FEDERAL REPUBLIC OF GERMANY

*EJR Sen Rating(Curr/Prj) AA/ AA

Rating Analysis - 8/18/23

The German economy is expected to experience a challenging recovery over the projection horizon, primarily due to the lingering effects of high inflation, although it is gradually easing. The recovery process is further hampered by private investment being dampened by higher financing costs resulting from tighter monetary policies, especially in the housing construction sector. Additionally, exporters are facing headwinds due to a stronger euro and high wage dynamics. Nevertheless, real income and consumption expenditure of households are slowly recovering, thanks to rising wages and a robust labor market.

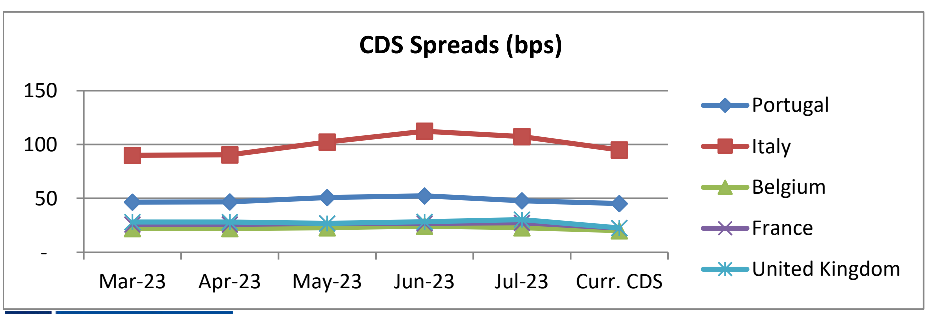
As per OECD estimates, the German economy is expected to stagnate in 2023 and experience a growth rate of 1.3% in 2024. However, there are some positive factors to consider. Export growth is set to recover in 2023 due to the easing of supply chain bottlenecks and a record-high order backlog. Investor and consumer confidence have improved, supported by strong energy prices and swift substitution of energy imports from Russia, coupled with declining energy costs. Affirming.

Annual Ratios (source for past results: IMF)

CREDIT POSITION	2020	2021	2022	P2023	P2024	P2025
Debt/ GDP (%)	81.5	79.6	65.3	59.7	53.6	46.8
Govt. Sur/Def to GDP (%)	-4.0	-3.6	-2.6	-1.3	0.2	1.5
Adjusted Debt/GDP (%)	81.5	79.6	65.3	59.8	53.7	46.9
Interest Expense/ Taxes (%)	2.7	2.3	2.7	2.6	2.4	2.3
GDP Growth (%)	-2.0	5.8	7.4	2.5	3.6	3.6
Foreign Reserves/Debt (%)	1.1	1.1	1.4	1.6	1.8	2.0
Implied Sen. Rating	A+	AA	AA	AA	AA	AA

INDICATIVE CREDIT RATIOS	AA	A	BBB	BB	B	CCC
Debt/ GDP (%)	100.0	115.0	130.0	145.0	170.0	200.0
Govt. Sur/Def to GDP (%)	2.5	0.5	-2.0	-5.0	-8.0	-10.0
Adjusted Debt/GDP (%)	95.0	110.0	125.0	140.0	160.0	190.0
Interest Expense/ Taxes (%)	9.0	12.0	15.0	22.0	26.0	35.0
GDP Growth (%)	3.5	3.0	2.0	1.0	-1.0	-5.0
Foreign Reserves/Debt (%)	3.0	2.5	2.0	1.5	1.0	0.5

