ANALYZING THE GDP DISPARITIES BETWEEN NORTH AND SOUTH AMERICAN COUNTRIES AND THE FACTORS CONTRIBUTING TO THESE DIFFERENCES

SYMON ISLAM

MAT NO : 23088045

FAU-DATA SCIENCE

INTRODUCTION

- Despite being part of America, North and South American countries have huge disparities in GDP. In this project I took USA as North America's representative and Brazil as South America's representative. Expected finding:
- **What are the primary economic, political, and social factors driving the GDP disparities between North and South American countries and is there any correlation that exists?**
- **At which point significant GDP changes occurred for both countries over the years?**

DATA USED

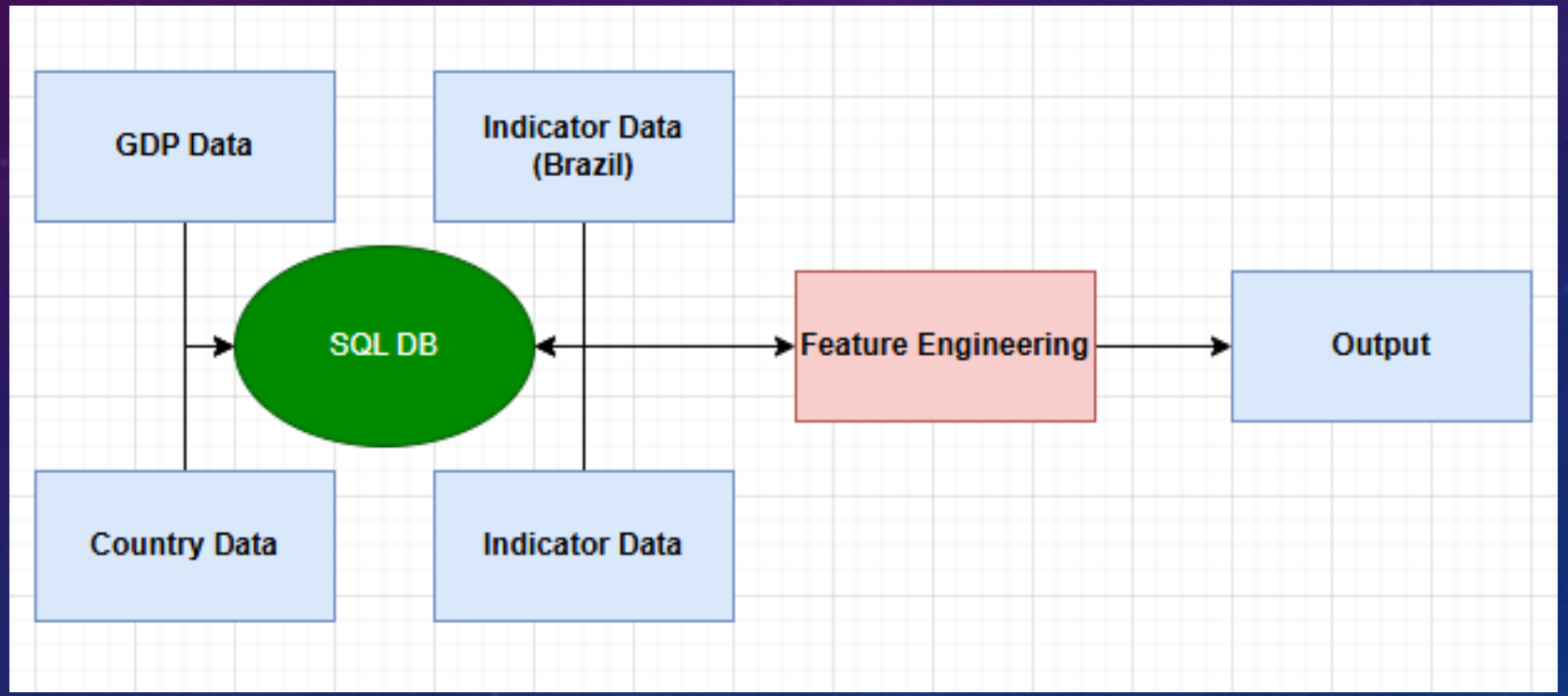
Initial Data

- Country Meta Data
- GDP Meta Data
- Indicator Data (USA)
- Indicator Data(Brazil)
- Format : CSV
- License: CC-BY 4.0, ODbL
- Click Here

