

# International Debt Statistics Analysis through SQL

This comprehensive document explores the complex and crucial topic of international debt, leveraging the power of SQL to analyze key trends, indicators, and risk factors. By delving into data sources and exploratory analysis, this report aims to provide valuable insights to address the global debt information.



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# Introduction to international debt and its significance

	country_name	country_code	indicator_name	indicator_code	debt
▶	Afghanistan	AFG	Disbursements on external debt, long-term (DIS...	DT.DIS.DLXF.CD	72894453.7
	Afghanistan	AFG	Interest payments on external debt, long-term ...	DT.INT.DLXF.CD	53239440.1
	Afghanistan	AFG	PPG, bilateral (AMT, current US\$)	DT.AMT.BLAT.CD	61739336.9
	Afghanistan	AFG	PPG, bilateral (DIS, current US\$)	DT.DIS.BLAT.CD	49114729.4
	Afghanistan	AFG	PPG, bilateral (INT, current US\$)	DT.INT.BLAT.CD	39903620.1
	Afghanistan	AFG	PPG, multilateral (AMT, current US\$)	PPG, bilateral (INT, current US\$)	
	Afghanistan	AFG	PPG, multilateral (DIS, current US\$)	DT.DIS.MLAT.CD	23779724.3
	Afghanistan	AFG	PPG, multilateral (INT, current US\$)	DT.INT.MLAT.CD	13335820

To manage their economies, countries sometimes take on debt, just as individuals do to meet their basic needs. Infrastructure investments, which are essential for the well-being of a nation's citizens, can be quite costly. The World Bank is a key institution that provides debt to countries. we will be examining an international debt dataset from The World Bank, which encompasses information about the debt amounts (in USD) owed by developing countries across different categories. Our analysis will focus on unraveling the complexities of international debt and its implications.

- What is the total amount of debt that is owed by the countries listed in the dataset?
- Which country owns the maximum amount of debt and what does that amount look like?
- What is the average amount of debt owed by countries across different debt indicators?

# Number of distinct countries

we can observe the debt owed by Afghanistan across various debt indicators in the first ten rows of the table. However, we lack information about the number of unique countries featured in the table. Since country names may repeat due to multiple debt indicators, understanding the count of unique countries is crucial for a comprehensive statistical analysis. Let's proceed with extracting the number of unique countries present in the dataset

**Query :** `select count(distinct(country_name)) as Total_Distinct_Countries from main ;`

**Output :**

	Total_Distinct_Countries
▶	124

# Distinct debt indicators

In the dataset, we have identified a total of 124 unique countries listed. Additionally, the column "indicator\_name" provides a brief description of the purpose of the debt, while the "indicator\_code" column categorizes these debts. Understanding these diverse debt indicators is essential for gaining insights into the areas where countries may hold debt.

**Query :** `select distinct(indicator_code) as Distinct_Debt_Indicator from main order by Distinct_Debt_Indicator;`

**Output :**

	Distinct_Debt_Indicator
▶	DT.AMT.BLAT.CD
	DT.AMT.DLXF.CD
	DT.AMT.DPNG.CD
	DT.AMT.MLAT.CD
	DT.AMT.OFFT.CD
	DT.AMT.PBND.CD
	DT.AMT.PCBK.CD
	DT.AMT.PROP.CD

# Total amount of debt owed by the countries & Country with the highest debt

Considering the impact of a country's financial debt on its economic condition, it's pertinent to extend our analysis to a global scale. Thus, shifting focus from the specific debt indicators, we aim to determine the total debt amount (in USD) owed by various countries. This broader perspective will provide valuable insights into the overall economic status of the world.

**Query :** `SELECT ROUND(SUM(debt)/1000000, 2) AS Total_Debt FROM main;`

Quantifying the total debt amounts owed by numerous countries reveals staggering figures that are challenging for us to comprehend. Now, let's focus on identifying the country with the highest total debt and the corresponding amount. This valuable insight will offer a deeper understanding of the socio-economic landscape of the country. Delving into the specific debt category with the highest amount of debt belonging to the same country will be deferred for the moment.

**Query :** `SELECT country_name, SUM(debt) AS Total_Debt FROM main GROUP BY country_name ORDER BY total_debt DESC LIMIT 1;`

**Outputs :**

	Total_Debt
▶	3079734.49

	country_name	Total_Debt
▶	China	285793494734.2

# Average amount of debt across indicators

After exploring the dataset and reviewing some summary statistics, we've gained insights into the various debt indicators across countries. To deepen our analysis, let's now investigate the average debt amount owed by each country. Calculating this average will provide a clearer picture of how debt is distributed across different indicators, enhancing our understanding of the dataset.