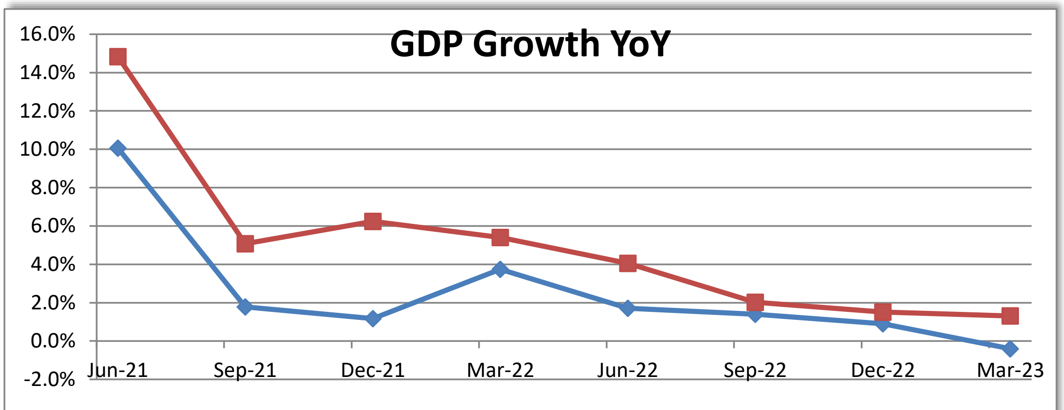
PEER RATIOS	Other NRSRO Sen.	Debt as a % GDP	Govt. Surp. Def to GDP (%)	Adjusted Debt/ GDP	Interest Expense/ Taxes %	GDP Growth (%)	Ratio-Implied Rating*
Kingdom Of Belgium	AA	103.8	-3.4	103.8	5.1	9.3	AA-
French Republic	AA	117.1	-4.2	117.1	6.1	5.5	A-
Portugal Republic	BB+	116.6	-0.7	116.6	7.6	11.4	BB+
Republic Of Italy	BBB-	151.3	-7.8	151.3	14.6	6.8	BBB-



Country	EJR Rtg.	CDS
Portugal	BBB-	45
Italy	BBB-	95
Belgium	BBB	20
France	A+	23
United Kingdom	A+	23

Economic Growth

According to available data, the economy showed signs of rebounding in Q2 after experiencing two consecutive quarter-on-quarter contractions. Retail sales saw growth in April and May on a monthly basis, supported by lower inflation. The services sector remained robust throughout Q2, as indicated by PMI data. However, the industrial sector weakened, with output growing less in April compared to Q1 and falling in May. The manufacturing PMI also remained in negative territory throughout June, indicating subdued conditions in the sector. The ifo Institute reported that enterprises' assessment of the business situation was more positive in the services sector, particularly compared to the preceding quarter. Looking ahead, the economy is projected to stagnate in 2023, with a modest growth rate of 1.3% expected in 2024. The subdued GDP growth in 2023 can be attributed to high inflation, which reduces real incomes and savings, thereby dampening private consumption.



Source: IFS

Fisical Policy

The temporary crisis-related support measures are expected to have a significant impact on the government deficit in 2023, amounting to just over 2% of GDP. However, these burdens will decrease notably throughout the year as the coronavirus measures expire. Among the support measures provided in response to the energy crisis, the most substantial strains in 2023 come from the broadly based electricity and gas price brakes. After considering revenue generated from electricity market sales, these strains are estimated to contribute to a deficit of just over 1% of GDP in 2023.

	Surplus-to-GDP (%)	Debt-to-GDP (%)	5 Yr. CDS Spreads
Germany	-2.62	65.28	15.01
Belgium	-3.36	103.79	20.17
France	-4.25	117.11	22.50
United Kingd	-5.52	147.88	22.67
Portugal	-0.66	116.63	45.31
Italy	-7.83	151.26	95.04

Sources: Thomson Reuters and IFS

Unemployment

In June 2023, Germany's unemployment rate ticked up to 5.7%, surpassing both the preliminary estimate and market expectations, which were set at 5.6%. The rate reached its highest level since June 2021, with 28K more people becoming unemployed, totaling 2.61 million, surpassing market expectations of a 13K increase. In comparison to the previous year, the number of unemployed individuals rose by 192K, while job openings decreased by 108K to 769K.

Unemployment (%)

	2021	2022
Germany	3.58	3.07
Belgium	6.28	5.58
France	7.88	7.32
United Kingd	4.00	3.70
Portugal	6.59	6.04
Italy	9.56	8.08

