Explain the Sovereign Credit Rating Model to me as briefly as you can.

The Sovereign Credit Rating Model

Country X

Factor (% Weight)	Description	Coefficient	Z-Score Value	Rating Impact (notches)
Intercept	Baseline rating	12.70	1.00	12.70
REAL ECONOMY PILLAR (25%)				
Wealth (5%)	Nominal GDP per capita (US$)	0.51	0.11	0.06
Size (18%)	Nominal GDP (US$ bil)	1.60	-0.77	-1.23
Growth (2%)	Average Growth t-5 to t+4 (%)	0.14	0.17	0.03
MONETARY & INSTITUTIONS PILLAR (44%)				
Inflation (3%)	Average Inflation t-5 to t+4 (%)	0.27	0.26	0.07
Default History (9%)	Average of Default History and Default Decay	0.82	0.30	0.25
Governance (32%)	Average of 6 WGI Indicators	2.88	-0.12	-0.34
FISCAL PILLAR (17%)				
Fiscal Performance (7%)	Average of Fiscal Balance, Govt Revenue to GDP, Interest to Revenue	0.65	-0.12	-0.08
Government Debt (10%)	Government Debt (% of GDP)	0.91	0.10	0.09
EXTERNAL PILLAR (14%)				
External Performance (5%)	Average Current Account Balance t-5 to t+4 (% of GDP)	0.46	-0.32	-0.15
FX Reserves (4%)	Average of FX reserves (% GDP) and Import Cover	0.35	0.66	0.23
Reserve Currency Status (5%)	Reserve Currency Status (1 = Yes, 0 = No)	0.45	-0.52	-0.24
SOVEREIGN CREDIT RATING				
Model Rating				11.39 (BB)
LS Final Rating				11.39 (BB)

Rating impact = coefficient x Z-score value.

Sum these up to get the final numeric rating.

Round either up or down to get the letter rating.

We use a simple linear regression model on a panel data set of countries.

The Model predicts a country's credit rating on a numeric scale from 1 -22. 1 Being default, 22 being AAA rated.

11 Factors go into the model. All factors are Z-scored. In simple terms, think of this as a comparison of how a country stacks up against its peer group.

Starting from the top, each country begins with a baseline rating of 12.70 (somewhere between BB+ and BBB-).

Running down the table, each factor's contribution to the rating is the factor coefficient multiplied by its z-score.

Sum this up and we get a final numeric rating.

This is then rounded to the nearest whole number, to arrive at the letter rating.

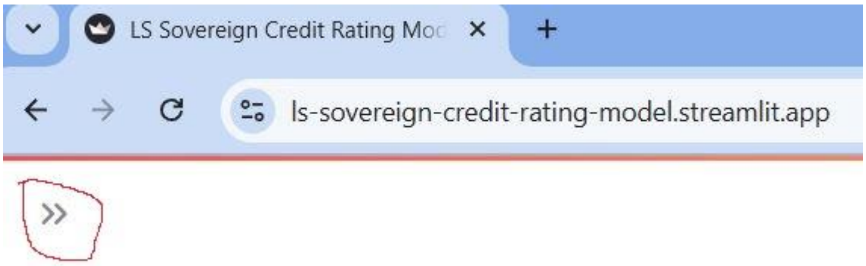
I find the numeric ratings confusing. Please help!

Sure, lets map these to the corresponding letter ratings that we are more familiar with.

