World Development Indicators: 3 Economic Indicators' impact on GDP Growth for BRIC Nations

Lucas Daniel Zarzeczny

No need to request edit permission. Make a copy and edit the copy. To make a copy for your presentation, use "File->Download".

Dataset(s)

Which dataset did you use of the following:

- World Development Indicators Dataset
    - Economic Indicators
        - An increase in Population growth (annual %) // SP.POP.GROW
        - An increase in Exports of goods and services (annual % growth) // NE.EXP.GNFS.KD.ZG
        - An increase in Services, etc., value added (annual % growth) // NV.SRV.TETC.KD.ZG
    - BRIC Nations
        - Brazil, Russian Federation, India, and China

Motivation

Hypothesis: The following economic indicators have been a significant contributor to the growth of GDP(%) in BRIC Nations (Brazil, Russia, India, and China). In other words, these indicators will have a strong positive R^2 or correlation with % GDP Growth (close to 1). The analysis will disprove or approve this hypothesis.

Problem/Question: What are some of the economic indicators that actually contributed to the growth of BRIC Nations since 1961-2015. I chose 3 very common economic metrics to measure its corresponding RSI with the growth of GDP for each nation.

Audience: Economic Advisors/CNBC Reports/Bloomberg Reports. BRIC nations have been a major theme over the recent years. Due to their strong growth, firms such as Blackrock have actually created Index ETFs specifically to track the performance of BRIC nations. These audiences can use such information to educate the population and investment firms on what economic indicators are affecting the growth of GDP and which ones are not. Again, a growth in GDP is highly correlated to stock price increases, thus ETF prices.
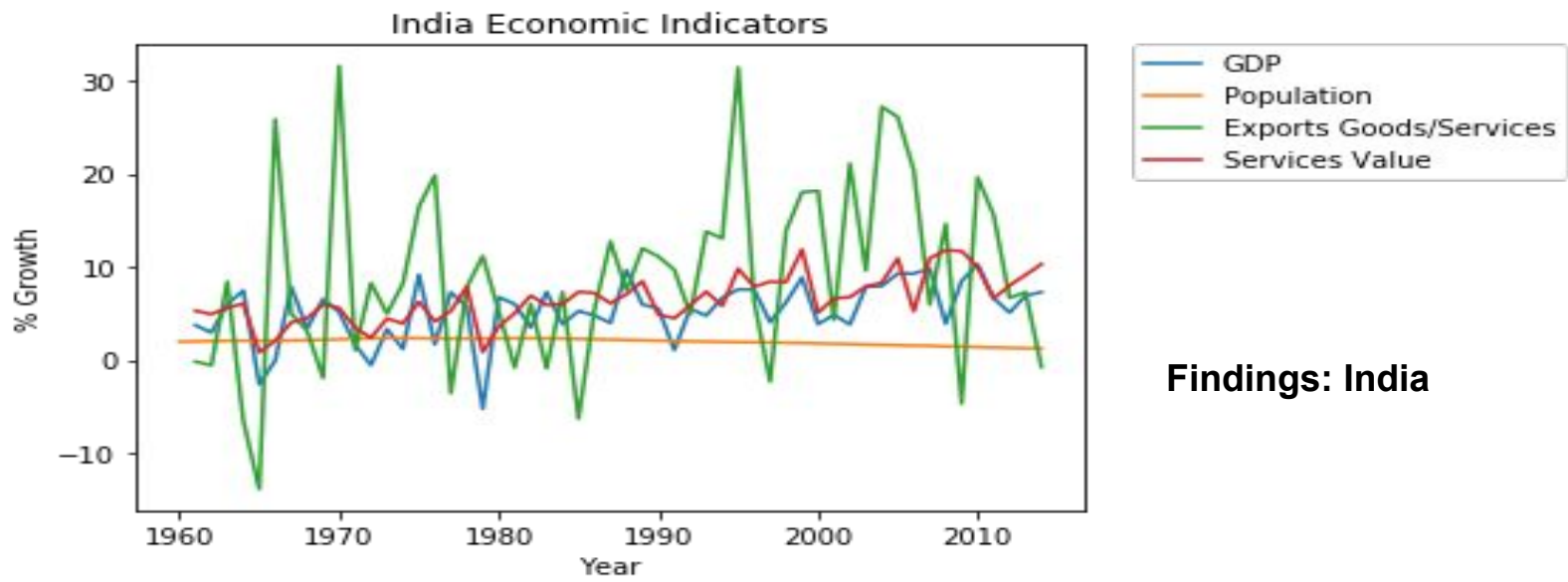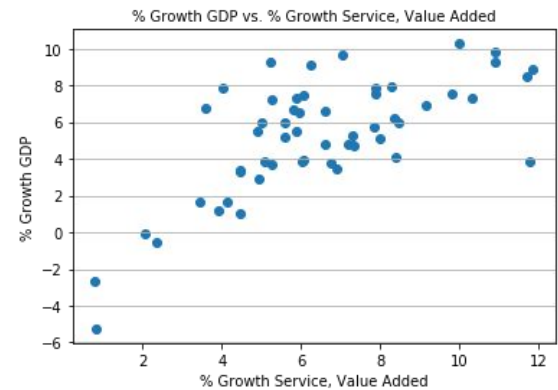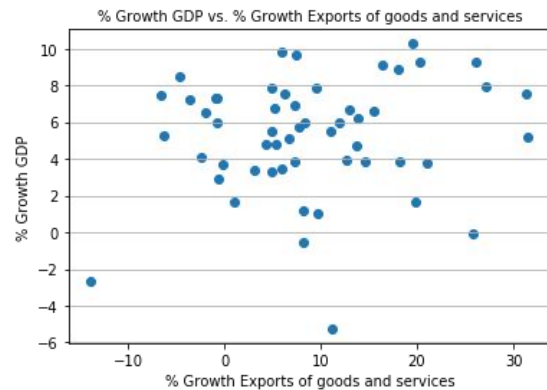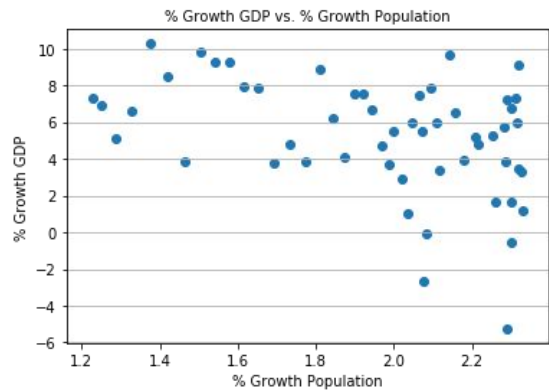
Research Question(s)

