

Analyzing International Debt: Insights from The World Bank Dataset 1970-2015

International debt is a critical aspect of the global economy, shaping financial stability, development, and economic growth. In this report, we analyze a comprehensive dataset obtained from The World Bank, focusing on international debt trends from 1970 to 2015. This dataset provides valuable information on debt amounts for developing countries, categorized by various indicators. Our objective is to derive insights and patterns to gain a deeper understanding of international debt dynamics.

Data sources: <https://www.worldbank.org/en/home>

Tool: Postgres SQL

Data Exploration:

- Reviewing Data: After importing the dataset, a review was conducted to ensure data accuracy and completeness. The first 10 records were examined.

```
SELECT * FROM international_debt LIMIT 10;
```

	country_name character varying	country_code character varying	indicator_name character varying	indicator_code character varying	debt numeric
1	Afghanistan	AFG	Disbursements on external debt, long-term (DIS, current US\$)	DT.DIS.DLXF.CD	72894453.700000003
2	Afghanistan	AFG	Interest payments on external debt, long-term (INT, current US...	DT.INT.DLXF.CD	53239440.100000001
3	Afghanistan	AFG	PPG, bilateral (AMT, current US\$)	DT.AMT.BLAT.CD	61739336.899999999
4	Afghanistan	AFG	PPG, bilateral (DIS, current US\$)	DT.DIS.BLAT.CD	49114729.399999999
5	Afghanistan	AFG	PPG, bilateral (INT, current US\$)	DT.INT.BLAT.CD	39903620.100000001
6	Afghanistan	AFG	PPG, multilateral (AMT, current US\$)	DT.AMT.MLAT.CD	39107845
7	Afghanistan	AFG	PPG, multilateral (DIS, current US\$)	DT.DIS.MLAT.CD	23779724.300000001
8	Afghanistan	AFG	PPG, multilateral (INT, current US\$)	DT.INT.MLAT.CD	13335820
9	Afghanistan	AFG	PPG, official creditors (AMT, current US\$)	DT.AMT.OFFT.CD	100847181.900000006
10	Afghanistan	AFG	PPG, official creditors (DIS, current US\$)	DT.DIS.OFFT.CD	72894453.700000003

- **Distinct Countries:** The analysis begins by determining the number of distinct countries included in the dataset. The total number of distinct countries is calculated and reported as the "total_distinct_countries."

```
SELECT COUNT(DISTINCT country_name) AS total_distinct_countries
FROM international_debt;
```

	total_distinct_countries bigint
1	124

- **Distinct Debt Indicators:** The distinct debt indicators present in the dataset are identified and listed as the "distinct_debt_indicators."

```
SELECT DISTINCT indicator_code AS distinct_debt_indicators
FROM international_debt
ORDER BY distinct_debt_indicators;
```

	distinct_debt_indicators character varying
5	DT.AMT.OFFT.CD
6	DT.AMT.PBND.CD
7	DT.AMT.PCBK.CD
8	DT.AMT.PROP.CD
9	DT.AMT.PRVT.CD
10	DT.DIS.BLAT.CD
11	DT.DIS.DLXF.CD
12	DT.DIS.MLAT.CD
13	DT.DIS.OFFT.CD
14	DT.DIS.PCBK.CD
15	DT.DIS.PROP.CD
16	DT.DIS.PRVT.CD
17	DT.INT.BLAT.CD
18	DT.INT.DLXF.CD
19	DT.INT.DPNG.CD
20	DT.INT.MLAT.CD
21	DT.INT.OFFT.CD
22	DT.INT.PBND.CD
23	DT.INT.PCBK.CD
24	DT.INT.PROP.CD
25	DT.INT.PRVT.CD

Analysis:

- **Total Debt Amount:** The total amount of debt owed by the countries in the dataset is calculated and reported as the "total_debt." The amount is presented in million units and rounded to two decimal places.