Source: Intl. Finance Statistics

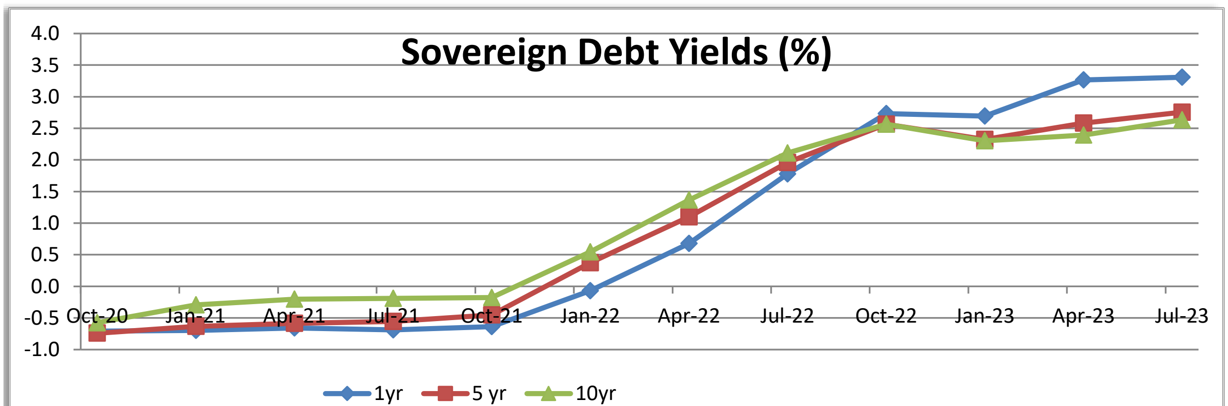
Banking Sector

The German banking system remains strongly capitalized and enjoys healthy liquidity, meeting expected ratios. However, it is important to note that the system has become more vulnerable compared to a few years ago due to significant economic shocks. Despite these challenges, credit risk has remained low, thanks in part to comprehensive fiscal measures that have supported the economy.

Bank Assets (billions of local currency)		
	Assets	Mkt Cap/ Assets %
Deutsche Bank	1,336.8	1.41
Commerzbank	477.4	2.70
Total	1,814.2	
EJR's est. of cap shortfall at 10% of assets less market cap		149.6
Germany's GDP		3,869.9

Funding Costs

Currently, the Germany 10Y Government Bond is yielding 2.450%. The yield spread between 10 years and 2 years bonds is -82.1 basis points, indicating an inverted yield curve in which long-term maturities have lower yields than short-term maturities. This inversion could be an indication of potential economic uncertainty or market sentiment.



Source: Thomson Reuters

Ease of Doing Business

Major factors for growing the economy are the ease of doing business and the economic freedom; although not the sole factor for determining economic growth, a country which makes it easy for businesses to operate and provides a reasonably free environment to conduct business has a good chance for growth. The chart on the right indicates that with an overall rank of 22 (1 is best, 189 worst) is strong.

The World Bank's Doing Business Survey*	2021 Rank	2020 Rank	Change in Rank
Overall Country Rank:	**22**	**22**	**0**
Scores:			
Starting a Business	125	125	0
Construction Permits	30	30	0
Getting Electricity	5	5	0
Registering Property	76	76	0
Getting Credit	48	48	0
Protecting Investors	61	61	0
Paying Taxes	46	46	0
Trading Across Borders	42	42	0
Enforcing Contracts	13	13	0
Resolving Insolvency	4	4	0

* Based on a scale of 1 to 189 with 1 being the highest ranking.

Economic Freedom

As can be seen below, Germany is above average in its overall rank of 73.7 for Economic Freedom with 100 being best.

Heritage Foundation 2023 Index of Economic Freedom
World Rank 73.7*

	2023 Rank**	2022 Rank	Change in Rank	World Avg.
Property Rights	94.8	95.7	-0.9	53.3
Government Integrity	89.4	89.4	0.0	44.4
Judical Effectiveness	93.1	95.3	-2.2	48.3
Tax Burden	60.2	59.9	0.3	78.1
Gov't Spending	28.3	34.5	-6.2	64.3
Fiscal Health	82.7	90.4	-7.7	54.5
Business Freedom	79.7	87.2	-7.5	59.8
Labor Freedom	52.8	52.3	0.5	55.5
Monetary Freedom	75.3	79.5	-4.2	72.1
Trade Freedom	78.6	79.2	-0.6	69.6

*Based on a scale of 1-100 with 100 being the highest ranking.
**The ten economic freedoms are based on a scale of 0 (least free) to 100 (most free).
Source: The Heritage Foundation

Credit Quality Driver: Taxes Growth:
FEDERAL REPUBLIC OF GERMANY has grown its taxes of 7.9% per annum in the last fiscal year which is more than the average for its peers. We expect tax revenues will grow approximately 7.9% per annum over the next couple of years and 7.1% per annum for the next couple of years thereafter.

