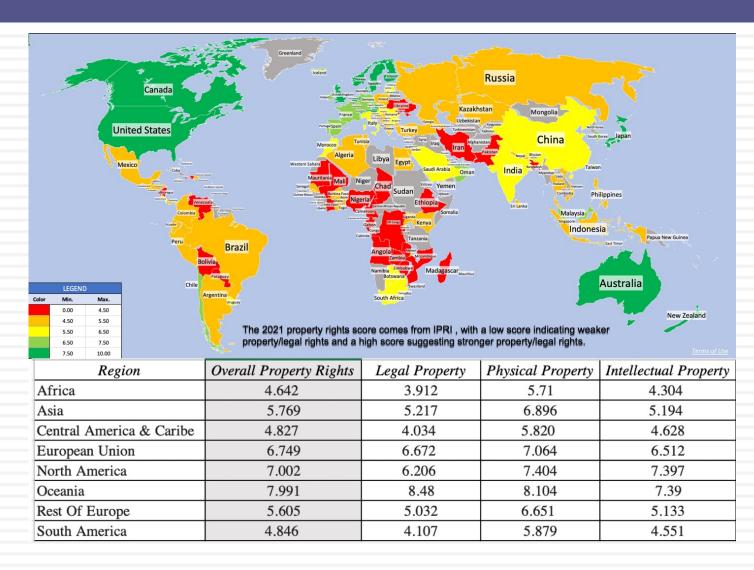


3. Corruption and Risk

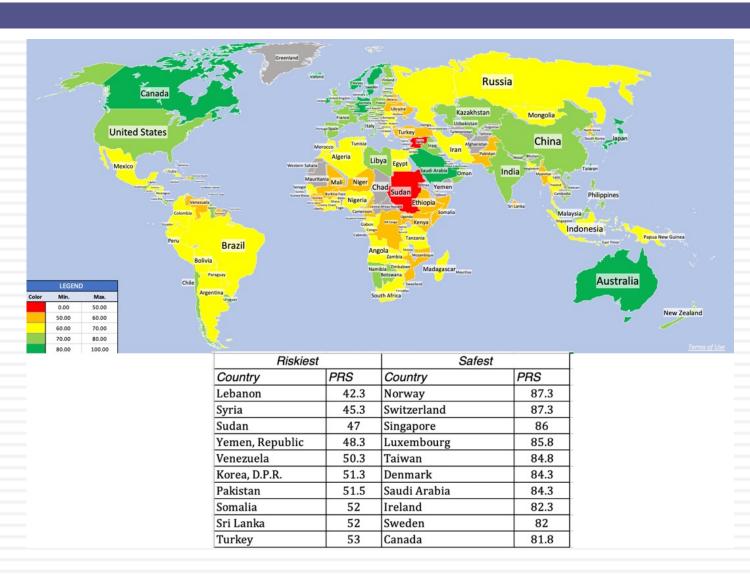


Least	Least Corrupt		Corrupt
Country	Corruption Score	Country	Corruption Score
Denmark	88	South Sudan	11
Finland	88	Somalia	13
New Zealand	88	Syria	13
Norway	85	Venezuela	14
Singapore	85	Afghanistan	16
Sweden	85	North Korea	16
Switzerland	84	Yemen	16
Netherlands	82	Equatorial Guinea	17
Luxembourg	81	Libya	17
Germany	80	Burundi	19

