HDAG [redacted organization name] Final Presentation

May 2022

Insights from our team's work analyzing grants

Summary

Grants

▮▮▮▮▮▮▮▮

2017 - present

▮▮▮▮ **Data**

- Country assignment tool
- Grant database
- Time series analysis
- Country analysis

- Categorized database
- Time series analysis
- Normalizing metric for grant analysis

1 Grant Analysis: Overview

Grant Compilation | **Time Series Analysis** | **Country Assignment** | **Time Series Analysis by Country**

We used Python, a popular programming language, to scrape and standardize the desired data from 6 websites:

We conducted preliminary time series analysis using Python to track # of grants and amount awarded by year since 2017

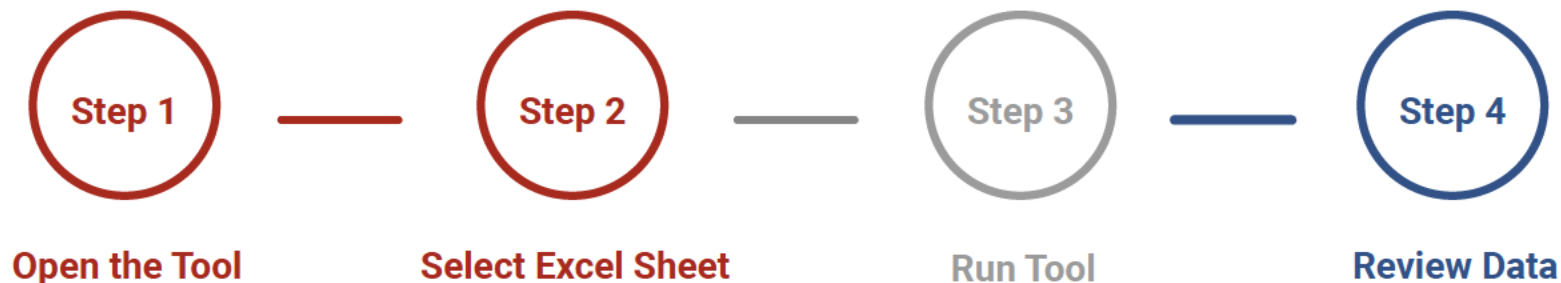We created a python tool to determine the country associated with ██████ recipient organizations.

We broke down the general time series analysis to track trends by country.

1.1 Country Assignment Tool: Overview

Step 1 — **Open the Tool**
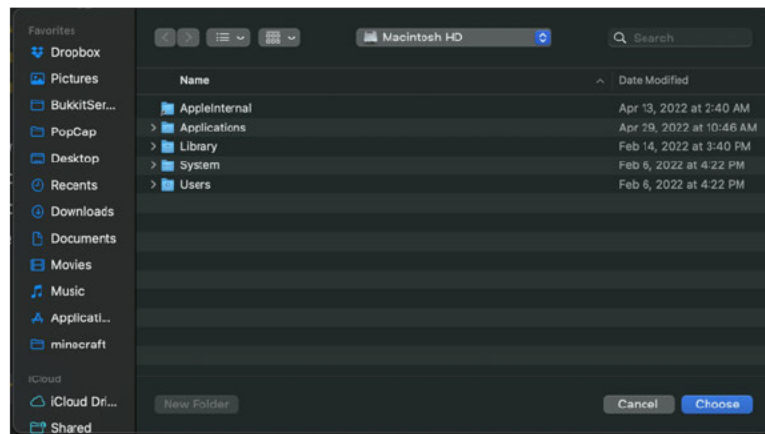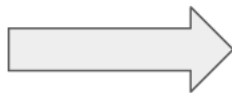
Step 2 — **Select Excel Sheet**