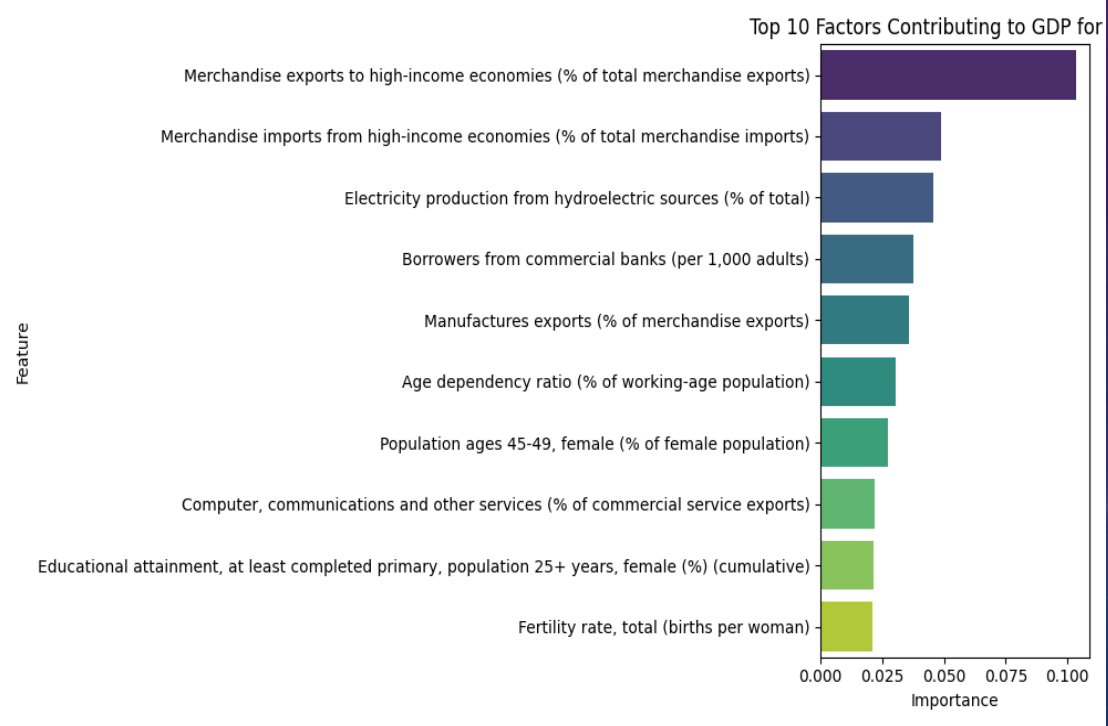
Processed Column

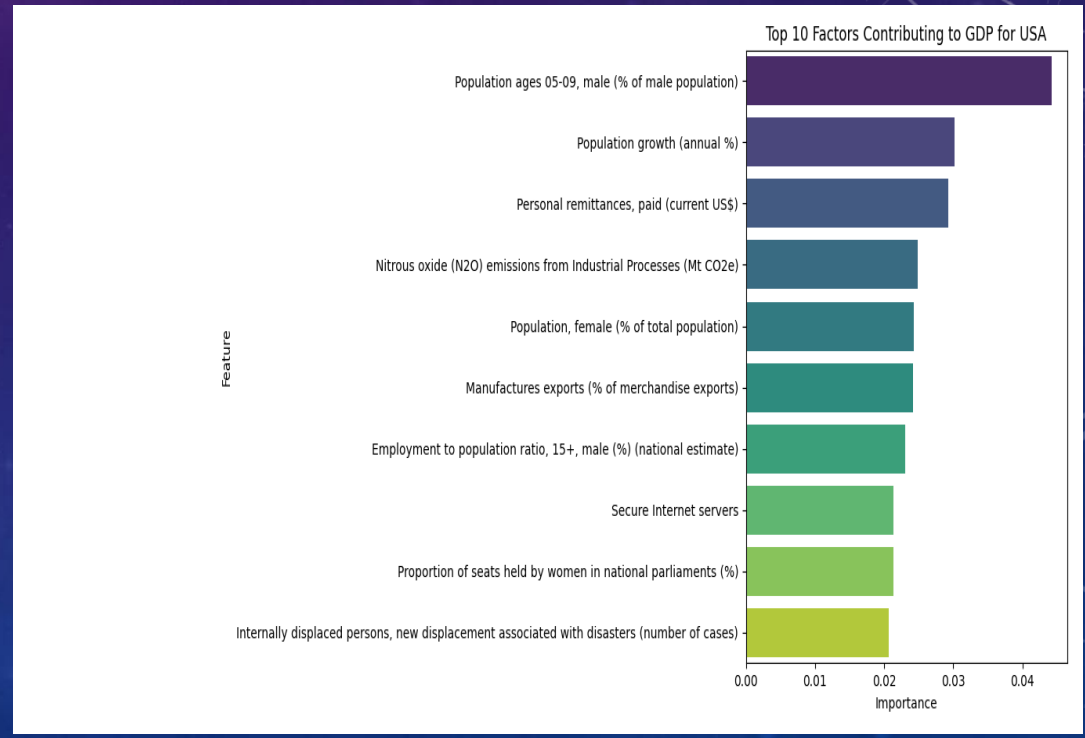
- Country Name
- Country Code
- Region
- Income Group
- Indicator Code
- Year