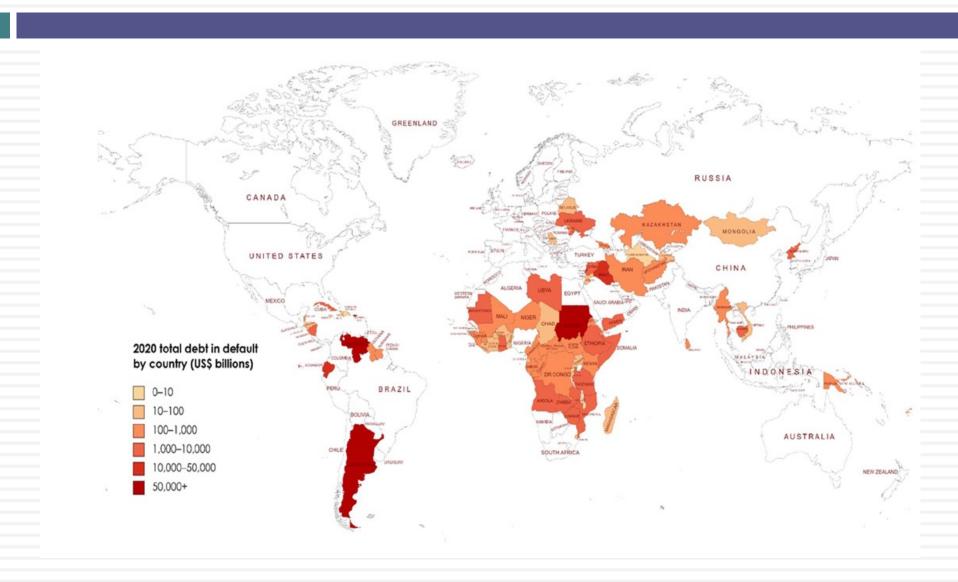
4. Legal Protection and Risk



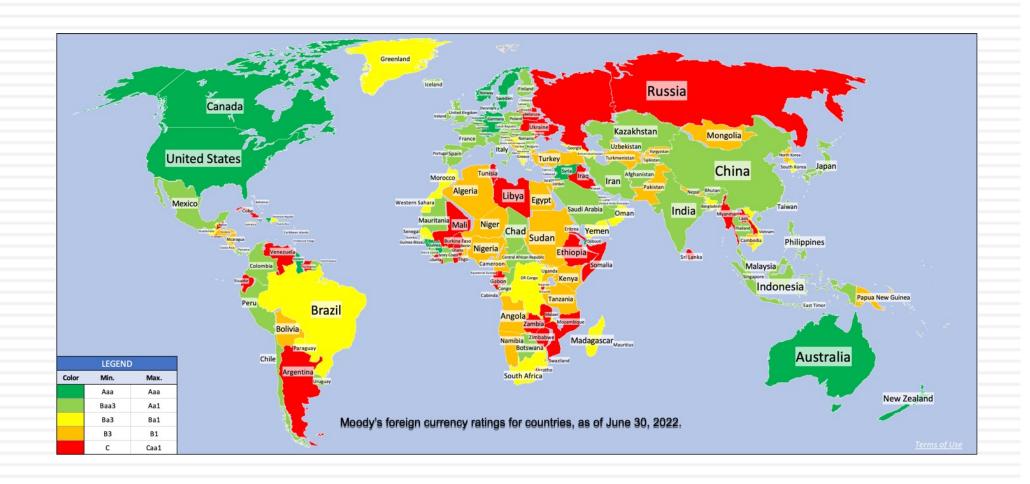
Country Risk Scores



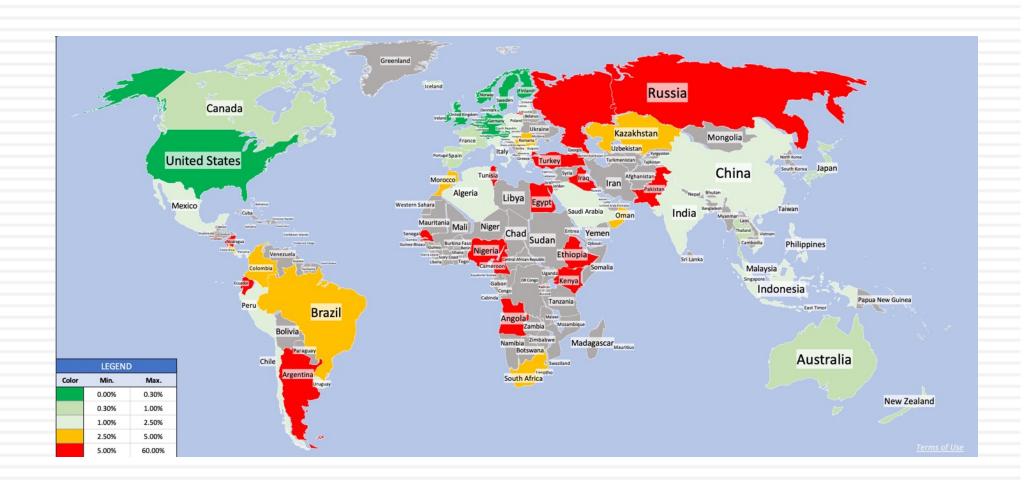
Country Risk: Default Risk Measures



1. Sovereign Ratings



2. Sovereign CDS Spreads



Country Risk to Equity Investors: Measurement Approach

ERP Estimation Procedure - July 1, 2022 Step 1: Mature Step 4: Estimate an ERP Step 2: Assess Step 3: Convert country risk measure into an Market Premium for country country risk additional country risk premium for equity ERP for country = US If sovereign rating is AAA **ERP** Estimate the implied equity risk premium Check the sovereign Relative Equity If sovereign rating is less than for S&P 500 local currency rating AAA, get a default spread for Market Volatility = ERP for country for the country, with the country, using one of Std dev of = US ERP Moody's. 1. Spread on sovereign bond emerging market + Default Spread * On July 1, equity index/ Std in US\$ Relative Equity Market 2022. the 2. CDS spread (July 1, 2022) dev of emerging