Step 3 — **Run Tool**

You can still use the computer in the meantime

Step 4 — **Review Data**

1.1 Country Assignment Tool: Steps 1-2

```python
if __name__ == '__main__':
    root = tk.Tk()
    root.withdraw()
    file_path = filedialog.askdirectory()
    root.destroy()
    df = pd.read_csv(file_path)
```
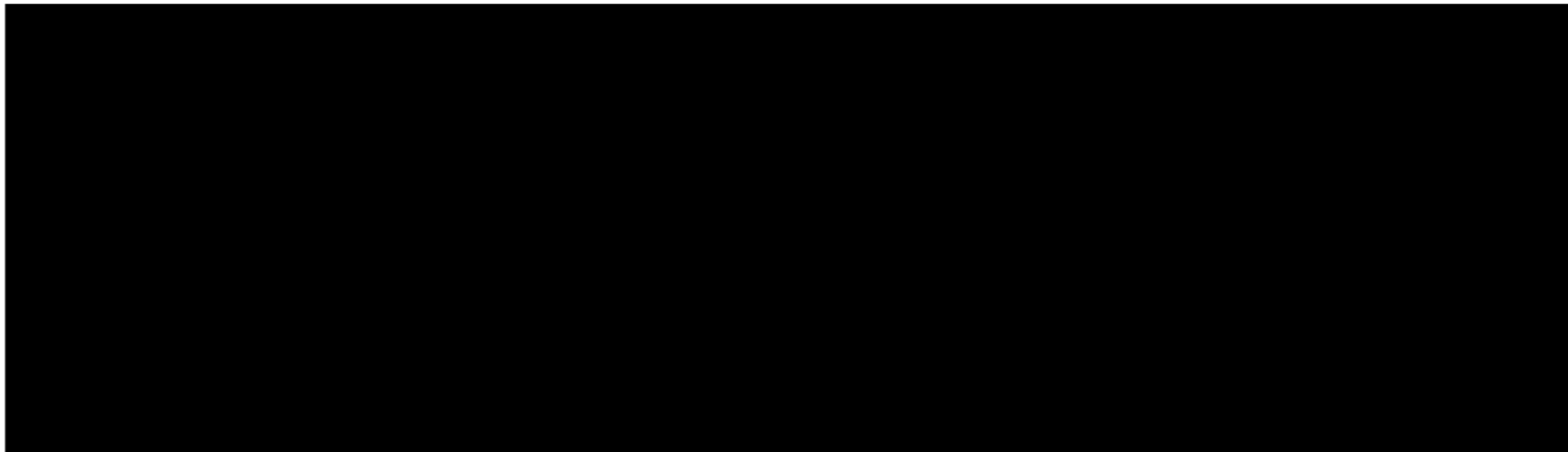
1.1 Country Assignment Tool: Step 3

```python
recipients = df["Recipient"]
count = 0
for recep in recipients:
```

```python
def getCountry(query):
```

1.1 Country Assignment Tool: Step 4

1.2 Giving Metrics Report Data
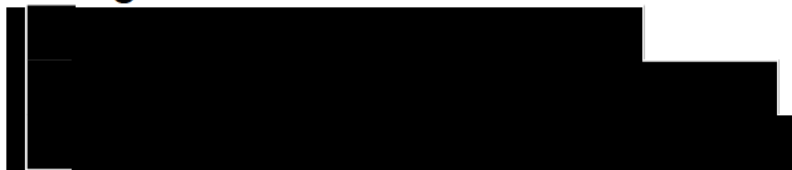
- 4 Categories
  ███████████████████████████████
  ███████████████████████████
    - Total *(Total)*
- Merged ████████████████████████████
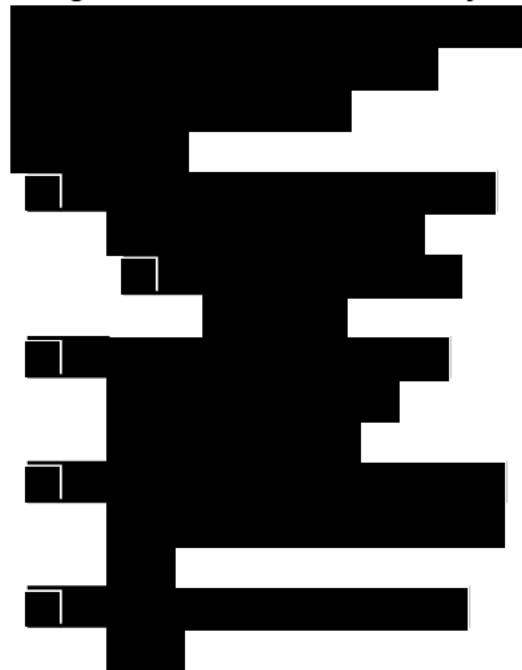- Country data - total number of charities & monetary donations broken down by country of origin