PIPELINE ARCHITECTURE

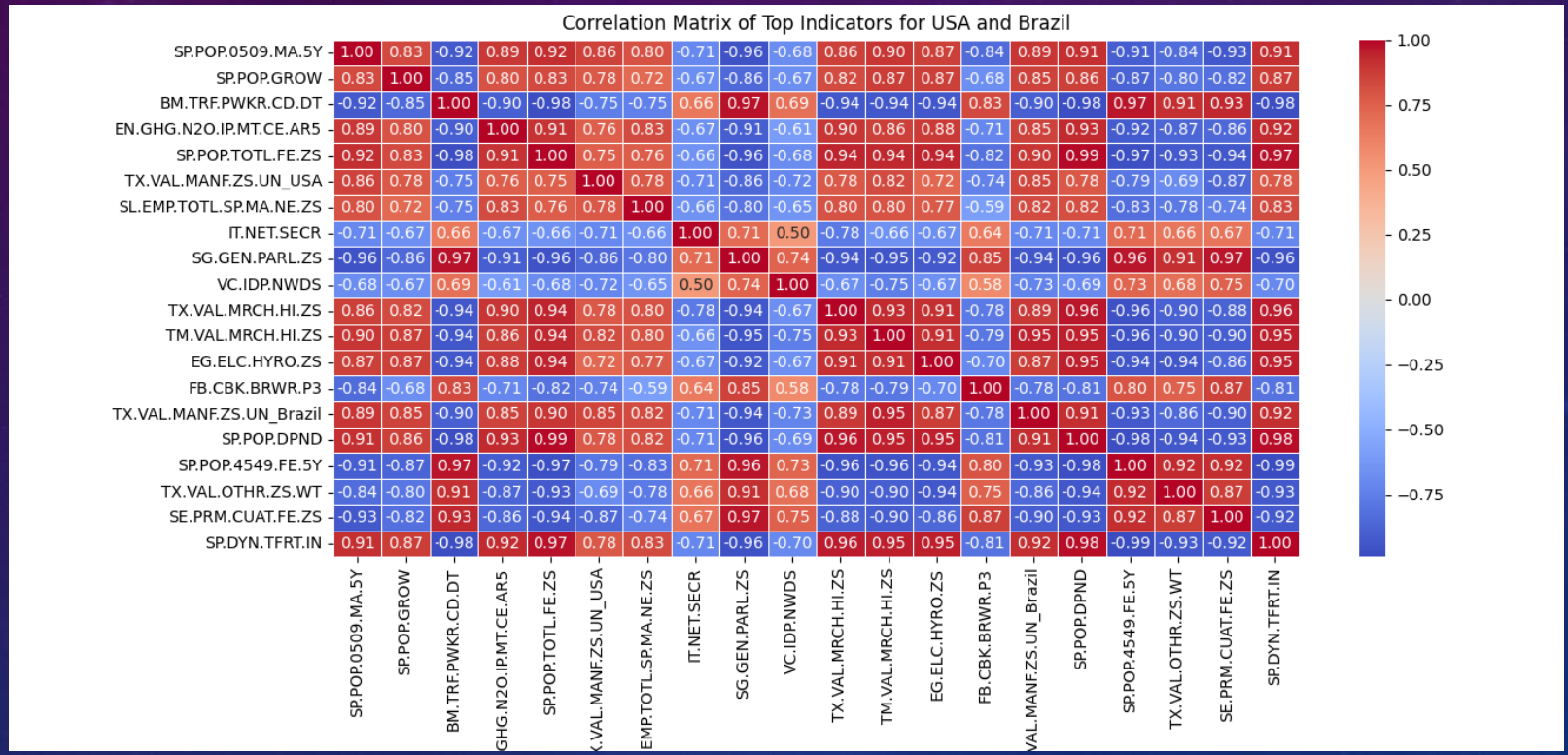


ANALYSIS


Top 10 Factors Contributing to GDP for
Merchandise exports to high-income economies (% of total merchandise exports)
Merchandise imports from high-income economies (% of total merchandise imports)
Electricity production from hydroelectric sources (% of total)
Borrowers from commercial banks (per 1,000 adults)
Manufactures exports (% of merchandise exports)
Age dependency ratio (% of working-age population)
Population ages 45-49, female (% of female population)
Computer, communications and other services (% of commercial service exports)
Educational attainment, at least completed primary, population 25+ years, female (%) (cumulative)
Fertility rate, total (births per woman)
Feature
0.000
0.025
0.050
0.075
0.100
Importance


Top 10 Factors Contributing to GDP for USA
Population ages 05-09, male (% of male population)
Population growth (annual %)
Personal remittances, paid (current US$)
Nitrous oxide (N2O) emissions from Industrial Processes (Mt CO2e)
Population, female (% of total population)
Manufactures exports (% of merchandise exports)
Employment to population ratio, 15+, male (%) (national estimate)
Secure Internet servers
Proportion of seats held by women in national parliaments (%)
Internally displaced persons, new displacement associated with disasters (number of cases)
Feature
0.00
0.01
0.02
0.03
0.04
Importance

