

The World Bank's International Debt Analysis

It's not that we humans only take debts to manage our necessities. A country may also take debt to manage its economy. For example, infrastructure spending is one costly ingredient required for a country's citizens to lead comfortable lives. The World Bank is the organization that provides debt to countries.

This project contains an analysis of international debt data collected by The World Bank. The dataset contains 53802 rows providing information about the amount of money that the World Bank has lent to countries across several categories from 1970 to 2018. The project aims to answer questions like:

- What amount of money has the World Bank lent to each country over the past 50 years?
- Which country borrowed the maximum and the minimum amount of money and what does that amount look like?
- What are the most common debt indicators for which nations borrow money?

Exploring the data

```
-- Exploring the first 10 rows of the data
SELECT *
FROM ids_data
LIMIT 10;
```

country_name	country_code	indicator_name	indicator_code	amount
Afghanistan	AFG	Average grace period on new external debt commitments (years)	DT.GPA.DPPG	85.7892
Afghanistan	AFG	Average grace period on new external debt commitments, private (years)	DT.GPA.PRVT	0
Afghanistan	AFG	Average grant element on new external debt commitments (%)	DT.GRE.DPPG	319.0471
Afghanistan	AFG	Average grant element on new external debt commitments, private (%)	DT.GRE.PRVT	0
Afghanistan	AFG	Average interest on new external debt commitments (%)	DT.INR.DPPG	6.6877
Afghanistan	AFG	Average interest on new external debt commitments, private (%)	DT.INR.PRVT	0
Afghanistan	AFG	Average maturity on new external debt commitments (years)	DT.MAT.DPPG	206.9333
Afghanistan	AFG	Average maturity on new external debt commitments, private (years)	DT.MAT.PRVT	0
Afghanistan	AFG	Commitments, bilateral creditors (COM, current US\$)	DT.COM.BLAT.CD	189102759
Afghanistan	AFG	Commitments, IBRD (COM, current US\$)	DT.COM.MIBR.CD	0

The data is divided into five columns, the first two defining the country, the third and fourth the debt indicator (indicators briefly specify the purpose of taking the debt), and the fifth the amount borrowed. Each row shows the amount of money borrowed by a country by a debt indicator.

So, what is the total number of countries included in this data and how much money did they each borrow from the World Bank?

Number of countries in the data

```
-- Number of distinct countries
SELECT COUNT(DISTINCT(country_name)) AS 'Number of Distinct Countries'
FROM ids_data;
```

Number of Distinct Countries
122

There are 122 countries listed in this data. Let's see how much each of them borrowed.

The amount borrowed by each country

```
-- Amount borrowed by each country
SELECT country_name,
       SUM(amount) AS 'Total amount borrowed'
FROM ids_data
GROUP BY 1
ORDER BY 1
LIMIT 10;
```

country_name	Total amount borrowed
Afghanistan	414036371563.0683
Albania	1246283819332.7483
Algeria	12353577153608.871
Angola	10348337801010.451
Argentina	53213098935595.09
Armenia	1354112183258.8035
Azerbaijan	2286659507395.8076
Bangladesh	11422365093569.709
Belarus	4535506499876.142
Belize	402507142500.83826

Those are some very big numbers, let's display the total amount column in Billions and round the result to 2 decimals.

```
-- Amount borrowed by each country in Billions
SELECT country_name,
       ROUND(SUM(amount) / 1000000000, 2) AS 'Total amount borrowed in Billions'
FROM ids_data
GROUP BY 1
ORDER BY 1
LIMIT 10;
```

country_name	Total amount borrowed in Billions
Afghanistan	414.04
Albania	1246.28
Algeria	12353.58
Angola	10348.34
Argentina	53213.1
Armenia	1354.11
Azerbaijan	2286.66
Bangladesh	11422.37
Belarus	4535.51
Belize	402.51

Now the numbers are clearer, let's find out the country that borrowed the most and least from the world bank.

Highest borrower

```
-- Highest borrower
SELECT country_name AS highest_borrower,
       ROUND(SUM(amount) / 1000000000, 2) AS 'Total amount borrowed in Billions'
FROM ids_data
GROUP BY 1
ORDER BY 2 DESC
LIMIT 1;
```

highest_borrower	Total amount borrowed in Billions
China	117932.5

Lowest borrower

```
-- LOWEST borrower
```

```
SELECT
    country_name AS lowest_borrower,
    ROUND(SUM(amount) / 1000000000, 2) AS 'Total Debt in Billions'
FROM ids_data
GROUP BY 1
ORDER BY 2
LIMIT 1;
```

Lowest_borrower	Total Debt in Billions
Timor-Leste	18.01

China is the country that borrowed the most among the countries in the dataset, while Timor-Leste borrowed the least. Timor-Leste is a relatively new country located in Southeast Asia with a population of around 1.3 million people, its economy is based on agriculture and the oil and gas industry. As a small nation, Timor-Leste does not borrow big amounts compared to larger economies such as China.