1.2 Giving Metrics Report - Donations per Year

Donations to Charities per Year
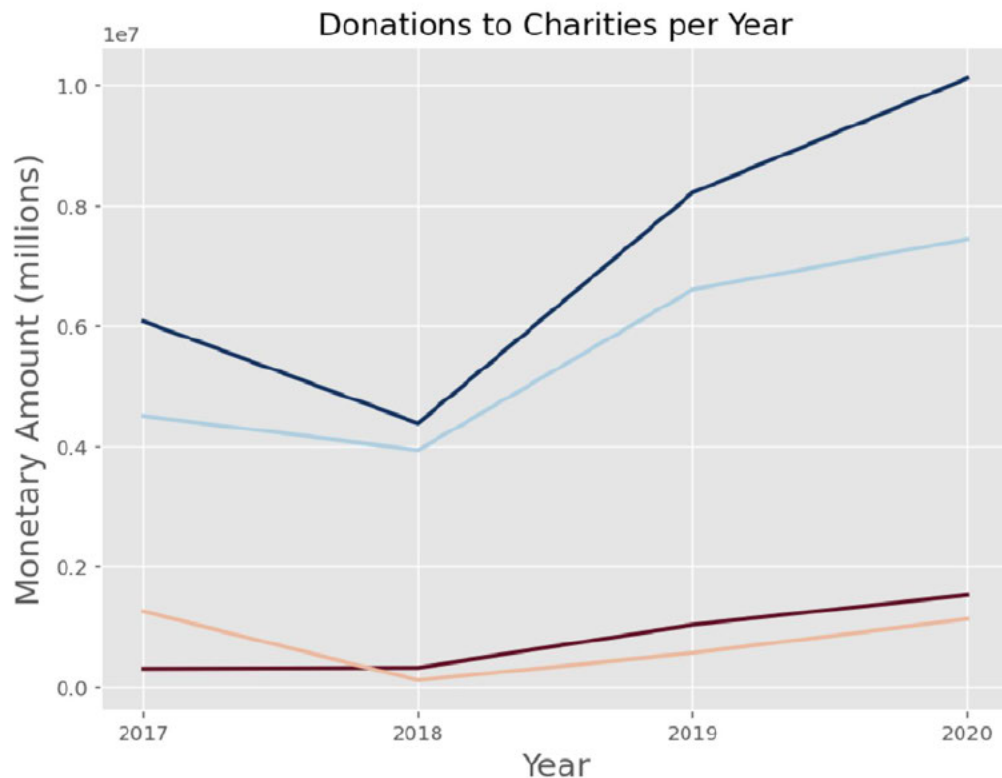
Insights from time series analysis

1.3 Giving Breakdown by Country

Data Preparation	Breakdown by Country and Year	Normalize and Refine

We aggregated and broke down data in multiple ways to draw more nuanced insights:

████████████
████████
████

We created pie-charts and map-based visualizations of giving breakdowns by country and year.

➔ Tools used: pycountry (support for standardizing geographic codes), plotly (generate geographic visualizations), pandas (general data science support)

We used ███████ counts by country to normalize our analysis, ██████████████

We displayed data on a logarithmic scale to give a clearer picture of the gradations in giving metrics