**Query :** `SELECT indicator_code AS Debt_Indicator, indicator_name, AVG(debt) AS Average_Debt FROM main GROUP BY Debt_Indicator, indicator_name ORDER BY Average_Debt DESC LIMIT 10;`

**Output :**

	Debt_Indicator	indicator_name	Average_Debt
►	DT.AMT.DLXF.CD	Principal repayments on external debt, long-ter...	5904868401.499195
	DT.AMT.DPNG.CD	Principal repayments on external debt, private ...	5161194333.812659
	DT.DIS.DLXF.CD	Disbursements on external debt, long-term (DIS...	2152041216.8902435
	DT.DIS.OFFT.CD	PPG, official creditors (DIS, current US\$)	1958983452.8598351
	DT.AMT.PRVT.CD	PPG, private creditors (AMT, current US\$)	1803694101.963265
	DT.INT.DLXF.CD	Interest payments on external debt, long-term ...	1644024067.6508067
	DT.DIS.BLAT.CD	PPG, bilateral (DIS, current US\$)	1223139290.39823
	DT.INT.DPNG.CD	Interest payments on external debt, private no...	1220410844.4215188
	DT.AMT.OFFT.CD	PPG, official creditors (AMT, current US\$)	1191187963.083064
	DT.AMT.PBND.CD	PPG, bonds (AMT, current US\$)	1082623947.6536236

# Highest amount of principal repayments

A notable observation from the previous analysis is the significant disparity among the debt amounts in the various debt indicators, particularly after the second indicator. This discrepancy suggests that the first two indicators may represent the most critical categories in which countries accumulate debt.

To delve deeper, let's focus on identifying the country with the highest debt amount in the long-term debt category (DT.AMT.DLXF.CD). By pinpointing this information, we can gain a more nuanced understanding of the economic status of that specific country, considering the unique economic challenges and circumstances faced by different nations.

**Query :** `SELECT country_name, indicator_name FROM main WHERE debt = (SELECT MAX(debt) FROM main WHERE indicator_code = 'DT.AMT.DLXF.CD');`

**Output :**

	country_name	indicator_name
▶	China	Principal repayments on external debt, long-term (AMT, current US\$)

# Most common debt indicator

China emerges as the country with the highest debt amount in the long-term debt category (DT.AMT.DLXF.CD), confirming our earlier analysis. Validating our findings is crucial to ensuring the accuracy of our investigations.

Having identified long-term debt as the top category in terms of average debt amounts, the next question arises: Is long-term debt the most prevalent indicator in which countries accrue debt? Let's delve into the dataset to uncover whether long-term debt is indeed the most common category for countries to owe their debts.

**Query :** `SELECT indicator_code, COUNT(indicator_code) AS Indicator_Count FROM main GROUP BY indicator_code ORDER BY indicator_count DESC, indicator_code DESC LIMIT 20;`

**Output :**

	indicator_code	Indicator_Count
▶	DT.INT.OFFT.CD	124
	DT.INT.MLAT.CD	124
	DT.INT.DLXF.CD	124
	DT.AMT.OFFT.CD	124
	DT.AMT.MLAT.CD	124
	DT.AMT.DLXF.CD	124
	DT.DIS.DLXF.CD	123
	DT.INT.BLAT.CD	122
	DT.DIS.OFFT.CD	122
	DT.AMT.BLAT.CD	122
	DT.DIS.MLAT.CD	120



# Other viable debt issues and conclusion

Our examination of global debt levels has uncovered key insights and summary statistics, shedding light on the economic challenges faced by various countries. As we shift our focus from debt indicators to the total amount of debt owed, we aim to uncover another layer of economic issues that these countries may be experiencing. By identifying the maximum debt amount held by each country, we can gain a deeper understanding of the diverse economic challenges across the globe.

We've navigated through the complexities of international debt, extracting valuable insights and validating our findings to ensure the accuracy of our analyses.

**Query :** `SELECT country_name, MAX(debt) AS Maximum_Debt FROM main GROUP BY country_name ORDER BY maximum_debt DESC LIMIT 10;`

**Output :**

country_name	Maximum_Debt
China	96218620835.7
Brazil	90041840304.1
Russian Federation	66589761833.5
Turkey	51555031005.8
South Asia	48756295898.2
Least developed countries: UN classification	40160766261.6
IDA only	34531188113.2
India	31923507000.8
Indonesia	30916112653.8
Kazakhstan	27482093686.4

# Insights and recommendations for policymakers

The comprehensive analysis of international debt data and trends presented in this report aims to provide policymakers and stakeholders with valuable insights and actionable recommendations to address the global debt crisis more effectively. The key takeaways and recommendations include:

- Strengthening debt management and transparency frameworks to enhance fiscal discipline and responsible borrowing practices
- Promoting international cooperation and coordination to facilitate debt restructuring, relief, and sustainable financing solutions
- Diversifying financing sources and exploring innovative debt instruments to reduce reliance on volatile external debt
- Investing in economic diversification, resilience-building, and social safety nets to mitigate the impact of debt crises on vulnerable populations
- Enhancing data collection, monitoring, and analysis capabilities to enable evidence-based policymaking and timely intervention

By implementing these recommendations, policymakers can work towards a more stable and equitable global financial system, reducing the burden of unsustainable debt and fostering sustainable economic growth and development.