Credit Quality Driver: Total Revenue Growth:
FEDERAL REPUBLIC OF GERMANY's total revenue growth has been less than its peers and we assumed no growth in total revenue over the next two years.

Income Statement	Peer Median	Issuer Avg.	Assumptions Yr 1&2	Yr 3,4,5
Taxes Growth%	7.9	7.9	**7.9**	**7.1**
Social Contributions Growth %	8.5	5.1	**5.0**	**5.0**
Grant Revenue Growth %	0.0	NMF		
Other Revenue Growth %	0.0	NMF		
Other Operating Income Growth%	0.0	3.7	**3.7**	**3.7**
Total Revenue Growth%	7.9	6.4	**6.4**	**5.7**
Compensation of Employees Growth%	4.3	4.2	**4.2**	**4.2**
Use of Goods & Services Growth%	6.4	4.3	**4.3**	**4.3**
Social Benefits Growth%	5.0	3.5	**3.5**	**3.5**
Subsidies Growth%	(6.3)	(34.8)		
Other Expenses Growth%	0.0			
Interest Expense	1.8	1.0	**1.0**	
Currency and Deposits (asset) Growth%	(11.5)	0.0		
Securities other than Shares LT (asset) Growth%	(4.6)	0.0		
Loans (asset) Growth%	17.9	5.4	**5.4**	**5.4**
Shares and Other Equity (asset) Growth%	57.9	(25.3)	**2.0**	**2.0**
Insurance Technical Reserves (asset) Growth%	(1.4)	18.9	**18.9**	**17.0**
Financial Derivatives (asset) Growth%	0.0	(28.7)	**(10.0)**	**(10.0)**
Other Accounts Receivable LT Growth%	3.5	15.1	**7.9**	**7.9**
Monetary Gold and SDR's Growth %	0.0	0.0	**5.0**	**5.0**
Other Assets Growth%	0.0	0.0		
Other Accounts Payable Growth%	3.1	9.3	**5.0**	**5.0**
Currency & Deposits (liability) Growth%	(1.2)	(4.3)	**0.5**	**0.5**
Securities Other than Shares (liability) Growth%	(15.1)	(17.3)	**(12.1)**	**(12.1)**
Loans (liability) Growth%	0.7	4.7	**4.7**	**4.7**
Insurance Technical Reserves (liability) Growth%	2.8	0.0		
Financial Derivatives (liability) Growth%	(60.0)	0.0		
Additional ST debt (1st year)(billions EUR)	0.0	0.0		

ANNUAL INCOME STATEMENTS

Below are FEDERAL REPUBLIC OF GERMANY's annual income statements with the projected years based on the assumptions listed on page 5.

ANNUAL REVENUE AND EXPENSE STATEMENT
(BILLIONS EUR)

	2019	2020	2021	2022	P2023	P2024
Taxes	834	783	888	957	1,033	1,115
Social Contributions	598	608	634	666	699	734
Grant Revenue						
Other Revenue						
Other Operating Income	183	178	191	197	197	197
Total Revenue	1,616	1,569	1,712	1,821	1,930	2,046
Compensation of Employees	273	284	294	307	320	333
Use of Goods & Services	187	209	227	237	247	258
Social Benefits	846	905	941	974	1,009	1,044
Subsidies	28	73	112	73	73	73
Other Expenses				205	205	205
Grant Expense						
Depreciation	79	82	88	100	100	100
Total Expenses excluding interest	1,532	1,685	1,821	1,896	1,953	2,013
Operating Surplus/Shortfall	84	-116	-109	-75	-24	33
Interest Expense	27	22	21	26	26	27
Net Operating Balance	57	-137	-130	-101	-50	7

ANNUAL BALANCE SHEETS

Below are FEDERAL REPUBLIC OF GERMANY's balance sheets with the projected years based on the assumptions listed on page 5.