Volatility implied ERP 3. Ratings table market bond index for S&P 500 In July 2022 = 1.16was 6.01% If rating not available on Moody's, check on S&P & convert If there is no sovereign rating, Estimate an ERP into Moody's ERP for country = PRSbased on PRS get a country risk score from equivalent based ERP PRS. score Semi Annually Monthly

ERP : July 2022

Andorra (Principality of)	Baa2	2.66%	8.67%	Italy	Baa3	3.07%	9.08%
Austria	Aal	0.56%	6.57%	Jersey (States of)	Aaa	0.00%	6.01%
Belgium	Aa3	0.84%	6.85%	Liechtenstein	Aaa	0.00%	6.01%
Cyprus	Bal	3.50%	9.51%	Luxembourg	Aaa	0.00%	6.01%
Denmark	Aaa	0.00%	6.01%	Malta	A2	1.18%	7.19%
Finland	Aal	0.56%	6.57%	Netherlands	Aaa	0.00%	6.01%
France	Aa2	0.69%	6.70%	Norway	Aaa	0.00%	6.01%
Germany	Aaa	0.00%	6.01%	Portugal	Baa2	2.66%	8.67%
Greece	Ba3	5.03%	11.04%	Spain	Baal	2.23%	8.24%
Guernsey (States of)	Aaa	0.00%	6.01%	Sweden	Aaa	0.00%	6.01%
Iceland	A2	1.18%	7.19%	Switzerland	Aaa	0.00%	6.01%
Ireland	A1	0.99%	7.00%	Turkey	B2	7.69%	13.70%
Isle of Man	Aa3	0.84%	6.85%	United Kingdom	Aa3	0.84%	6.85%
				W. Europe		1.16%	7.17%