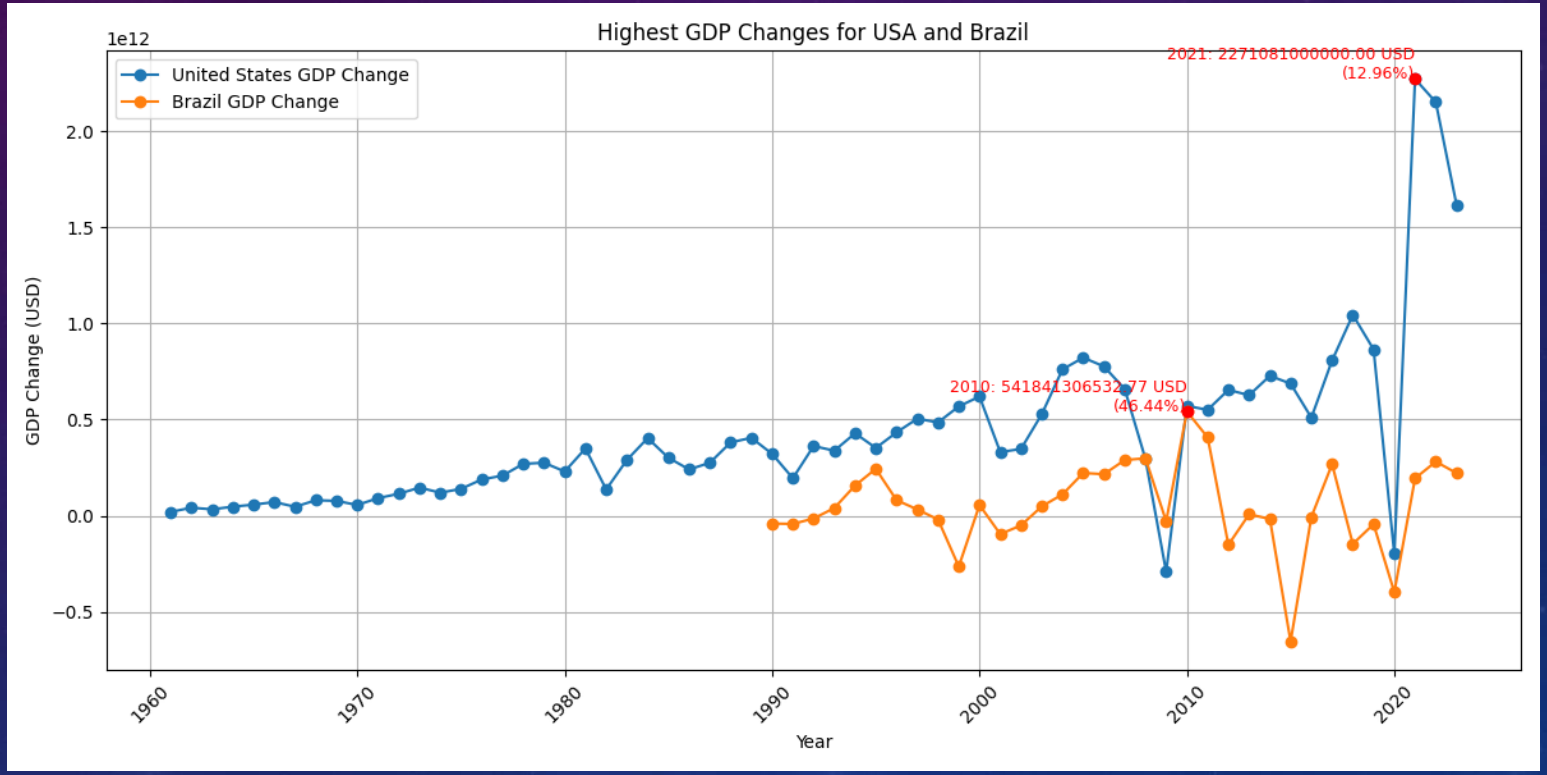
ANALYSIS


Correlation Matrix of Top Indicators for USA and Brazil
SP.POP.0509.MA.5Y 1.00 0.83 -0.92 0.89 0.92 0.86 0.80 -0.71 -0.96 -0.68 0.86 0.90 0.87 -0.84 0.89 0.91 -0.91 -0.84 -0.93 0.91
SP.POP.GROW 0.83 1.00 -0.85 0.80 0.83 0.78 0.72 -0.67 -0.86 -0.67 0.82 0.87 0.87 -0.68 0.85 0.86 -0.87 -0.80 -0.82 0.87
BM.TRF.PWKR.CD.DT -0.92 -0.85 1.00 -0.90 -0.98 -0.75 -0.75 0.66 0.97 0.69 -0.94 -0.94 -0.94 0.83 -0.90 -0.98 0.97 0.91 0.93 -0.98
EN.GHG.N2O.IP.MT.CE.AR5 0.89 0.80 -0.90 1.00 0.91 0.76 0.83 -0.67 -0.91 -0.61 0.90 0.86 0.88 -0.71 0.85 0.93 -0.92 -0.87 -0.86 0.92
SP.POP.TOTL.FE.ZS 0.92 0.83 -0.98 0.91 1.00 0.75 0.76 -0.66 -0.96 -0.68 0.94 0.94 0.94 -0.82 0.90 0.99 -0.97 -0.93 -0.94 0.97
TX.VAL.MANF.ZS.UN_USA 0.86 0.78 -0.75 0.76 0.75 1.00 0.78 -0.71 -0.86 -0.72 0.78 0.82 0.72 -0.74 0.85 0.78 -0.79 -0.69 -0.87 0.78
SL.EMP.TOTL.SP.MA.NE.ZS 0.80 0.72 -0.75 0.83 0.76 0.78 1.00 -0.66 -0.80 -0.65 0.80 0.80 0.77 -0.59 0.82 0.82 -0.83 -0.78 -0.74 0.83
IT.NET.SECR -0.71 -0.67 0.66 -0.67 -0.66 -0.71 -0.66 1.00 0.71 0.50 -0.78 -0.66 -0.67 0.64 -0.71 -0.71 0.71 0.66 0.67 -0.71
SG.GEN.PARL.ZS -0.96 -0.86 0.97 -0.91 -0.96 -0.86 -0.80 0.71 1.00 0.74 -0.94 -0.95 -0.92 0.85 -0.94 -0.96 0.96 0.91 0.97 -0.96
VC.IDP.NWDS -0.68 -0.67 0.69 -0.61 -0.68 -0.72 -0.65 0.50 0.74 1.00 -0.67 -0.75 -0.67 0.58 -0.73 -0.69 0.73 0.68 0.75 -0.70
TX.VAL.MRCH.HI.ZS 0.86 0.82 -0.94 0.90 0.94 0.78 0.80 -0.78 -0.94 -0.67 1.00 0.93 0.91 -0.78 0.89 0.96 -0.96 -0.90 -0.88 0.96