1.3 Giving Breakdown by Country: Code Snapshots
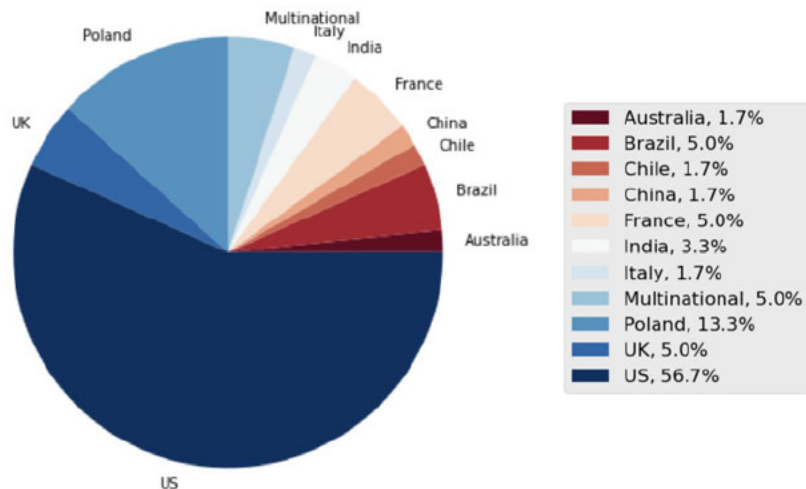
Data Preparation	Breakdown by Country and Year	Normalize and Refine

```
def prep_country (data, useYear=False, year):
    if useYear:
        data = data[data["Year"] == year]

    numgrants = {}
    amounts = {}
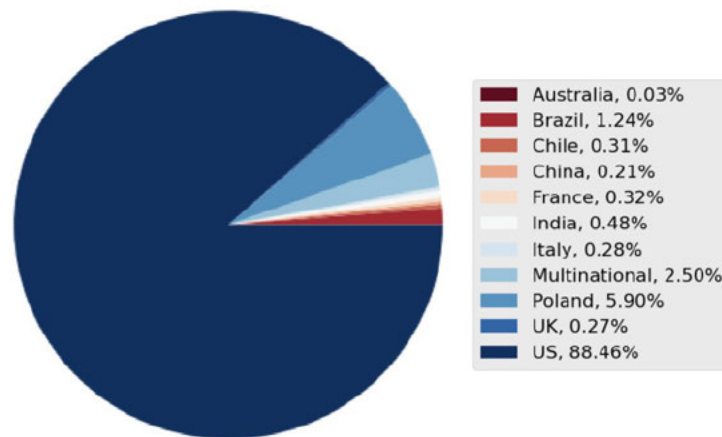```

# 1.3 Giving Metrics Percentages Per Country

## Number of Donations by Country



| | |
|---|---|
| ■ | Australia, 1.7% |
| ■ | Brazil, 5.0% |
| ■ | Chile, 1.7% |
| ■ | China, 1.7% |
| ■ | France, 5.0% |
| ■ | India, 3.3% |
| ■ | Italy, 1.7% |
| ■ | Multinational, 5.0% |
| ■ | Poland, 13.3% |
| ■ | UK, 5.0% |
| ■ | US, 56.7% |

## Monetary Amount by Country



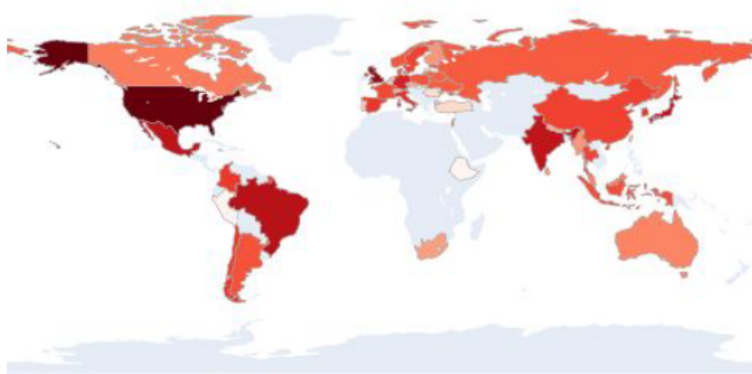| | |
|---|---|
| ■ | Australia, 0.03% |
| ■ | Brazil, 1.24% |
| ■ | Chile, 0.31% |
| ■ | China, 0.21% |
| ■ | France, 0.32% |
| ■ | India, 0.48% |
