International Debt Analysis: World Bank Data Insights

Executive Summary

This project analyzes international debt held by developing countries using data collected from The World Bank. The objective was to answer key questions about the number of countries represented, identify the country with the highest total debt, and pinpoint where debt repayments are lowest. This work provides a clear foundation for understanding global debt distribution, supporting policy discussions and international financial transparency.

Project Objectives

- **Count the number of distinct countries in the dataset**
- **Find the country with the highest level of debt**
- **Identify the country with the lowest repayments on external debt**

Technologies & Tools Used

- **Database:** PostgreSQL, World Bank international debt dataset
- **Analysis:** SQL queries executed in Jupyter Notebook
- **Portfolio Platform:** DataCamp DataLab

Dataset Description

Table: `international_debt`

Column	Description	Type
`country_name`	Country name	varchar
`country_code`	Country code	varchar

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`indicator_name`	Debt indicator description	varchar
`indicator_code`	Debt indicator code	varchar
`debt`	Indicator value (current US dollars)	float

Approach & Methodology

1. **Distinct Country Count**: Used SQL aggregation to count unique country entries.
2. **Highest Debt Identification**: Summed debt by country and selected the highest value.
3. **Lowest Repayment**: Filtered indicators for repayment and selected the minimum value.

Key SQL Queries & Outputs

1. **How many distinct countries are present?**

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

Result: `124` countries

2. **Which country has the highest amount of debt?**

```
SELECT country_name, SUM(debt) AS total_debt
FROM international_debt
GROUP BY country_name
ORDER BY total_debt DESC
LIMIT 1;
```

Result: *China* with $285,793,500,000

3. **Which country has the lowest amount of repayments?**

```
SELECT country_name, indicator_name, MIN(debt) AS lowest_repayment
FROM international_debt
WHERE indicator_name LIKE '%Principal repayments%'
```

```
GROUP BY country_name, indicator_name
ORDER BY lowest_repayment ASC
LIMIT 1;
```

Result:

- *Timor-Leste*
- Indicator: Principal repayments on external debt, long-term (current US$)
- Repayments: $825,000

Results & Impact

Metric	Value
Distinct countries in dataset	124
Country with highest debt	China ($285.8B)
Country with lowest repayments	Timor-Leste ($825K)

These insights help illuminate the scale of debt for major economies (like China) and highlight where repayments are minimal, guiding further investigation and policymaking.

Challenges & Solutions

- **Data Quality:** Ensured correct aggregation and filtering to avoid duplication.
- **Indicator Selection:** Used indicator descriptions to isolate relevant repayment data.
- **Reproducibility:** All queries and results are fully reproducible in SQL/Jupyter.

Conclusion

This international debt analysis delivers a clear overview of global debt holdings and repayment distributions among developing countries. It shows how SQL skills can be used to extract meaningful

insights from World Bank datasets, laying the groundwork for more complex economic and financial research.

Next Steps & Recommendations

- Explore debt trends over time or by region.
- Analyze the composition of debt indicators for more detailed comparisons.
- Develop dashboards or visualizations for broader policy communication.

For full query logic and reproduction, see the attached Jupyter notebook (notebook.ipynb).

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