Hypothesis: The following economic indicators have been a significant contributor to the growth of GDP(%) in BRIC Nations (Brazil, Russia, India, and China). In other words, these indicators will have a strong positive R^2 or correlation with % GDP Growth (close to 1). The analysis will disprove or approve this hypothesis.

Hypothesis 1: An increase in Population growth (annual %) // SP.POP.GROW has a positive and strong correlation with GDP growth of that nation.
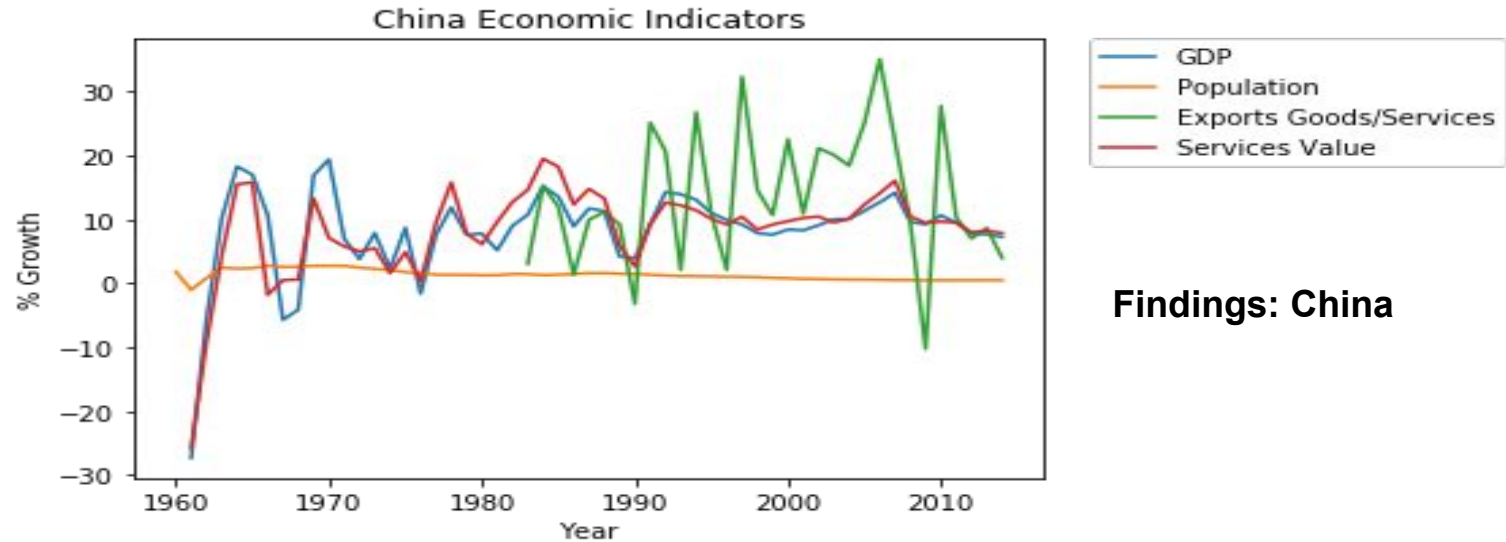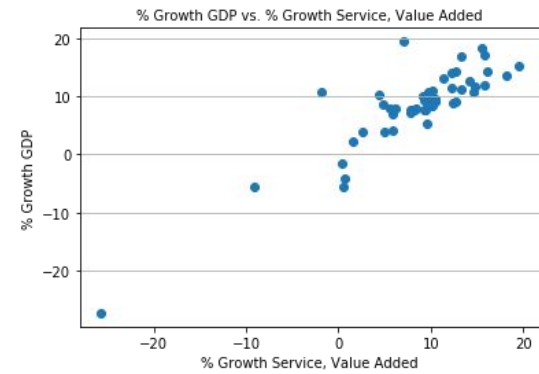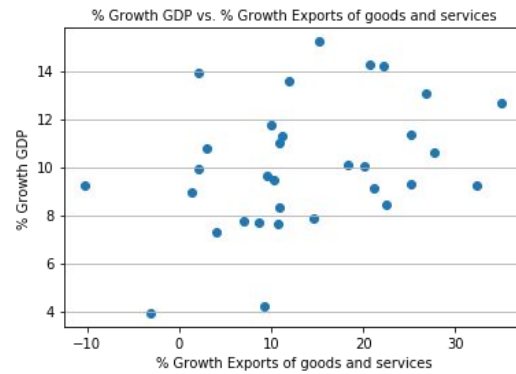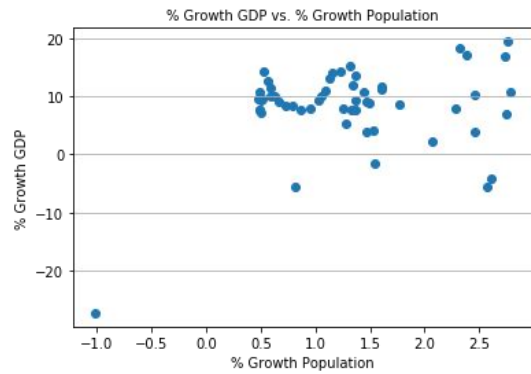
Hypothesis 2: An increase in Exports of goods and services (annual % growth) // NE.EXP.GNFS.KD.ZG has a positive and strong correlation with GDP growth of that nation.