| ■ | Italy, 0.28% |
| ■ | Multinational, 2.50% |
| ■ | Poland, 5.90% |
| ■ | UK, 0.27% |
| ■ | US, 88.46% |

# 1.4 Giving Metrics: Internal vs. External, all years

*By amount in USD, log scale

Internal donations ▮▮▮▮▮▮

External donations
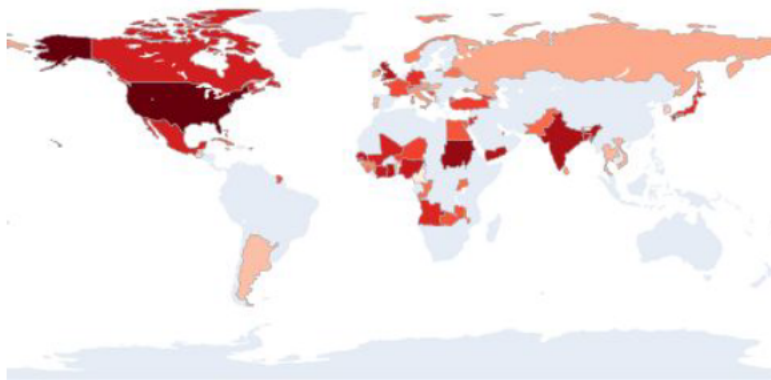


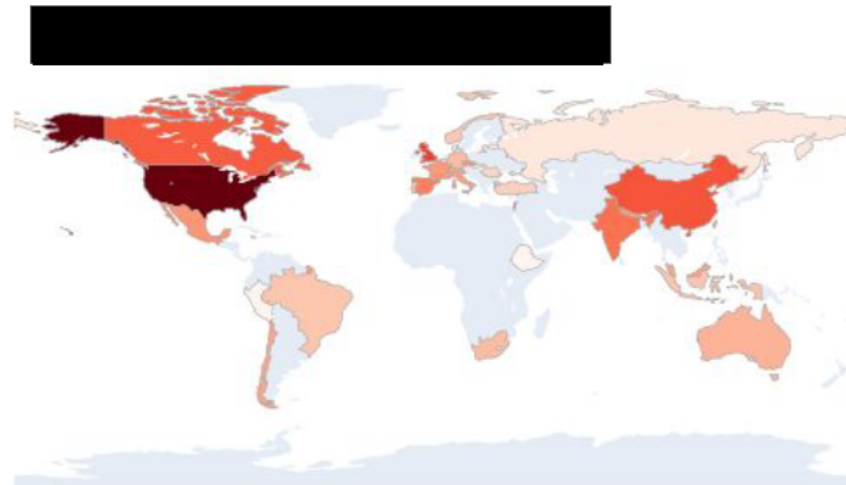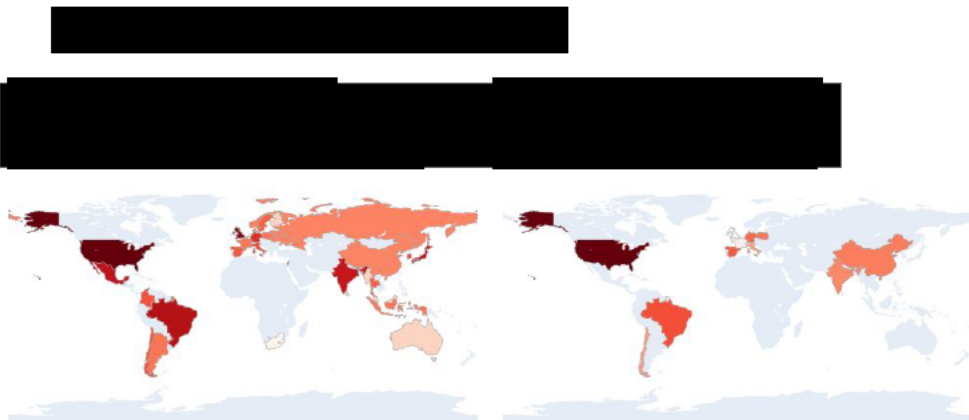Key insight: ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

*By amount in USD, log scale

# 1.4 Giving Metrics: Internal Breakdown, all years

**2**
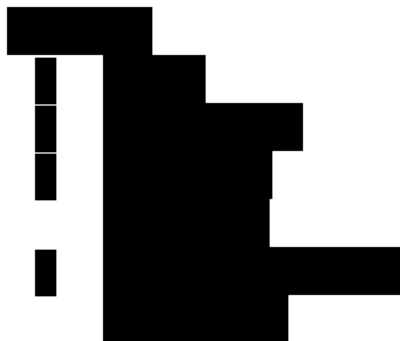
# 2.1 ███████ Data Collection

███████████ **Data** | **Selection** | **Organization**

Sourced data from ██████
█████████████
████████ data for over
245 countries

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```
df = █████████████████████████
df.loc██████████████████████████
df.loc██████████████████████████
```