EU	1.06%	7.07%
Euro Zone	1.07%	7.08%

Canada	Aaa	0.00%	6.01%
United States	Aaa	0.00%	6.01%
US & Canada		0.00%	6.01%

Caribbean 9.06% 15.07%

Argentina	Ca	16.78%	22.79%
Belize	Caa3	13.98%	19.99%
Bolivia	B2	7.69%	13.70%
Brazil	Ba2	4.21%	10.22%
Chile	A1	0.99%	7.00%
Colombia	Baa2	2.66%	8.67%
Costa Rica	B2	7.69%	13.70%
Ecuador	Caa3	13.98%	19.99%
El Salvador	Caa3	13.98%	19.99%
Guatemala	Bal	3.50%	9.51%
Honduras	B1	6.29%	12.30%
Mexico	Baal	2.23%	8.24%
Nicaragua	В3	9.09%	15.10%
Panama	Baa2	2.66%	8.67%
Paraguay	Bal	3.50%	9.51%
Peru	Baa1	2.23%	8.24%
Suriname	Caa3	13.98%	19.99%
Uruguay	Baa2	2.66%	8.67%
Venezuela	C	20.40%	26.41%
Latin America		5.20%	11.21%

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Country	Rating	CRP	ERP		
Angola	В3	9.09%	15.10%		
Benin	B1	6.29%	12.30%		
Botswana	A3	1.68%	7.69%		
Burkina Faso	Caa1	10.48%	16.49%		
Cameroon	B2	7.69%	13.70%		
Cape Verde	B3	9.09%	15.10%		
Congo (DR)	Caa1	10.48%	16.49%		
Congo (Republic of)	Caa2	12.59%	18.60%		
Côte d'Ivoire	Ba3	5.03%	11.04%		
Egypt	B2	7.69%	13.70%		
Ethiopia	Caa2	12.59%	18.60%		
Gabon	Caa1	10.48%	16.49%		
Ghana	Caa1	10.48%	16.49%		
Kenya	B2	7.69%	13.70%		
Mali	Caa2	12.59%	18.60%		
Mauritius	Baa2	2.66%	8.67%		
Morocco	Bal	3.50%	9.51%		
Mozambique	Caa2	12.59%	18.60%		
Namibia	B1	6.29%	12.30%		
Niger	В3	9.09%	15.10%		
Nigeria	B2	7.69%	13.70%		
Rwanda	B2	7.69%	13.70%		
Senegal	Ba3	5.03%	11.04%		
South Africa	Ba2	4.21%	10.22%		
Swaziland	B3	9.09%	15.10%		
Tanzania	B2	7.69%	13.70%		
Togo	B3	9.09%	15.10%		
Tunisia	Caal	10.48%	16.49%		
Uganda	B2	7.69%	13.70%		
Zambia	Ca	16.78%	22.79%		
Africa		7.36%	13.37%		