Hypothesis 3:: An increase in Services, etc., value added (annual % growth) // NV.SRV.TETC.KD.ZG has a positive and strong correlation with GDP growth of that nation.

 (see project description for details).

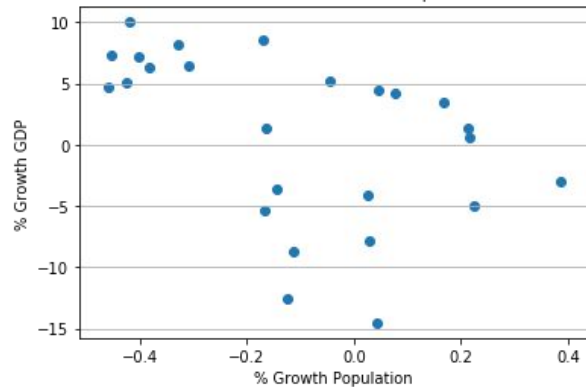% Growth GDP vs. % Growth Population

% Growth GDP vs. % Growth Exports of goods and services

% Growth GDP vs. % Growth Service, Value Added

India Economic Indicators

- GDP
- Population
- Exports Goods/Services
- Services Value

Findings: India

% Growth GDP vs. % Growth Population

% Growth GDP vs. % Growth Exports of goods and services

% Growth GDP vs. % Growth Service, Value Added

China Economic Indicators

Findings: China

% Growth GDP vs. % Growth Population

% Growth GDP vs. % Growth Exports of goods and services

% Growth GDP vs. % Growth Service, Value Added
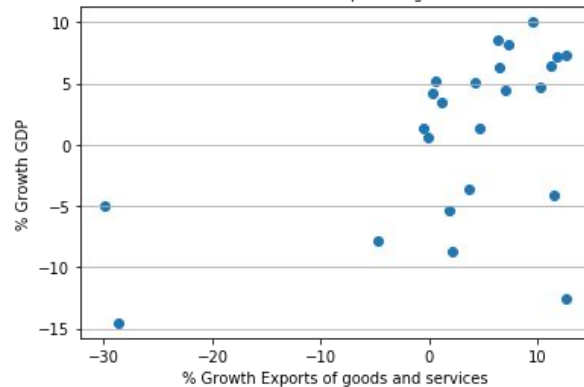
Russia Economic Indicators