TM.VAL.MRCH.HI.ZS 0.90 0.87 -0.94 0.86 0.94 0.82 0.80 -0.66 -0.95 -0.75 0.93 1.00 0.91 -0.79 0.95 0.95 -0.96 -0.90 -0.90 0.95
EG.ELC.HYRO.ZS 0.87 0.87 -0.94 0.88 0.94 0.72 0.77 -0.67 -0.92 -0.67 0.91 0.91 1.00 -0.70 0.87 0.95 -0.94 -0.94 -0.86 0.95
FB.CBK.BRWR.P3 -0.84 -0.68 0.83 -0.71 -0.82 -0.74 -0.59 0.64 0.85 0.58 -0.78 -0.79 -0.70 1.00 -0.78 -0.81 0.80 0.75 0.87 -0.81
TX.VAL.MANF.ZS.UN_Brazil 0.89 0.85 -0.90 0.85 0.90 0.85 0.82 -0.71 -0.94 -0.73 0.89 0.95 0.87 -0.78 1.00 0.91 -0.93 -0.86 -0.90 0.92
SP.POP.DPND 0.91 0.86 -0.98 0.93 0.99 0.78 0.82 -0.71 -0.96 -0.69 0.96 0.95 0.95 -0.81 0.91 1.00 -0.98 -0.94 -0.93 0.98
SP.POP.4549.FE.5Y -0.91 -0.87 0.97 -0.92 -0.97 -0.79 -0.83 0.71 0.96 0.73 -0.96 -0.96 -0.94 0.80 -0.93 -0.98 1.00 0.92 0.92 -0.99
TX.VAL.OTHR.ZS.WT -0.84 -0.80 0.91 -0.87 -0.93 -0.69 -0.78 0.66 0.91 0.68 -0.90 -0.90 -0.94 0.75 -0.86 -0.94 0.92 1.00 0.87 -0.93
SE.PRM.CUAT.FE.ZS -0.93 -0.82 0.93 -0.86 -0.94 -0.87 -0.74 0.67 0.97 0.75 -0.88 -0.90 -0.86 0.87 -0.90 -0.93 0.92 0.87 1.00 -0.92
SP.DYN.TFRT.IN 0.91 0.87 -0.98 0.92 0.97 0.78 0.83 -0.71 -0.96 -0.70 0.96 0.95 0.95 -0.81 0.92 0.98 -0.99 -0.93 -0.92 1.00
SP.POP.0509.MA.5Y
SP.POP.GROW
BM.TRF.PWKR.CD.DT
GHG.N2O.IP.MT.CE.AR5
SP.POP.TOTL.FE.ZS
X.VAL.MANF.ZS.UN_USA
EMP.TOTL.SP.MA.NE.ZS
IT.NET.SECR
SG.GEN.PARL.ZS
VC.IDP.NWDS
TX.VAL.MRCH.HI.ZS
TM.VAL.MRCH.HI.ZS
EG.ELC.HYRO.ZS
FB.CBK.BRWR.P3
VAL.MANF.ZS.UN_Brazil
SP.POP.DPND
SP.POP.4549.FE.5Y
TX.VAL.OTHR.ZS.WT
SE.PRM.CUAT.FE.ZS
SP.DYN.TFRT.IN
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75