Now that we know that the least borrower is Timor-Leste with an amount of \$ 23.91 billion, and the highest borrower is China with an amount of \$158032.5 billion, what is the average borrowing amount among countries?

Average borrowing amount

```
SELECT
    ROUND(AVG(`Total amount borrowed in Billions`),
          2) AS 'Average borrowing amount'
FROM
    (SELECT
        country_name,
        ROUND(SUM(amount) / 1000000000, 2) AS 'Total amount borrowed in Billions'
    FROM
        ids_data
    GROUP BY 1) cte;
```

Average borrowing amount
10098.64

The average amount that countries have borrowed from the World Bank is approximately \$10737.07 billion. Now let's dig deeper into the debt indicators and try to get some insights from them.

Number of Indicators

```
SELECT COUNT(DISTINCT (indicator_code)) AS 'Number of indicators'
FROM ids_data
```

Number of indicators
441

There are lots of indicators in this data, let's do some more analysis and find out the total and percent of total amounts borrowed across the indicators.

Indicator analysis: total and percent of total

```
SELECT
    indicator_name,
    ROUND(SUM(amount) / 1000000000, 2) AS 'Total in Billion',
    ROUND((SUM(amount) / 1000000000) / (SELECT SUM(amount) / 1000000000
                                          FROM ids_data) * 100, 2) AS 'Percent of Total'
FROM ids_data
GROUP BY 1
ORDER BY 2 DESC
LIMIT 10;
```

indicator_name	Total in Billion	Percent of Total
External debt stocks, total (DOD, current US\$)	109703.31	8.9
External debt stocks, long-term (DOD, current US\$)	82090.42	6.66
External debt stocks, public and publicly guaranteed (PPG) (DOD, current US\$)	51510.18	4.18
External debt stocks, public sector (PPG) (DOD, current US\$)	51271.99	4.16
External debt stocks, long-term public sector (DOD, current US\$)	51247.26	4.16
External debt stocks, variable rate (DOD, current US\$)	47779.24	3.88
External debt stocks, general government sector (PPG) (DOD, current US\$)	37101.17	3.01
External debt stocks, long-term private sector (DOD, current US\$)	30829.83	2.5
External debt stocks, private nonguaranteed (PNG) (DOD, current US\$)	30578.81	2.48
PS, private creditors (DOD, current US\$)	25841.49	2.1

The above table shows the top 10 indicators that countries borrowed the most for, and it is not surprising that External debt stocks are one of the top debt indicators that countries borrow the most for. External debt is often used by countries to finance investments in infrastructure, and development projects, or to cover budget deficits.

Earlier we found out that China is the biggest borrower from the world bank, let's see that in relation to the debt indicators.

China's debt by indicators

```
-- China's debt by indicators
SELECT
    indicator_name,
    ROUND(SUM(amount) / 1000000000, 2) AS 'Total in Billion',
    ROUND((SUM(amount) / 1000000000) / (SELECT SUM(amount) / 1000000000
        FROM ids_data
        WHERE country_name = 'China') * 100, 2) AS
    'Percent of Total'
FROM ids_data
WHERE country_name = 'China'
GROUP BY 1
ORDER BY 2 DESC;
```

indicator_name	Total in Billion	Percent of Total
External debt stocks, total (DOD, current US\$)	16600	14.08
External debt stocks, short-term (DOD, current US\$)	9780	8.29
External debt stocks, long-term (DOD, current US\$)	6710	5.69
External debt stocks, variable rate (DOD, current US\$)	4560	3.87
External debt stocks, private nonguaranteed (PNG) (DOD, current US\$)	3480	2.95
External debt stocks, long-term private sector (DOD, current US\$)	3480	2.95
External debt stocks, public and publicly guaranteed (PPG) (DOD, current US\$)	3230	2.74
External debt stocks, public sector (PPG) (DOD, current US\$)	3230	2.74
External debt stocks, long-term public sector (DOD, current US\$)	3230	2.74
PNG, commercial banks and other creditors (DOD, current US\$)	2700	2.29

China's biggest debt indicators are mainly related to its external debt stocks, with the largest being total external debt stocks at 14.08% of total debt. Short-term and long-term debt stocks also make up a significant portion at 8.29% and 5.69% respectively. It's important to note that a significant portion of the external debt is a variable rate, which carries the risk of fluctuating

interest rates. Additionally, China has a significant amount of non-guaranteed debt and debt held by commercial banks, which may pose potential risks to the country's ability to repay the debt and the stability of its financial system.