Base Case	ANNUAL BALANCE SHEETS (BILLIONS EUR)					
ASSETS	2019	2020	2021	2022	P2023	P2024
Currency and Deposits (asset)	375	457	471	417	417	417
Securities other than Shares LT (asset)	140	140	135	123	123	123
Loans (asset)	-1	35	9	9	10	10
Shares and Other Equity (asset)	11	12	11	8	8	9
Insurance Technical Reserves (asset)	1	1	1	1	1	2
Financial Derivatives (asset)	-52	-65	-52	-37	-33	-30
Other Accounts Receivable LT	111	115	127	146	158	170
Monetary Gold and SDR's						
Other Assets					834	834
Additional Assets	820	873	955	834		
Total Financial Assets	1,404	1,569	1,656	1,502	1,518	1,535
LIABILITIES						
Other Accounts Payable	112	114	124	135	142	149
Currency & Deposits (liability)	14	14	18	17	17	17
Securities Other than Shares (liability)	1,717	2,089	2,170	1,794	1,576	1,385
Loans (liability)	542	558	555	581	631	624
Insurance Technical Reserves (liability)						
Financial Derivatives (liability)						
Other Liabilities						
Liabilities	2,385	2,776	2,866	2,526	2,593	2,603
Net Financial Worth	-981	-1,207	-1,211	-1,025	-1,075	-1,068
Total Liabilities & Equity	1,404	1,569	1,656	1,502	1,518	1,535

Comments on the Difference between the Model and Assigned Rating

We consider a one or less "notch" difference between in the recent results and therefore we have used our best judgement in making adjustments which are reflected in the results for the projected ratings. We have assigned a rating of "AA" whereas the ratio-implied rating for the most recent period is "AA"; we expect results to remain approximately the same.

Changes in Indicative Ratios

We have not made any adjustment in the indicative ratios at this time.

SEC Rule 17g-7(a) Disclosure

Below are the disclosures as required by Paragraph (a) of Rule 17g-7.

1. The symbol in the rating scale used to denote the credit rating categories and notches within categories and the identity of the obligor, security, or money market instrument as required by Paragraph (a)(1)(ii)(A) of Rule 17g-7:
For the issuer FEDERAL REPUBLIC OF GERMANY with the ticker of 3413Z GR we have assigned the senior unsecured rating of AA. There are three notches in our rating categories (e.g., A-, A, and A+) other than those deep into speculative grade; for CC, C, and D there are no notches.

2. The version of the procedure or methodology used to determine the credit rating as required by Paragraph (a)(1)(ii)(B) of Rule 17g-7:
We are using the methodology version #16 available via egan-jones.com under the tab at the bottom of the page "Methodologies".

3. The main assumptions and principles used in constructing the procedures and methodologies used to determine the credit rating as required by Paragraph (a)(1)(ii)(C) of Rule 17g-7:
The credit rating assigned reflects our judgement regarding the future credit quality of the issuer. Regarding the specific assumptions used, please refer to page 3 of this Rating Analysis Report.

4. The potential limitations of the credit rating as required by Paragraph (a)(1)(ii)(D) of Rule 17g-7:
Our rating pertains solely to our view of current and prospective credit quality. Our rating does not address pricing, liquidity, or other risks associated with holding investments in the issuer.

5. Information on the uncertainty of the credit rating as required by Paragraph (a)(1)(ii)(E) of Rule 17g-7:
Our rating is dependant on numerous factors including the reliability, accuracy, and quality of the data relied used in determining the credit rating. The data is sourced from publicly-available 10Q and 10K statements, quarterly reports, 8K filings, earnings reports, and other similar sources. In some cases, the information is limited because of issues such as short operating histories, the lack of reported data, a delay in reporting data, restatements, inaccurate accounting, and other issues. Such shortcomings are not always readily apparent. EJR aims to identify such shortcomings and make adjustments using its best judgement.

6. Whether and to what extent third-party due diligence services have been used in taking the rating action as required by Paragraph (a)(1)(ii)(F) of Rule 17g-7:
EJR does not utilize third-party due diligence services.

7. How servicer or remittance reports were used, and with what frequency, to conduct surveillance of the credit rating as required by Paragraph (a)(1)(ii)(G) of Rule 17g-7:
Servicer or remittance reports normally pertain to structured finance issuers; this report does not pertain to a structured finance issuer (EJR is not an NRSRO for structured finance or sovereigns/ municipal issuers). Regarding surveillance, the minimum time period for corporation issuers is normally one year.

8. A description of the data that were relied upon for the purpose of determining the credit rating as required by Paragraph (a)(1)(ii)(H) of Rule 17g-7:
EJR uses 10Q and 10K statements, quarterly reports, 8K filings, earnings reports, governmental filings and other similar sources for ratings on publicly-traded issuers. In the case of private issuers, EJR relies on information provided mainly by issuers.