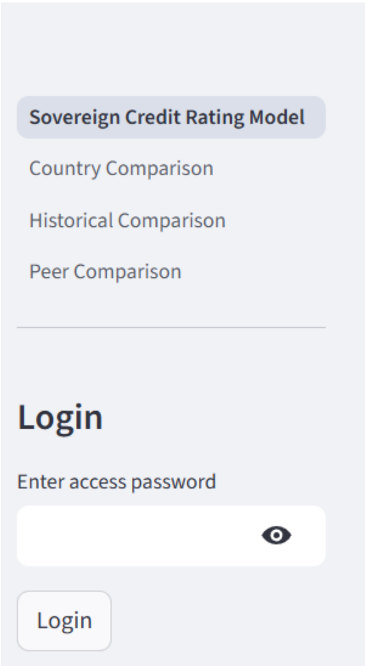
Numeric	Credit Rating
22	AAA
21	AA+
20	AA
19	AA-
18	A+
17	A
16	A-
15	BBB+
14	BBB
13	BBB-
12	BB+
11	BB
10	BB-
9	B+
8	B
7	B-
6	CCC+
5	CCC
4	CCC-
3	CC
2	C
1	SD
1	D

I have been told to take a look at the model credit ratings of the countries I cover. Where do I go?

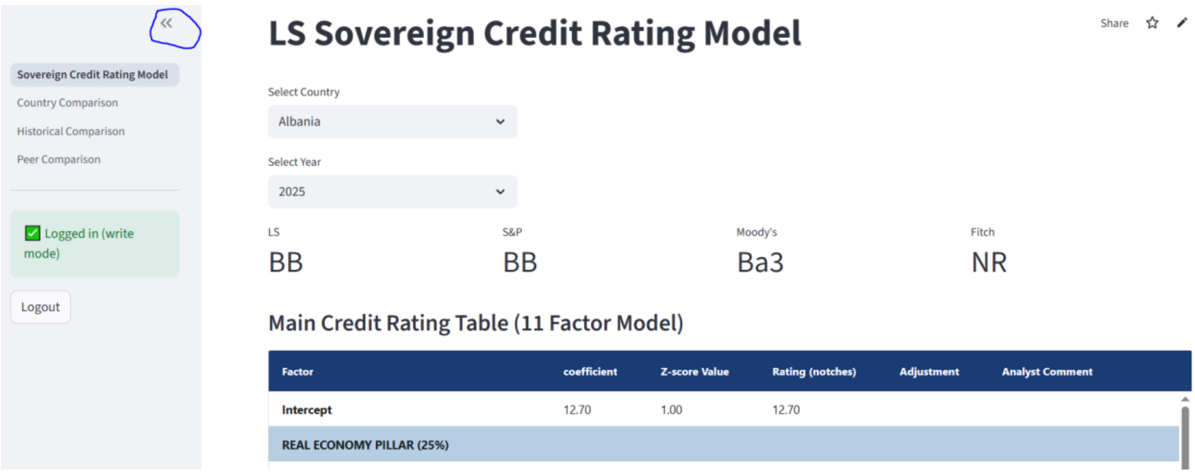
Head to this website: https://ls-sovereign-credit-rating-model.streamlit.app/



Sometimes the page appears blank but you might see this little dual arrow here. Click it! A little side bar should open up. Key in the **password:** Loomis1926!MS and hit login.



Congratulations you are now in! There are various pages on the sidebar for you to click on. The main one you will need to work on is Sovereign Credit Rating Model, which is displayed here. Hit the dual arrow to hide the side bar for a cleaner look!



Ok I have selected my country and the reference year in the top box, what do you want me to do next?

You only have to look at the last two columns, “Adjustment” and “Analyst Comment”.

Scroll down the table and see which factors you would like to adjust.

In the Adjustment column you can key in a numeric adjustment for each rating factor. Note that a value of 1.0 corresponds to a one notch adjustment to the rating.

In the Analyst Comment column, give a brief justification for why you made that adjustment.

Main Credit Rating Table (11 Factor Model)

Factor	coefficient	Z-score Value	Rating (notches)	Adjustment	Analyst Comment
FISCAL PILLAR (17%)				-0.8	The new fiscal rule is not adequate to restrain spending and stabilize de...
Fiscal Performance (7%)	0.65	-0.49	-0.32	-0.5	We assume higher deficits and interest costs than embedded in the mo...
Government Debt (10%)	0.91	-0.95	-0.86		
EXTERNAL PILLAR (14%)					
External Performance (5%)	0.46	-0.07	-0.03		
FX Reserves (4%)	0.35	0.53	0.19		Brazil lost over $30bn in FX reserves in Dec. 2024. But low external publi...
Reserve Currency Status (5%)	0.45	-0.52	-0.24		
SOVEREIGN CREDIT RATING					
Model Rating			12.63	-1.0	BBB-
LS Final Rating			11.63		BB+

Save Analyst Overrides

Export to Excel (Formatted)

One you are happy with the adjustment you have made, hit the Save Analyst Overrides button below. Your adjustments will be saved, and your final rating will be updated.