Albania B1 6.29% 12.30% Armenia Ba3 5.03% 11.04% Azerbaijan Ba2 4.21% 10.22% Belarus Ca 16.78% 22.79% Bosnia and Herzegovina B3 9.09% 15.10% Bulgaria Baa1 2.23% 8.24% Croatia Ba1 3.50% 9.51% Czech Republic Aa3 0.84% 6.85% Estonia A1 0.99% 7.00% Georgia Ba2 4.21% 10.22% Hungary Baa2 2.66% 8.67% Kazakhstan Baa2 2.66% 8.67% Kyrgyzstan B3 9.09% 15.10% Macedonia Ba3 5.03% 11.04% Moldova B3 9.09% 15.10% Montenegro B1 6.29% 12.30% Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08%				
Azerbaijan Ba2 4.21% 10.22% Belarus Ca 16.78% 22.79% Bosnia and Herzegovina B3 9.09% 15.10% Bulgaria Baal 2.23% 8.24% Croatia Bal 3.50% 9.51% Czech Republic Aa3 0.84% 6.85% Estonia A1 0.99% 7.00% Georgia Ba2 4.21% 10.22% Hungary Baa2 2.66% 8.67% Kyrgyzstan B3 9.09% 15.10% Kyrgyzstan B3 9.09% 15.10% Lithuania A2 1.18% 7.19% Macedonia Ba3 5.03% 11.04% Moldova B3 9.09% 15.10% Montenegro B1 6.29% 12.30% Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79%	Albania	B1	6.29%	12.30%
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Georgia Ba2 4.21% 10.22% Hungary Baa2 2.66% 8.67% Kazakhstan Baa2 2.66% 8.67% Kyrgyzstan B3 9.09% 15.10% Latvia A3 1.68% 7.69% Lithuania A2 1.18% 7.19% Macedonia Ba3 5.03% 11.04% Moldova B3 9.09% 15.10% Montenegro B1 6.29% 12.30% Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Uzbekistan B1 6.29% 12.30%	Czech Republic	Aa3	0.84%	6.85%
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Kazakhstan Baa2 2.66% 8.67% Kyrgyzstan B3 9.09% 15.10% Latvia A3 1.68% 7.69% Lithuania A2 1.18% 7.19% Macedonia Ba3 5.03% 11.04% Moldova B3 9.09% 15.10% Montenegro B1 6.29% 12.30% Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Uzbekistan B1 6.29% 12.30%	Georgia	Ba2	4.21%	10.22%
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Latvia A3 1.68% 7.69% Lithuania A2 1.18% 7.19% Macedonia Ba3 5.03% 11.04% Moldova B3 9.09% 15.10% Montenegro B1 6.29% 12.30% Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Kazakhstan	Baa2	2.66%	8.67%
Lithuania A2 1.18% 7.19% Macedonia Ba3 5.03% 11.04% Moldova B3 9.09% 15.10% Montenegro B1 6.29% 12.30% Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Uzbekistan B1 6.29% 12.30%	Kyrgyzstan	B3	9.09%	15.10%
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Poland A2 1.18% 7.19% Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Moldova	В3	9.09%	15.10%
Romania Baa3 3.07% 9.08% Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Montenegro	B1	6.29%	12.30%
Russia Ca 16.78% 22.79% Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Poland	A2	1.18%	7.19%
Serbia Ba2 4.21% 10.22% Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Romania	Baa3	3.07%	9.08%
Slovakia A2 1.18% 7.19% Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Russia	Ca	16.78%	22.79%
Slovenia A3 1.68% 7.69% Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Serbia	Ba2	4.21%	10.22%
Tajikistan B3 9.09% 15.10% Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Slovakia	A2	1.18%	7.19%
Ukraine Caa3 13.98% 19.99% Uzbekistan B1 6.29% 12.30%	Slovenia	A3	1.68%	7.69%
Uzbekistan B1 6.29% 12.30%	Tajikistan	В3	9.09%	15.10%
	Ukraine	Caa3	13.98%	19.99%
	Uzbekistan	B1	6.29%	12.30%
E. Europe & Russia 8.85% 14.86%	E. Europe & Russia		8.85%	14.86%

			11
Abu Dhabi	Aa2	0.69%	6.70%
Bahrain	B2	7.69%	13.70%
Iraq	Caa1	10.48%	16.49%
Israel	A1	0.99%	7.00%
Jordan	B1	6.29%	12.30%
Kuwait	A1	0.99%	7.00%
Lebanon	C	20.40%	26.41%
Oman	Ba3	5.03%	11.04%
Qatar	Aa3	0.84%	6.85%
Ras Al Khaimah (Emirate of)	A1	0.99%	7.00%
Saudi Arabia	A1	0.99%	7.00%
Sharjah	Baa3	3.07%	9.08%
United Arab Emirates	Aa2	0.69%	6.70%
Middle East		2.02%	8.03%

C	ountry	PR	S		CRP		ERP
А	lgeria	60	6.75	6	.29%	1	2.30%
В	runei	79	9.25	1	18%	7	.19%
G	iambia	60	5.25	6	.29%	1	2.30%
G	iuinea		58	1	2.59%	1	8.60%
G	iuinea-Bissau	6	3.5	9	.09%	1	5.10%
G	iuyana	7	5.75	2	.23%	8	.24%
Н	laiti		56	13	3.98%	19	9.99%
Ir	an	60	5.25	6	.29%	1	2.30%
K	orea, D.P.R.	5	1.25	10	6.78%	2	2.79%
L	iberia	51	8.25	1	2.59%	1	8.60%
L	ibya		71	4	.21%	10	0.22%
٨	/ladagascar	63	3.25	9	.09%	1	5.10%
Ν	/lalawi	50	5.75	13	3.98%	19	9.99%
٨	/lyanmar	5	7.75	1	2.59%	13	8.60%
S	ierra Leone	54	4.75	10	6.78%	2	2.79%
S	omalia		52	10	6.78%	2	2.79%
S	udan		47	20	0.40%	2	6.41%
S	yria	45	5.25	2	0.40%	2	6.41%
Υ	emen, Republic	41	3.25	2	0.40%	2	6.41%
Z	imbabwe	60	0.75	10	0.48%	1	6.49%
	18						
1	Bangladesh		Ba3	3	5.03%		11.04%
-				_		_	