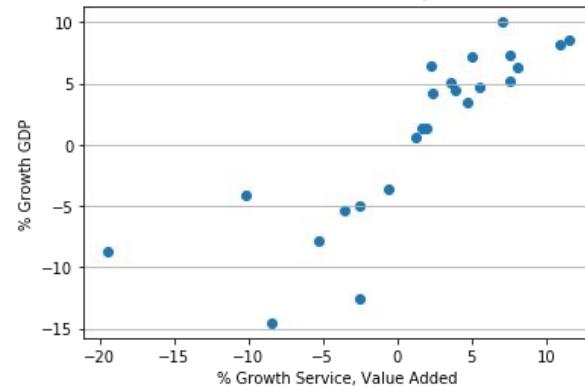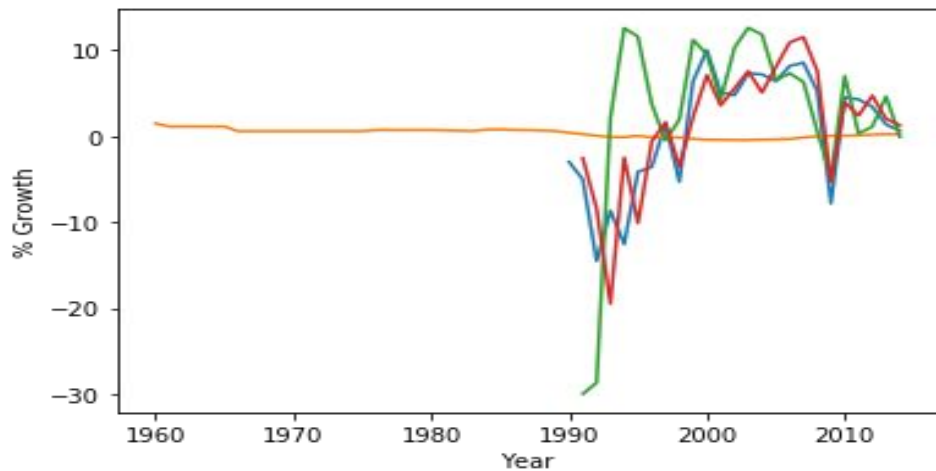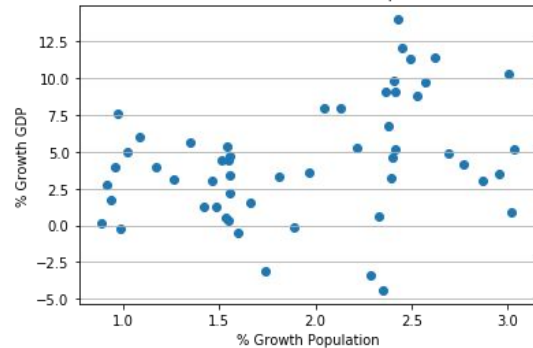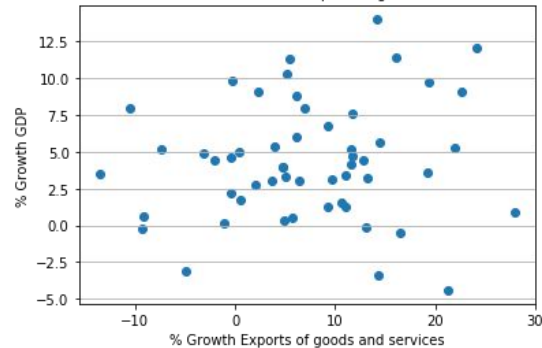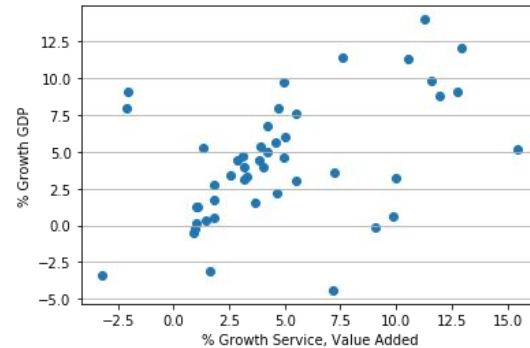**Findings: Russia**