What if I am happy with the model output and do not see a need to adjust the rating?

Lucky you! Just leave it as is and move on to the next country under your coverage 😊.

What is the Supplementary Credit Rating Table below? Do I have to care about it?

Supplementary Credit Rating Table (Constituent Variables)

Factor	Constituent Variables	Raw Value	Z-score Value	Adjustment	Analyst Comment
FISCAL PILLAR (17%)					
Fiscal Performance (7%)	**Average of Fiscal Balance, Govt Rev GDP, Interest to Rev**	–	-0.49		
	Average of Fiscal Balance 10Y Avg t-5 to t+4 (% of GDP)	-6.5	-1.00		
	Government Revenue (% of GDP)	39.2	0.81		
	Interest Payment (% of Revenue)	20.2	-1.26		
Government Debt (10%)	**Government Debt (% of GDP)**	92.0	-0.95		
EXTERNAL PILLAR (14%)					
External Performance (5%)	**Average Current Account Balance t-5 to t+4 (% of GDP)**	-2.1	-0.07		
FX Reserves (4%)	**Average of FX reserves (% GDP) and Import Cover**	–	0.53		
	FX Reserves (% of GDP)	14.2	0.25		

Save Analyst Overrides   Export to Excel (Formatted)

This table is meant to inform your adjustments in two ways.

Firstly, it shows you the raw value that goes into the model. For example, a current account balance of -2.1% of GDP (Z-score of -0.07).

Secondly, some factors like “Fiscal Performance” are “Blocked Up”. This table helps you to see what goes into such composite factors. For example, Fiscal Performance is the Average Z-score of 1) Fiscal Balance, 2) Government Revenue, and 3) Interest Payments.

You may use this supplementary table to show your working if you wish. So for example, if I made a 0.5 adjustment to Fiscal Balance and a 0.5 adjustment to Government Revenue, this would sum to a 1.0 adjustment to the Fiscal Factor.

If you hit “Save Analyst Overrides” for this table, your inputs in the Adjustment and Analyst column will be saved. **However, filling out the Supplementary Credit Rating Table will not change the final credit rating. For that you will have to return to the Main Credit Rating Table above to key in your adjustments and comments.**

The Supplementary Credit Rating Table is meant as a “working table” to aid you in making your adjustments in the main table.

TLDR: You can safely ignore this table, if you find the Main Table sufficient for you.

I need help making adjustments to the model rating. What are some legitimate reasons for doing so?

Generally, adjustments fall into two categories. Either 1) Some variables are important but not captured by the model or 2) Data is stale either because of update frequency or significant developments.

The table below provides a handy guide on common reasons why certain factors might be adjusted.

Real Economy Pillar	Adjustment
Natural resource windfall	Positive
Positive structural developments (via labor, capital, or technology developments)	Positive
Economy concentrated in a single / few sectors	Negative
Growth fueled by excess credit growth	Negative
Geopolitical instability (eg. War)	Negative
Climate change event producing multi-year impact on economy	Negative

Monetary & Institutions Pillar	Adjustment
Under an IMF Program	Positive
Positive structural reform story leading to increased institutional quality	Positive
Domestic political instability leading to erosion in institutional quality	Negative
High degree of dollarization in economy	Negative
Lack fo central bank independence	Negative