ANLYSIS

Associated Codes	Factors Names	Value	Country
TX.VAL.MANF.ZS.UN **TX.VAL.MRCH.HI.ZS**	Manufactures exports (% of merchandise exports) Merchandise exports to high-income economies (% of total merchandise exports)	0.90	Cross Country
SE.PRM.CUAT.FE.ZS **SP.POP.TOTL.FE.ZS**	Educational attainment, at least completed primary, population 25+ years, female (%) Population, female (% of total population)	0.86	Cross Country
EG.ELC.HYRO.ZS **TX.VAL.MRCH.HI.ZS**	Electricity production from hydroelectric sources (% of total) Merchandise imports from high-income economies (% of total)	0.85	Brazil

ANALYSIS


Highest GDP Changes for USA and Brazil
1e12
United States GDP Change
Brazil GDP Change
2021: 2271081000000.00 USD
(12.96%)
2010: 5418413065327.77 USD
(46.44%)
GDP Change (USD)
2.0
1.5
1.0
0.5
0.0
−0.5
1960
1970
1980
1990
2000
2010
2020
Year

CONCLUSION

- This study reveals that in the USA's diversified economy where human capital plays a vital role, to bridge the gap, Brazil should prioritize enhancing the educational sector and adopting innovation-driven approaches rather than depending on external factors. For instance, ensuring stable internet service nationwide. Additionally, Brazil should focus on hydroelectric energy production relates to economic imports

Thank
You