SELECT

```
        ROUND (SUM(debt),2) AS total_debt
FROM international_debt;
```

	total_debt numeric
1	3079734487675.80

- **Country with Highest Debt:** The country with the highest debt is identified by calculating the sum of debt for each country. The result includes the "total_debt" and the "country_name" with the highest debt.

```
SELECT SUM(debt) AS total_debt, country_name
FROM international_debt
GROUP BY country_name
ORDER BY total_debt DESC;
```

	total_debt numeric	country_name character varying
1	285793494734.200001568	China
2	280623966140.800007581	Brazil
3	247608723990.600003211	South Asia
4	212880992791.900000988	Least developed countries: UN classification
5	191289057259.200001943	Russian Federation
6	179048127207.299999298	IDA only
7	151125758035.300003616	Turkey
8	133627060958.399997148	India
9	124596786217.300001668	Mexico
10	113435696693.499999149	Indonesia
11	86491206346.599999659	Cameroon
12	71368842500.100001399	Angola

- Analyzing Highest Debt Country – China: Further analysis focuses on the country with the highest debt, specifically China. The indicators, debt amounts, and proportions of debt relative to the total debt for China are presented.

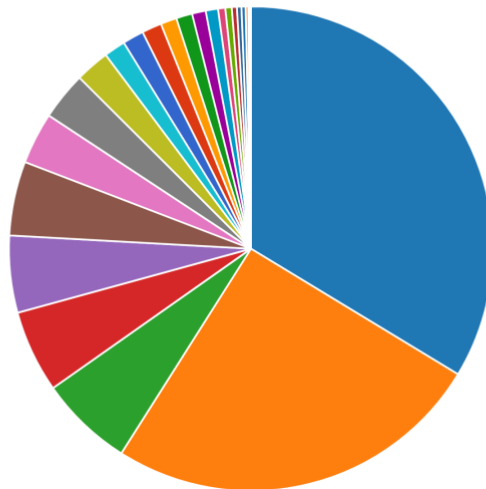
```

SELECT
indicator_name,
indicator_code,
debt,
(debt/ sum(debt) OVER ()) AS proportion
FROM international_debt
WHERE country_name = 'China'
ORDER BY proportion DESC

```

	indicator_name character varying	indicator_code character varying	debt numeric	proportion numeric
1	Principal repayments on external debt, long-term (AMT, current US\$)	DT.AMT.DLXF.CD	96218620835.699996948	0.33667183686314263611
2	Principal repayments on external debt, private nonguaranteed (PNG) (AMT, current U...	DT.AMT.DPNG.CD	72392986213.800003052	0.25330522754245519876
3	Interest payments on external debt, long-term (INT, current US\$)	DT.INT.DLXF.CD	17866548651.400001526	0.06251558898503496373
4	Disbursements on external debt, long-term (DIS, current US\$)	DT.DIS.DLXF.CD	15692563746.100000381	0.05490875067221087808
5	PPG, private creditors (AMT, current US\$)	DT.AMT.PRVT.CD	14677464465.899999619	0.05135688788000811683
6	Interest payments on external debt, private nonguaranteed (PNG) (INT, current US\$)	DT.INT.DPNG.CD	14142718751.600000381	0.04948579660552919527
7	PPG, bonds (AMT, current US\$)	DT.AMT.PBND.CD	9834677000	0.03441182945450407895
8	PPG, official creditors (AMT, current US\$)	DT.AMT.OFFT.CD	9148170156	0.03200972144067934055
9	PPG, bilateral (AMT, current US\$)	DT.AMT.BLAT.CD	6532446441.899999619	0.02285722580206190558
10	PPG, private creditors (DIS, current US\$)	DT.DIS.PRVT.CD	4111062474	0.01438473075751238289
11	PPG, commercial banks (AMT, current US\$)	DT.AMT.PCBK.CD	4046243298.5	0.01415792652055700864
12	PPG, commercial banks (DIS, current US\$)	DT.DIS.PCBK.CD	3777050273.300000191	0.01321601206078121609
13	PPG, official creditors (DIS, current US\$)	DT.DIS.OFFT.CD	3079501272.099999905	0.01077526720810795890
14	PPG, multilateral (DIS, current US\$)	DT.DIS.MLAT.CD	3079501272.099999905	0.01077526720810795890
15	PPG, multilateral (AMT, current US\$)	DT.AMT.MLAT.CD	2615723714.099999905	0.00915249563861743330
16	PPG, private creditors (INT, current US\$)	DT.INT.PRVT.CD	2350524517.900000095	0.00822455570616149604
17	PPG, official creditors (INT, current US\$)	DT.INT.OFFT.CD	1373305381.900000095	0.00480523667334426907
18	PPG, bonds (INT, current US\$)	DT.INT.PBND.CD	1224249000	0.00428368392758065813
19	PPG, commercial banks (INT, current US\$)	DT.INT.PCBK.CD	969933090	0.00339382493958471190
20	PPG, multilateral (INT, current US\$)	DT.INT.MLAT.CD	858406974.799999952	0.00300359172135235138
21	PPG, other private creditors (AMT, current US\$)	DT.AMT.PROP.CD	796544167.399999976	0.00278713190494703048
22	PPG, bilateral (INT, current US\$)	DT.INT.BLAT.CD	514898407.100000024	0.00180164495199191727
23	PPG, other private creditors (DIS, current US\$)	DT.DIS.PROP.CD	334012200.699999988	0.00116871869673116743
24	PPG, other private creditors (INT, current US\$)	DT.INT.PROP.CD	156342427.900000006	0.00054704683899612570