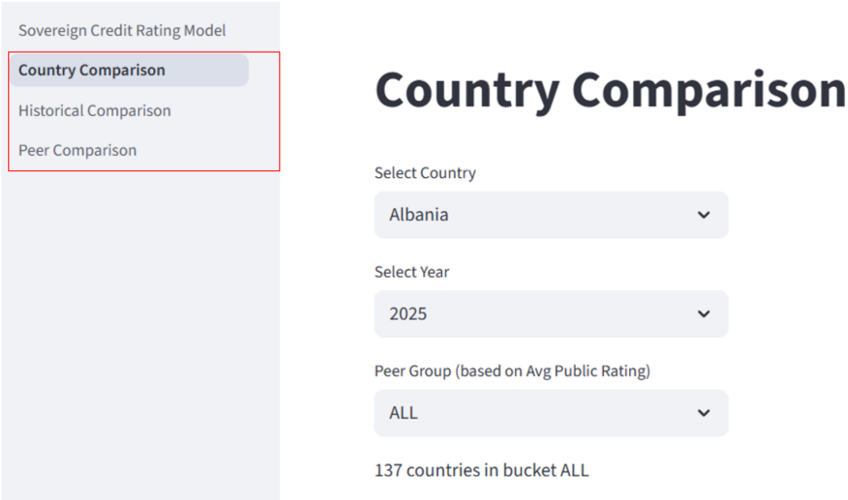
Fiscal Pillar	Adjustment
Debt expected to trend downwards	Positive
High net government assets (eg. sovereign wealth fund)	Positive
Significant portion of debt on concessional terms from multilaterals	Positive
Debt expected to trend upwards	Negative
Presence of sizeable contingent liabilities	Negative

External Pillar	Adjustment
Easy access financing (example: deep domestic capital market)	Positive
Current account primarily financed by sticky FDI inflows	Positive
Exports concentrated in single / few sectors	Negative
High share of foreign currency debt	Negative
High share of local currency debt held by foreigners	Negative

Examples

I need peer and historical context to better inform my adjustments. Please help!

Got you covered! That is what the next three pages (located on the side bar) are for.

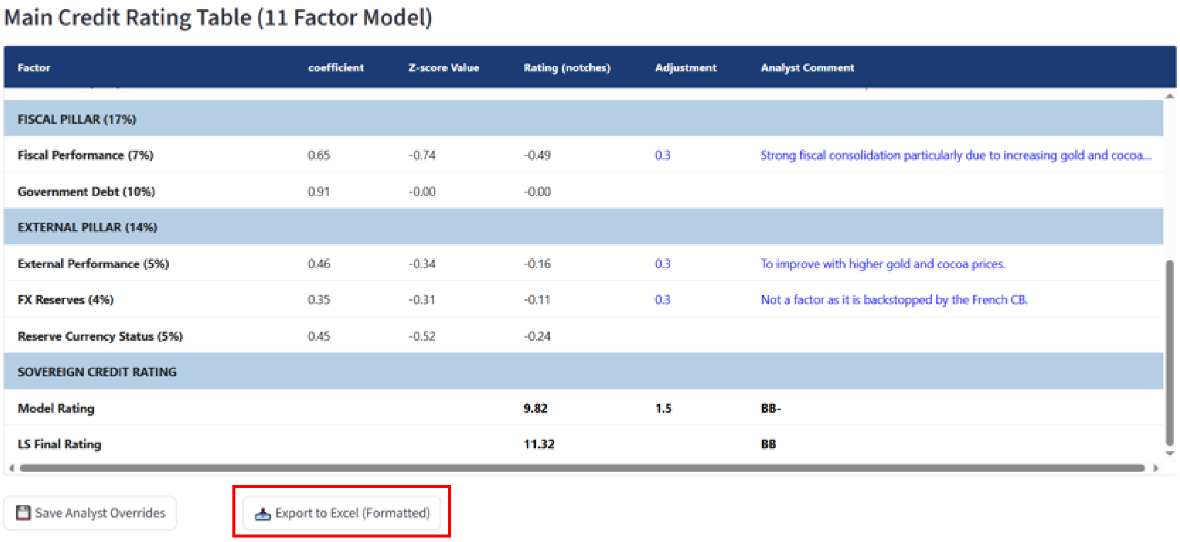


Click into them and explore!