All data collection and organization was performed using Python and Excel

2.2 ████████████ Data Organization

Organized available ████████████ data from 1961 through 2022 into easily navigable spreadsheet

Area	Item	Unit	1991	1992	1993	1994	1995	1996
Afghanistan								
Albania								
▶ Laying								

Area
➔ All data is primarily organized by country

Item
➔ Varies within each category

Unit
➔ All units are normalized within each category

Year
➔ Date range 1961-2020

2.3 Data Analysis - Insights
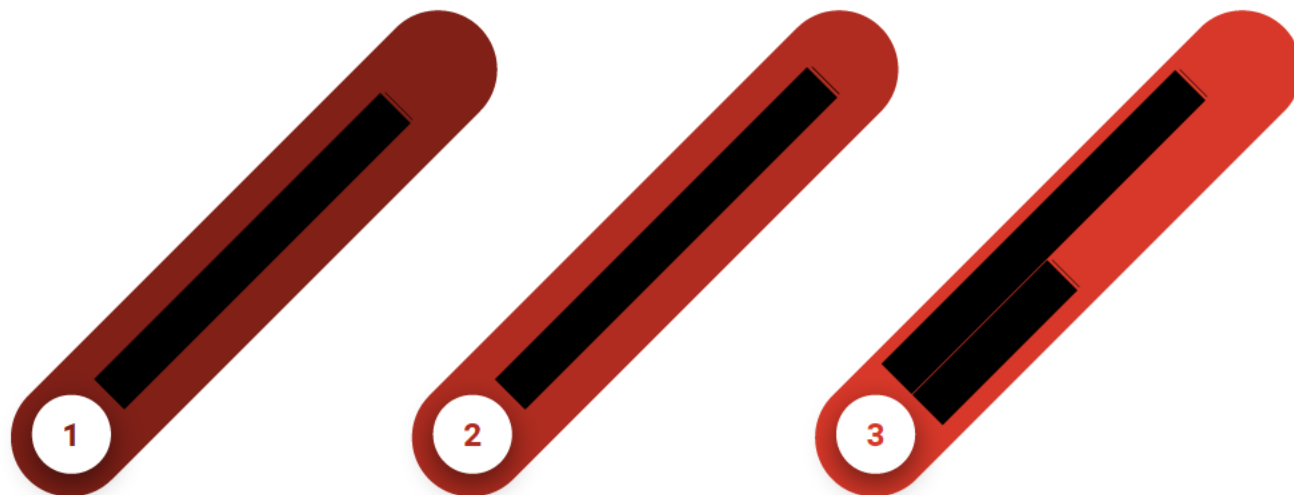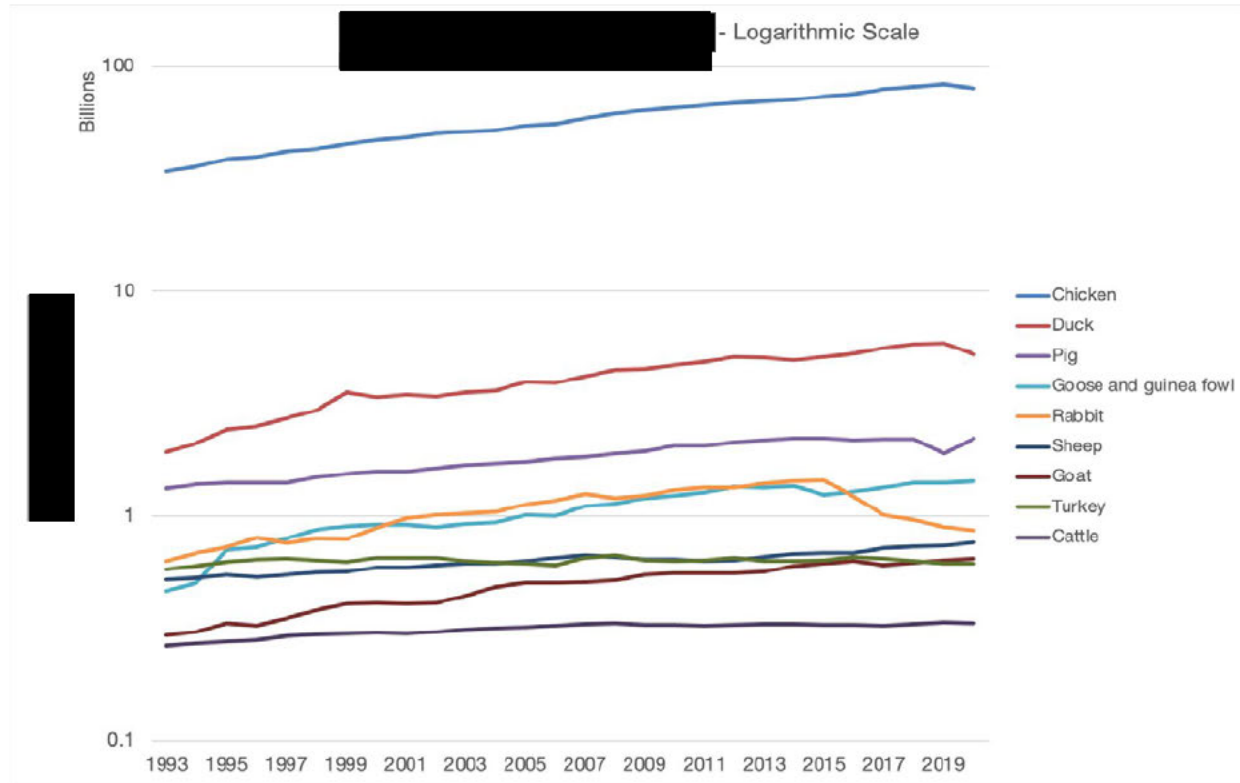
The time series shows ██ ████████████████████ from 1992 to 2020 in a base 10 *logarithmic* scale