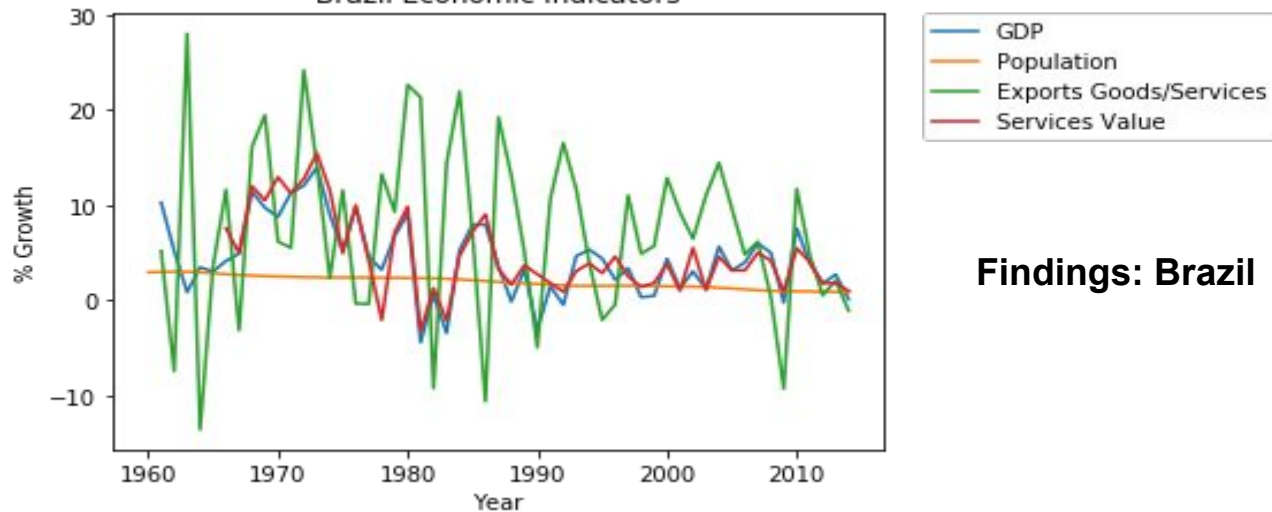% Growth GDP vs. % Growth Population

% Growth GDP vs. % Growth Exports of goods and services

% Growth GDP vs. % Growth Service, Value Added

Brazil Economic Indicators

Findings: Brazil

Conclusions:

India Hypothesis: The following economic indicators have been a significant contributor to the growth of GDP(%) in BRIC Nation India between 1961 and 2015.

- An increase in Population growth (annual %) **With an RSI of -.41, this negates the hypothesis. In fact, an increase in population is has a slightly inverse effect on the growth of GDP.**
- An increase in Exports of goods and services (annual % growth) **With an RSI of +.14, this negates the hypothesis. This economic indicator has a very weak correlation with GDP growth.**
- An increase in Services, etc., value added (annual % growth) **With an RSI of +.69, this confirms the hypothesis. This has a strong RSI and confirms that the growth of Services has a direct positive effect on the growth of GDP.**

China Hypothesis: The following economic indicators have been a significant contributor to the growth of GDP(%) in BRIC Nation China between 1961 and 2015.

- An increase in Population growth (annual %) **With an RSI of +.25, this neither confirms nor negates the hypothesis. This indicator has a weak positive correlation to the growth of GDP.
- An increase in Exports of goods and services (annual % growth) **With an RSI of +.35, this slightly confirms the hypothesis. This economic indicator has a moderate positive correlation with GDP growth.**
- An increase in Services, etc., value added (annual % growth) **With an RSI of +.88, this confirms the hypothesis. This has a strong RSI and confirms that the growth of Services has a direct positive effect on the growth of GDP.**

References: None

Conclusion:

Russia Hypothesis: The following economic indicators have been a significant contributor to the growth of GDP(%) in BRIC Nation Russia between 1990 and 2015.

- An increase in Population growth (annual %) **With an RSI of -.47, this negates the hypothesis. In fact, an increase in population is has a slightly inverse effect on the growth of GDP.**
- An increase in Exports of goods and services (annual % growth) **With an RSI of -.51, this negates the hypothesis. This economic indicator has a strong weak correlation with GDP growth - the inverse of the hypothesis.**
- An increase in Services, etc., value added (annual % growth) **With an RSI of +.83, this confirms the hypothesis. This has a strong RSI and confirms that the growth of Services has a direct positive effect on the growth of GDP.**

Brazil Hypothesis: The following economic indicators have been a significant contributor to the growth of GDP(%) in BRIC Nation Brazil between 1961 and 2015.

- An increase in Population growth (annual %) **With an RSI of .344, this slightly confirms the hypothesis. The growth of the population has had a minor and positive effect on the growth of GDP.
- An increase in Exports of goods and services (annual % growth) **With an RSI of +.12, this negates the hypothesis. This economic indicator has a very weak correlation with GDP growth.**
- An increase in Services, etc., value added (annual % growth) **With an RSI of +.47, this confirms the hypothesis. This has a moderate RSI and confirms that the growth of Services has a direct positive effect on the growth of GDP, but it is important to note this is down from correlations strengths in the +.80 range for Russia, India, and China.**

Summary: An increase in Population Growth, an increase in Exports of Goods and Services Growth, do not have an impact on the growth of GDP for BRIC Nations. An increase in Services, Value Added Growth definitely has a strong and positive impact on the growth of GDP for BRIC Nations.