These are also very useful to quickly get up to speed on a new country you have never covered before.

I am working on a time sensitive new issue and need to show my credit rating rationale in my note. How can I do this quickly?

Simple. Just hit the “Export to Excel” button below your table, and download the excel file. In it, you will see a nicely formatted presentation ready table that you can just copy and paste into your reports.



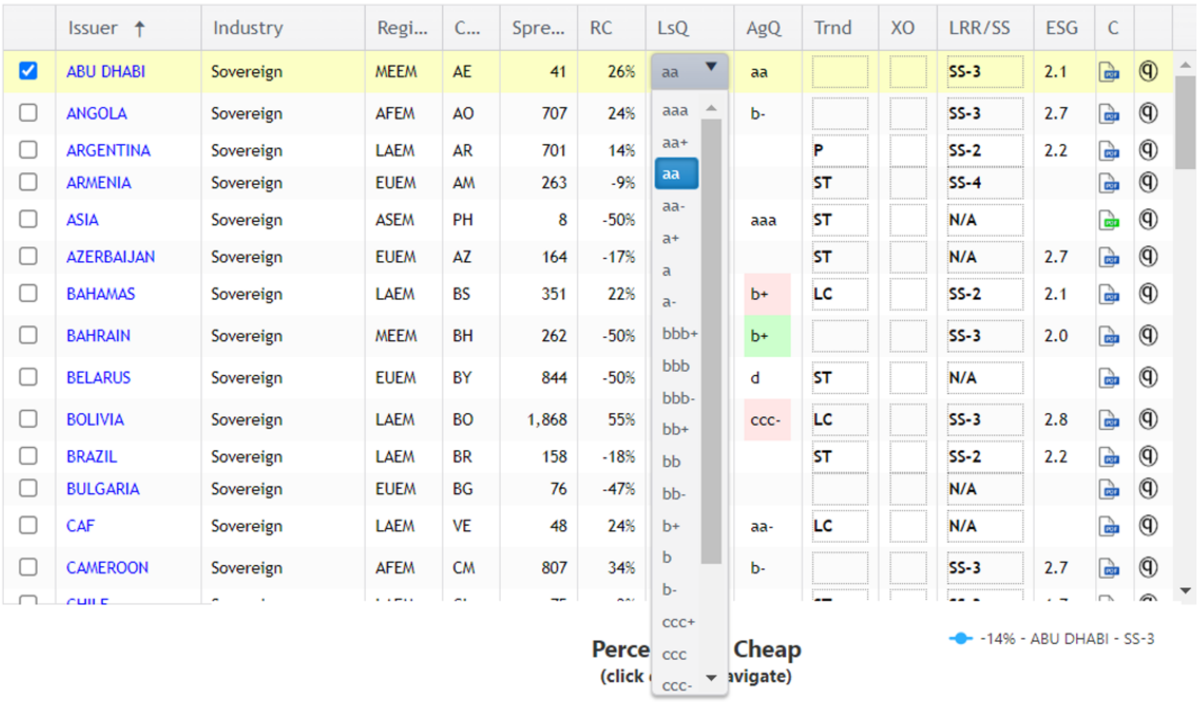
Main Credit Rating Table (11 Factor Model)

Factor	coefficient	Z-score Value	Rating (notches)	Adjustment	Analyst Comment
FISCAL PILLAR (17%)					
Fiscal Performance (7%)	0.65	-0.74	-0.49	0.3	Strong fiscal consolidation particularly due to increasing gold and cocoa...
Government Debt (10%)	0.91	-0.00	-0.00		
EXTERNAL PILLAR (14%)					
External Performance (5%)	0.46	-0.34	-0.16	0.3	To improve with higher gold and cocoa prices.
FX Reserves (4%)	0.35	-0.31	-0.11	0.3	Not a factor as it is backstopped by the French CB.
Reserve Currency Status (5%)	0.45	-0.52	-0.24		
SOVEREIGN CREDIT RATING					
Model Rating			9.82	1.5	BB-
LS Final Rating			11.32		BB

How do I get my Credit Rating into ERV? What does shifting the "dots" mean? How do I do it?