9. A statement containing an overall assessment of the quality of information available and considered in the credit rating as required by Paragraph (a)(1)(ii)(I) of Rule 17g-7: The information is generally high quality and readily avail.

10. Information relating to conflicts of interest as required by Paragraph (a)(1)(ii)(J) of Rule 17g-7:
This rating is unsolicited.

11. An explanation or measure of the potential volatility of the credit rating as required by Paragraph (a)(1)(ii)(K) of Rule 17g-7:
Our rating aims to assess the probability of the payment of obligations in full and on-time. Factors which affect such probability, and in turn our rating, include changes in the operating performance of the issuer, changes in capital structure, and merger and acquisition events.

12. Information on the content of the credit rating as required by Paragraph (a)(1)(ii)(L) of Rule 17g-7:
Regarding the historical performance of the credit rating, our rating transition matrix is available in our Form NRSRO, exhibit 1. The expected probability of default and the expected loss in the event of default is listed on the first page of this report.

13. Information on the sensitivity of the credit rating to assumptions as required by Paragraph (a)(1)(ii)(M) of Rule 17g-7:
Below is a summary of the impact of the 5 assumptions which independently would have the greatest impact on our "ratio-implied rating":

	Assumptions			**Resulting Ratio-Implied Rating**		
	Base	Optimistic	Pessimistic	Base	Optimistic	Pessimistic
Taxes Growth%	7.9	11.9	3.9	AA	AA	AA
Social Contributions Growth %	5.0	8.0	2.0	AA	AA	AA
Other Revenue Growth %		3.0	(3.0)	AA	AA	AA
Total Revenue Growth%	6.4	8.4	4.4	AA	AA	AA
Monetary Gold and SDR's Growth %	5.0	7.0	3.0	AA	AA	AA

14. If the credit rating is assigned to an asset-backed security, a description of: (i) the representations, warranties, and enforcement mechanisms available to investors; and (ii) how they differ from the representations, warranties, and enforcement mechanisms in issuances of similar securities, as required by Paragraph (a)(1)(ii)(N) of Rule 17g-7:
This credit rating is not assigned to an asset-backed security.

ATTESTATION FORM

In compliance with the US Securities and Exchange Commission (SEC) Rule 17g-7(a), the Egan-Jones analyst who published the report is responsible for the rating action and to the best knowledge of the person:

1) No part of the credit rating was influenced by any other business activities,
2) The credit rating was based solely upon the merits of the obligor, security, or money market instrument being rated, and
3) The credit rating was an independent evaluation of the credit risk of the obligor, security, or money market instrument.

Analyst Signature: **Today's Date**

August 18, 2023

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Subramanian NG
Senior Rating Analyst

Reviewer Signature: **Today's Date**

Steve Zhang

August 18, 2023

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Steve Zhang
Senior Rating Analyst

Sovereign Rating Methodology (Non-NRSRO)

Scope and Limitations: Sovereign Issuer Credit Quality Ratings (CQR) are a forward-looking assessment of a sovereign's capacity and willingness to honor its existing and future obligations in full and on time. Sovereigns are assigned two CQRs: a Local-Currency CQR, which reflects the likelihood of default on debt issued and payable in the currency of the sovereign, and a Foreign-Currency CQR, which is an assessment of the credit risk associated with debt issued and payable in foreign currencies.

Key Rating Drivers: EJR's approach to sovereign risk analysis is a synthesis of quantitative and qualitative judgments. The quantitative factors EJR uses are:

- Debt in relation to GDP.
- Surplus or deficit in relation to GDP.
- Debt plus potential under-funding of major banks in relation to GDP.
- Interest expense in relation to taxes.
- GDP growth.
- Foreign reserves in relation to debt.

Debt levels for many sovereign issuers have increased at an accelerating rate over the past decade, affecting implied ratings. EJR also considers unemployment levels and funding costs. EJR recognizes that no model can fully capture all the relevant influences on sovereign creditworthiness, meaning that the its sovereign ratings can and do differ from those implied by the rating model. Some of the qualitative factors that impact its ultimate assessment of credit quality include the flexibility, stability and overall strength of the economy, efficiency of tax collection, acceptance of contract law, ease of doing business, trade balances, prospects for future growth and health and monetary policy, and economic freedom. These subjective and dynamic qualitative issues are not captured by the model but affect sovereign ratings

For additional information, please see Exhibit 2: Methodologies in EJR's Form NRSRO.