2.3 ██████████████ Volumes Over Time

██████████████ by Country - Logarithmic Scale
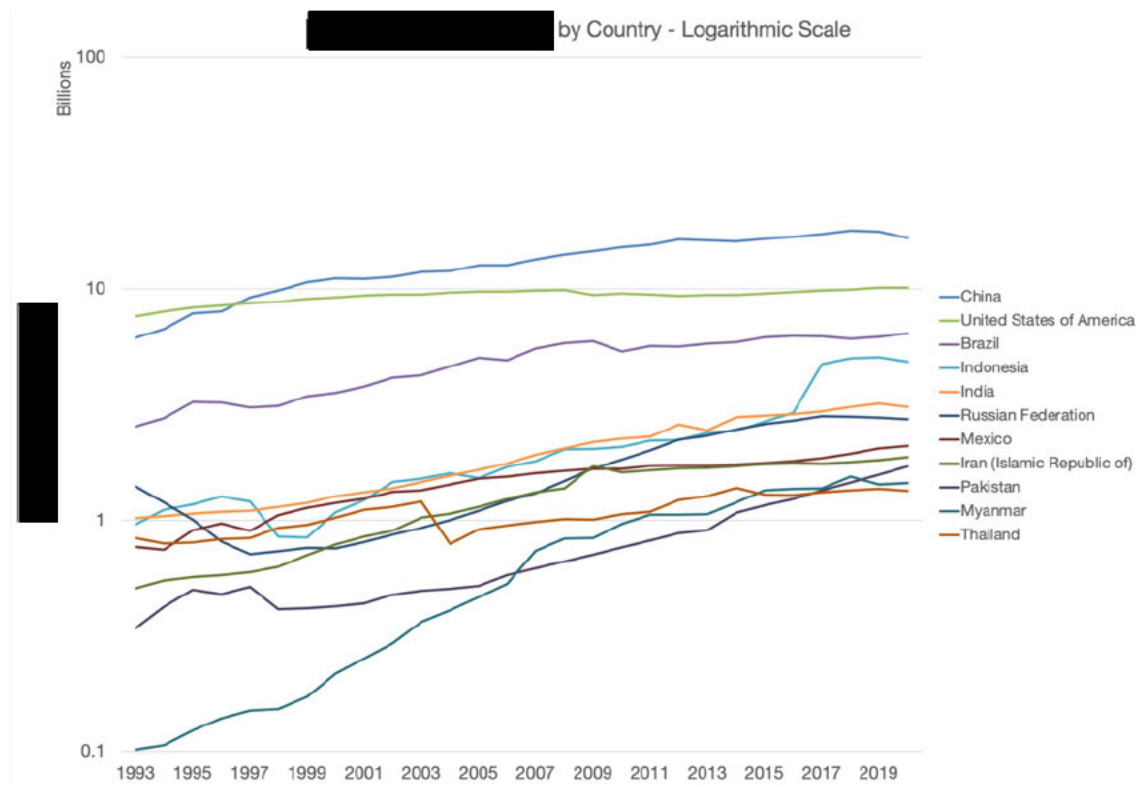
The time series shows ████████ ████████████ by country from 1993 to 2020 in a base 10 *logarithmic* scale

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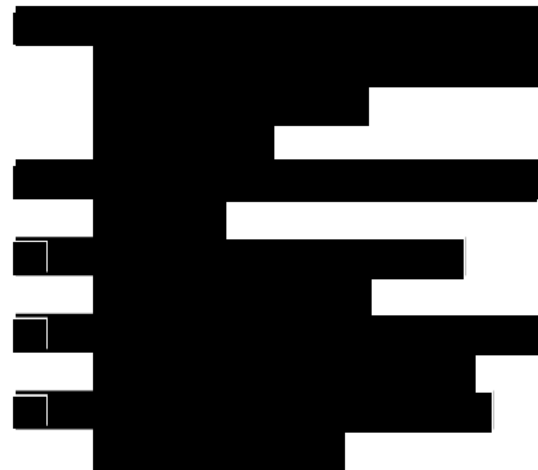
2.3 ███████████ Volumes by Country