Slow down there! Let's break it down one step at a time!

To change your credit rating in ERV, simply find your country, and then click on the rating in the LsQ column, a dropdown should appear where you can select your letter rating. Note that you will have to submit a short write up to justify the change.



	Issuer	Industry	Regi...	C...	Spre...	RC	LsQ	AgQ	Trnd	XO	LRR/SS	ESG	C
☑	ABU DHABI	Sovereign	MEEM	AE	41	26%	aa	aa			SS-3	2.1	
☐	ANGOLA	Sovereign	AFEM	AO	707	24%		b-			SS-3	2.7	
☐	ARGENTINA	Sovereign	LAEM	AR	701	14%			P		SS-2	2.2	
☐	ARMENIA	Sovereign	EUEM	AM	263	-9%			ST		SS-4		
☐	ASIA	Sovereign	ASEM	PH	8	-50%		aaa	ST		N/A		
☐	AZERBAIJAN	Sovereign	EUEM	AZ	164	-17%			ST		N/A	2.7	
☐	BAHAMAS	Sovereign	LAEM	BS	351	22%		b+	LC		SS-2	2.1	
☐	BAHRAIN	Sovereign	MEEM	BH	262	-50%		b+			SS-3	2.0	
☐	BELARUS	Sovereign	EUEM	BY	844	-50%		d	ST		N/A		
☐	BOLIVIA	Sovereign	LAEM	BO	1,868	55%		ccc-	LC		SS-3	2.8	
☐	BRAZIL	Sovereign	LAEM	BR	158	-18%			ST		SS-2	2.2	
☐	BULGARIA	Sovereign	EUEM	BG	76	-47%					N/A		
☐	CAF	Sovereign	LAEM	VE	48	24%		aa-	LC		N/A		
☐	CAMEROON	Sovereign	AFEM	CM	807	34%		b-			SS-3	2.7	

Shifting the dots means dragging your country dot to the left or right on the ERV plot.

This is typically done when you want to be even more precise in your letter rating. This is what the numeric rating output from our credit rating model allows us to do.

As an example, 13 corresponds to BBB rating. If a country has a numeric score of 13.44, this gets rounded down to 13, which gives it a BBB- rating. We can then say this is a "Strong" BBB-. Correspondingly if a country has a numeric rating of 12.6, this gets rounded up to 13, which also gives a BBB- rating. However, in this case, we say this country is a "Weak" BBB-.

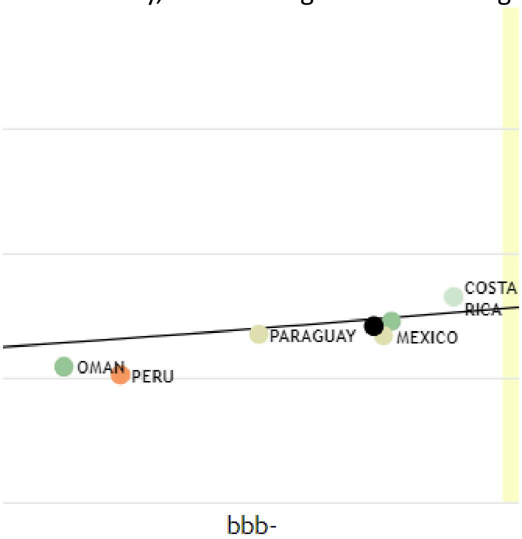
To do this in ERV, just drag your country dot left or right within the rating bucket.

So for example, if a country (say Paraguay) has numeric score of 13, it would see right above bbb-, i.e a middle bbb-.

If a country has a numeric score of 12.53 (say Costa Rica), it would be placed towards the right side of the band, as it is a weak bbb-.