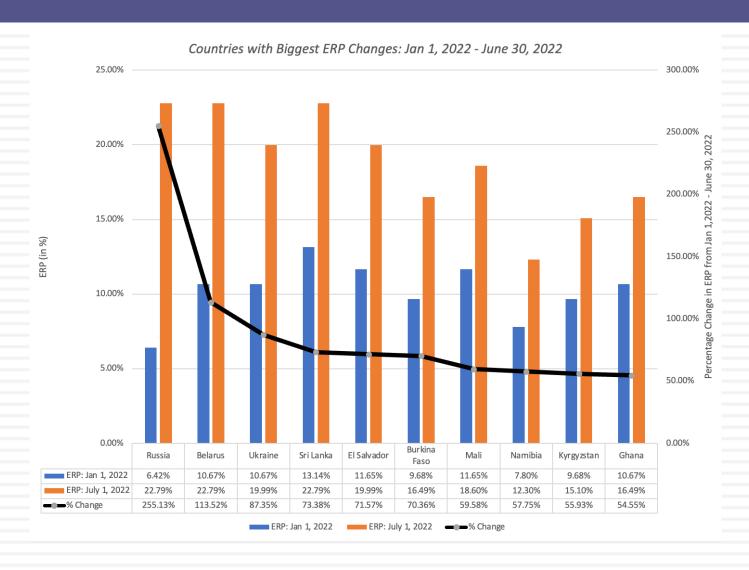
Cambodia	B2	7.69%	13.70%
China	A1	0.99%	7.00%
Fiji	B1	6.29%	12.30%
Hong Kong	Aa3	0.84%	6.85%
India	Baa3	3.07%	9.08%
Indonesia	Baa2	2.66%	8.67%
Japan	A1	0.99%	7.00%
Korea	Aa2	0.69%	6.70%
Laos	Caa3	13.98%	19.99%
Macao	Aa3	0.84%	6.85%
Malaysia	A3	1.68%	7.69%
Maldives	Caa1	10.48%	16.49%
Mongolia	B3	9.09%	15.10%
Pakistan	B3	9.09%	15.10%
Papua New Guinea	B2	7.69%	13.70%
Philippines	Baa2	2.66%	8.67%
Singapore	Aaa	0.00%	6.01%
Solomon Islands	Caa1	10.48%	16.49%
Sri Lanka	Ca	16.78%	22.79%
Taiwan	Aa3	0.84%	6.85%
Thailand	Baal	2.23%	8.24%
Vietnam	Ba3	5.03%	11.04%
Asia		1.56%	7.57%

Australia	Aaa	0.00%	6.01%
Cook Islands	Caa1	10.48%	16.49%
New Zealand	Aaa	0.00%	6.01%
Aus & NZ		0.00%	6.01%

Aswath Damodaran

Blue: Moody's Rating Red: Added Country Risk Green #: Total ERP

Biggest ERP Changes...