DT.AMT.DLXF.CD DT.AMT.DPNG.CD DT.INT.DLXF.CD DT.DIS.DLXF.CD DT.AMT.PRVT.CD DT.INT.DPNG.CD
 DT.AMT.PBND.CD DT.AMT.OFFT.CD DT.AMT.BLAT.CD DT.DIS.PRVT.CD DT.AMT.PCBK.CD DT.DIS.PCBK.CD
 DT.DIS.OFFT.CD DT.DIS.MLAT.CD DT.INT.PRVT.CD DT.INT.OFFT.CD DT.INT.PBND.CD
 DT.INT.PCBK.CD DT.INT.MLAT.CD DT.AMT.PROP.CD DT.INT.BLAT.CD DT.DIS.PROP.CD DT.INT.PROP.CD



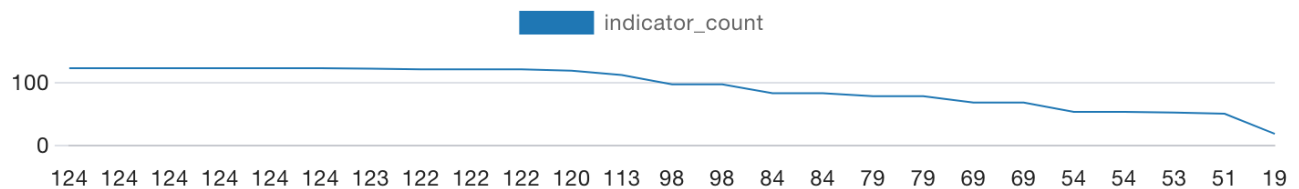
- Calculate the count of each indicator_code among countries: we discovered a common debt issue shared among multiple countries, including China.

```

SELECT
    indicator_code,
    COUNT(indicator_code) AS indicator_count
FROM international_debt
GROUP BY indicator_code
ORDER BY indicator_count DESC, indicator_code DESC;