And if a country, has a numeric score of 13.48 (say Oman), it would be placed on towards the left side of the band, as it is a strong bbb-.

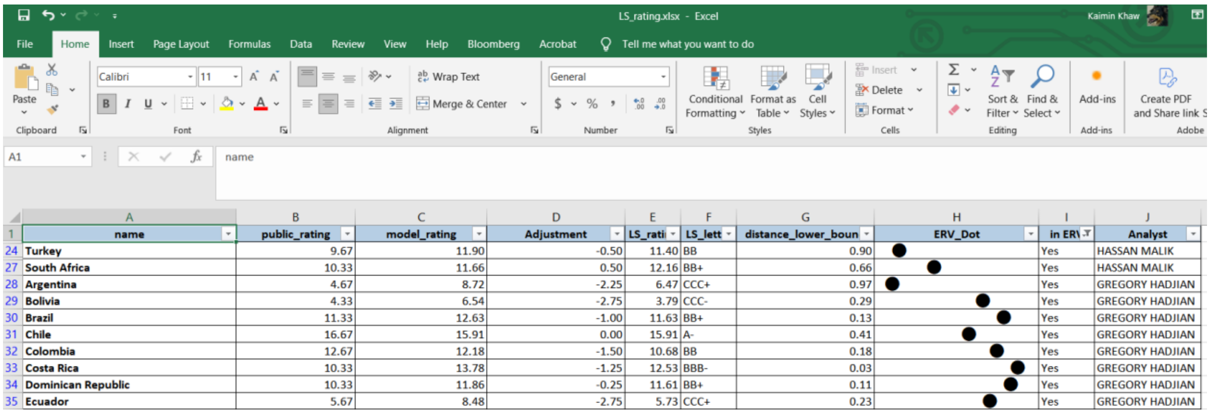
To note, that stronger goes to the left, as the ERV x-axis goes from AAA on the left to C on the right. That is to say, credit rating decreases along the x-axis in the ERV plot.



sk

I need more help working out how much to shift the dot by! What do I do?

Download the “LS_rating.xlsx” file in the about page of the website. (the same place you found this guide).



	name	public_rating	model_rating	Adjustment	LS_rati	LS_lett	distance_lower_boun	ERV_Dot	in ERV	Analyst
24	Turkey	9.67	11.90	-0.50	11.40	BB	0.90		Yes	HASSAN MALIK
27	South Africa	10.33	11.66	0.50	12.16	BB+	0.66		Yes	HASSAN MALIK
28	Argentina	4.67	8.72	-2.25	6.47	CCC+	0.97		Yes	GREGORY HADJIAN
29	Bolivia	4.33	6.54	-2.75	3.79	CCC-	0.29		Yes	GREGORY HADJIAN
30	Brazil	11.33	12.63	-1.00	11.63	BB+	0.13		Yes	GREGORY HADJIAN
31	Chile	16.67	15.91	0.00	15.91	A-	0.41		Yes	GREGORY HADJIAN
32	Colombia	12.67	12.18	-1.50	10.68	BB	0.18		Yes	GREGORY HADJIAN
33	Costa Rica	10.33	13.78	-1.25	12.53	BBB-	0.03		Yes	GREGORY HADJIAN
34	Dominican Republic	10.33	11.86	-0.25	11.61	BB+	0.11		Yes	GREGORY HADJIAN
35	Ecuador	5.67	8.48	-2.75	5.73	CCC+	0.23		Yes	GREGORY HADJIAN

Use Column I “in ERV” to filter out countries that appear in ERV.

Look at Column H “ERV_Dot”, where we have already calculate for you where to shift your dot within its rating bucket in ERV.

Left side = Stronger, Right side = Weaker.

What if my country is not in ERV?

If your country has sovereign bonds denominated in USD, please approach Bernardo to get it added.

If your country does not have sovereign bonds denominated in USD, congratulations on avoiding original sin 😊. No need for you to do anything in ERV!