███████ Volumes by Country
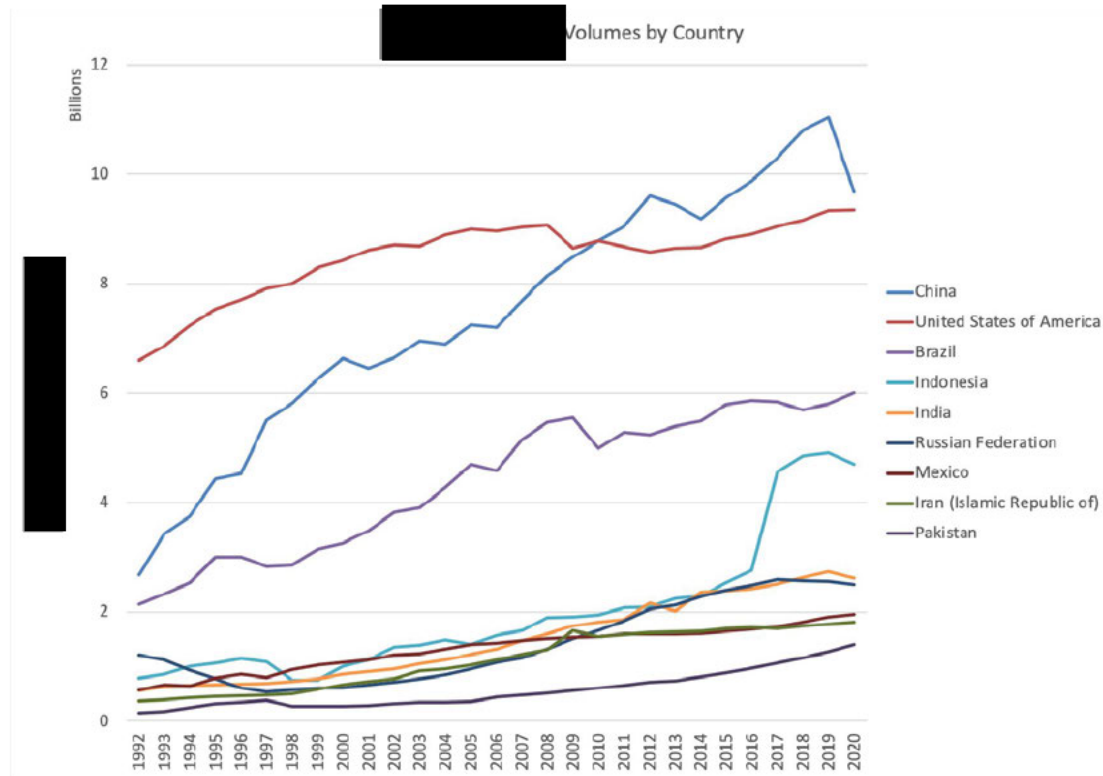
The time series shows ████████ ████████████████ by country from 1992 to 2020

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2.4 Normalized Giving Metrics by Country Over Time

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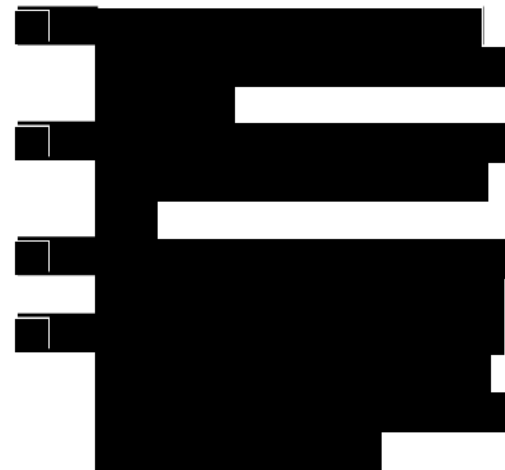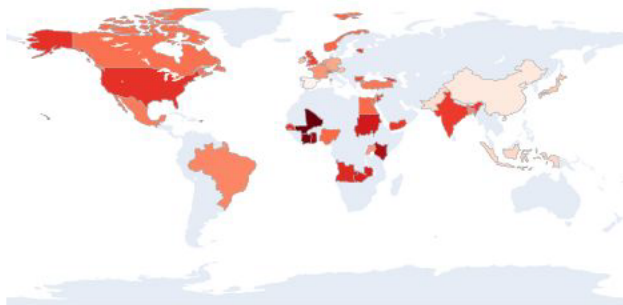
██████████████ 2017 to 2020

2.4 Normalized Giving Metrics by Country Over Time

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████████████████████ **2017 to 2020**
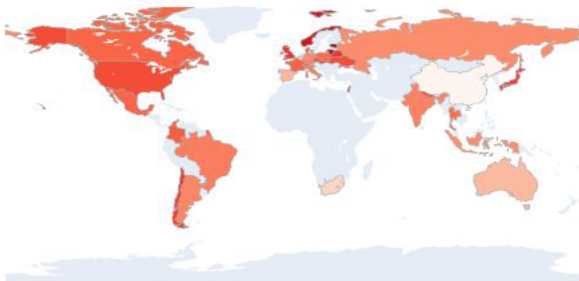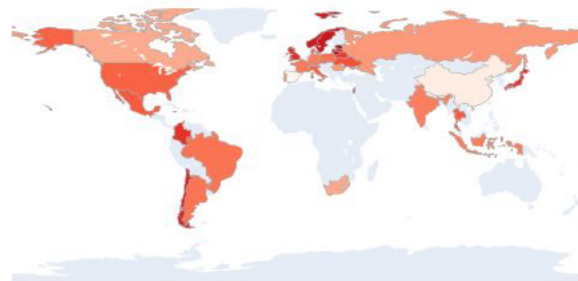

2017

2018

2019

2020

Summary

Grants

████████ organized by name and relevant info

Analysis

Grants over **time**
Grants by **country**
Normalization by ████████ data

Tools

Country assignment code tool for ████s future use

Next Steps

████████████████, reach out anytime for support!