```




	indicator_code character varying	indicator_count bigint
1	DT.INT.OFFT.CD	124
2	DT.INT.MLAT.CD	124
3	DT.INT.DLXF.CD	124
4	DT.AMT.OFFT.CD	124
5	DT.AMT.MLAT.CD	124
6	DT.AMT.DLXF.CD	124
7	DT.DIS.DLXF.CD	123
8	DT.INT.BLAT.CD	122
9	DT.DIS.OFFT.CD	122
10	DT.AMT.BLAT.CD	122
11	DT.DIS.MLAT.CD	120
12	DT.DIS.BLAT.CD	113
13	DT.INT.PRVT.CD	98
14	DT.AMT.PRVT.CD	98
15	DT.INT.PCBK.CD	84
16	DT.AMT.PCBK.CD	84
17	DT.INT.DPNG.CD	79
18	DT.AMT.DPNG.CD	79
19	DT.INT.PBND.CD	69
20	DT.AMT.PBND.CD	69
21	DT.INT.PROP.CD	54
22	DT.AMT.PROP.CD	54
23	DT.DIS.PRVT.CD	53
24	DT.DIS.PCBK.CD	51
25	DT.DIS.PROP.CD	19



- Analysis of Countries Owing the Most: An aggregate analysis is conducted to determine the countries that owe the most debt across different categories. The results include the "country_name," "indicator_code," and "max_debt" (the maximum debt amount) and are sorted in descending order.

```
SELECT
    country_name,
    indicator_code,
    MAX(debt) AS max_debt
```

```
FROM international_debt
GROUP BY country_name, indicator_code
ORDER BY max_debt DESC;
```

	country_name character varying 	indicator_code character varying 	max_debt numeric 
1	China	DT.AMT.DLXF.CD	96218620835.699996948
2	Brazil	DT.AMT.DLXF.CD	90041840304.100006104
3	China	DT.AMT.DPNG.CD	72392986213.800003052
4	Russian Federation	DT.AMT.DLXF.CD	66589761833.5
5	Turkey	DT.AMT.DLXF.CD	51555031005.800003052

- Countries with Tied Maximum Debt: Some countries have tied maximum debt amounts across multiple categories. This analysis identifies these countries, their corresponding debt indicators, and the tied maximum debt amounts.

```
SELECT
    max_debt.country_name,
    international_debt.indicator_name,
    max_debt.maximum
FROM
    (
        SELECT
            country_name,
            MAX(debt) AS maximum
        FROM
            international_debt
        WHERE
            debt <> 0
        GROUP BY
            country_name
    ) AS max_debt
LEFT JOIN
    international_debt ON max_debt.country_name =
```

```
international_debt.country_name
    AND max_debt.maximum = international_debt.debt
ORDER BY
    max_debt.maximum DESC
LIMIT 10;
```

	country_name character varying	indicator_name character varying	maximum numeric
1	China	Principal repayments on external debt, long-term (AMT, current US\$)	96218620835.699996948
2	Brazil	Principal repayments on external debt, long-term (AMT, current US\$)	90041840304.100006104
3	Russian Federation	Principal repayments on external debt, long-term (AMT, current US\$)	66589761833.5
4	Turkey	Principal repayments on external debt, long-term (AMT, current US\$)	51555031005.800003052
5	South Asia	Principal repayments on external debt, long-term (AMT, current US\$)	48756295898.199996948
6	Least developed countries: UN classification	Disbursements on external debt, long-term (DIS, current US\$)	40160766261.599998474
7	IDA only	Disbursements on external debt, long-term (DIS, current US\$)	34531188113.199996948
8	India	Principal repayments on external debt, long-term (AMT, current US\$)	31923507000.799999237
9	Indonesia	Principal repayments on external debt, long-term (AMT, current US\$)	30916112653.799999237
10	Kazakhstan	Principal repayments on external debt, long-term (AMT, current US\$)	27482093686.400001526

In conclusion, this analysis provides valuable insights into international debt dynamics using The World Bank dataset. It explores various aspects, including total debt amounts, countries with the highest debt, average debt across indicators, and principal repayments. These findings contribute to a better understanding of international debt patterns and can inform policymakers, economists, and financial institutions in making informed decisions.

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