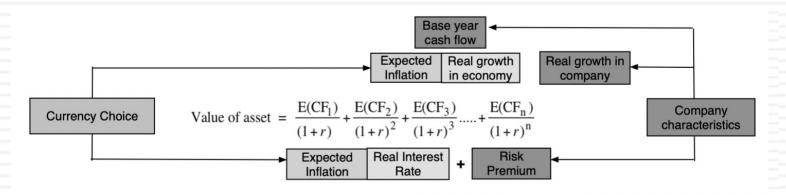


Currency Risk: Risk free Rates



Currency Consistency in Valuation

The biggest reason for differences in risk free rates across currencies is differences in expected inflation, with higher inflation currencies exhibiting higher riskfree rates. That said, the key to dealing with currency appropriately in valuation is to stay consistent, with cash flows and the discount rates incorporating the same expectations of inflation:

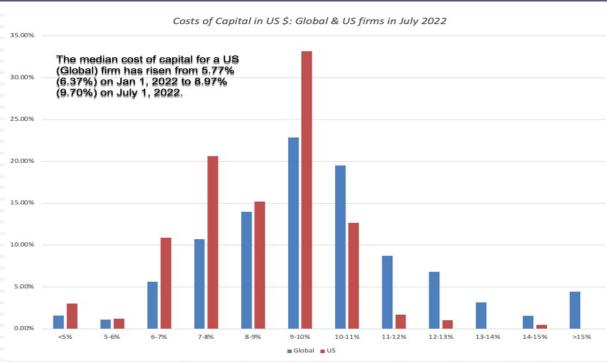


In short, changing the currency that you use to value a company should not fundamentally change your assessment of that company's value, and the reason that it often does in practice is because analysts are often sloppy in their treatment of currency, mixing growth rates in one currency with discount rates in another, and real with nominal numbers.

A General Principle: Keep focus

Equity Risk Premium (Price Return Required on Relative Risk Measure Risk free Rate of Risk in Equity Market) an Equity Investment Χ Function of the Cost of equity to Determined by Depends on geographies that you firms & required **businesses** that you currency of operate in. **return** for equity choose to enter & analysis debt load you carry. investors (1- Corporate Tax Rate) Cost of Borrowing Default Spread Risk free Rate = Χ Cost of debt to firms Determined by Tax rate of country or Depends on credit /default risk in countries you choose currency choice your firm. to borrow money in.

Cost of Capital: A July 2022 Update



Sub Group	#firms	1st Decile	!st Quartile	Median	3rd Quartile	9th Decile
Africa and Middle East	2,356	7.30%	8.61%	10.60%	13.12%	16.42%
Australia & NZ	1,878	7.08%	8.26%	9.09%	9.27%	10.21%
Canada	2,937	7.34%	8.78%	9.07%	9.23%	10.21%
China	7,043	7.32%	8.83%	10.09%	10.73%	12.00%
EU & Environs	6,000	6.99%	8.31%	9.61%	10.94%	13.39%
Eastern Europe & Russia	528	8.07%	9.55%	12.13%	20.32%	28.61%
India	3,982	7.32%	9.55%	11.19%	12.43%	13.18%
Japan	3,947	6.99%	8.44%	9.83%	10.63%	11.52%
Latin America & Caribbean	1,043	7.86%	9.09%	10.99%	13.83%	18.27%
Small Asia	9,408	7.81%	9.20%	10.37%	12.04%	14.68%
UK	1,255	7.51%	8.25%	9.95%	10.61%	11.30%
United States	7,229	6.76%	7.34%	8.97%	9.62%	10.24%
Global	47,606	7.20%	8.58%	9.70%	10.98%	12.84%

In conclusion...

- In January 2022, I had posted a similar histogram of costs of capital for global and US companies, reflecting risk free rates and risk premiums then, and the change, over the six months, has been extraordinary, with the median cost of capital for a US firm increasing from 5.77% to 8.97%, and for a global firm, from 6.37% to 9.70%.
- As I look across the many posts I have had this year on how inflation is changing market pricing and psychology, I find myself drawing on one of my favorite Bob Dylan lyrics, "the times, they are a'changin'".
- The biggest risk that we face, as we navigate our way through uncharted territory, is inertia, where we continue to do the things that have worked for the last decade, when we need to adapt and change.