State Violence and Socioeconomic Indicators: Argentina and Turkey

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Hypothesis

The study aims to investigate the relationship between state violence and various socioeconomic indicators in Turkey and Argentina. Understanding these dynamics is crucial for policymakers, businesses, and international organizations to navigate the complex interplay between political stability, human rights conditions, and economic performance.

Hypotheses

The initial hypotheses were:

1. **Hypothesis 1:** We hypothesize that there is a negative correlation between the Human Rights Index (HRI) score and stock market efficency, specifically the BIST30 Index in Turkey and the Merval Index in Argentina. Additionally, we hypothesize a negative correlation between the HRI score and the level of political violence in both Turkey and Argentina.

2. **Hypothesis 2:** During the peaks of state violence in a country, the Foreign Direct Investment (FDI) decreases along with an increase in stock market fluctuations. This hypothesis is based on the premise that state violence negatively impacts investor confidence and market stability, leading to reduced FDI and increased volatility in financial markets.

Objectives

To test these hypotheses, the study focuses on four specific relationships:

1. The relationship between **FDI** and **state violence.**

2. The relationship between the **Human Rights Index (HRI)** and **FDI.**

3. The relationship between the **Human Rights Index** and **stock market performance.**

4. The relationship between the **Human Rights Index** and **state violence.**

By examining these relationships in Turkey and Argentina, the study aims to provide insights into how state violence and human rights conditions affect economic indicators in different political and economic contexts. Utilizing these relationships and putting them together provides insights to compare the two developing economies' relationships with state violence in socioeconomic terms in comparison to each other

Data Collection

Data Sources and Methods

1. **Human Rights Index (HRI) Data:**

   ○ **Source:** The Human Rights Index data was obtained from the [Our World in Data](#) database.

   ○ **Time Frame:** The data covers the period from 2000 to 2020.

   ○ **Method:** The data was directly downloaded

2. **Foreign Direct Investment (FDI) Data:**

   ○ **Source:** The FDI data was obtained from the **[OECD Stat](#)** database.

   ○ **Time Frame:** The data covers the period from 2000 to 2020.

- **Method:** The data was directly downloaded from the World Bank's online database, which provides detailed annual records for various countries.

3. **Stock Market Historical Data:**
   - **Source:** The stock market data was sourced from Yahoo Finance. The data includes historical values of major stock market indices: BIST 30 for Turkey and Merval Index for Argentina.
   - **Time Frame:** The data covers the period from 2000 to 2020.
   - **Method:** Python's "yfinance" library was used to download historical data for the specified indices. This involved fetching adjusted close prices on a monthly basis and aggregating them into yearly data for analysis.

4. **Political Violence Data:**
   - **Initial Plan:** Initially, the plan was to use state violence data from the Uppsala Conflict Data Program (UCDP). However, due to limitations in the available data, it was necessary to switch to a different source.
   - **Source:** The Armed Conflict Location & Event Data Project (ACLED) was used as an alternative source.
   - **Time Frame:** The data is available for the period from 2016 to 2020.
   - **Method:** Data was collected using the ACLED API, which allows for programmatic access to the database via an e-mail request API.

Data Preparation

After collecting the data from the respective sources, several steps were taken to prepare it for analysis:

1. **Standardization:** Country names and other identifiers were standardized to ensure consistency across different datasets.

2. **Filtering:** The data was filtered to include only the relevant years and indicators.

3. **Aggregation:** Monthly stock market data was aggregated into yearly averages to align with the annual data for FDI and HRI.

4. **Merging:** The datasets were merged based on common identifiers (such as year and country) to create comprehensive data frames for analysis.

The data collection process involved sourcing data from multiple reputable databases and required adjustments to the initial plan, particularly for political violence data. The switch to ACLED data allowed for a more detailed and recent examination of political violence, ensuring the study could proceed with robust and relevant data.

Data Analysis

The data analysis phase involved examining the relationships between political violence, human rights conditions, and economic indicators such as FDI and stock market performance. The analysis are done with statistical methods including correlation analysis and linear regression to identify patterns and draw insights.

Analysis Methods

1. **FDI and State Violence:**
   - **Turkey:**

- **Correlation Analysis:** The Pearson correlation coefficient was calculated to determine the strength and direction of the relationship between FDI (% of GDP) and political violence.
- **Linear Regression:** A linear regression model was fitted to quantify the relationship between FDI and political violence, with FDI as the dependent variable and political violence as the independent variable.
  - **Argentina:**
    - **Correlation Analysis:** Similar methods were applied to the data for Argentina.
    - **Linear Regression:** A linear regression model was used to analyze the relationship between FDI and political violence.

Human Rights Index and FDI:

- **Turkey:**
  - **Correlation Analysis:** The Pearson correlation coefficient was calculated to examine the relationship between the Human Rights Index and FDI.
  - **Linear Regression:** A regression model was fitted to assess the impact of human rights conditions on FDI.
- **Argentina:**
  - **Correlation Analysis:** The same methods were applied to Argentina's data.
  - **Linear Regression:** The regression model was used to analyze the relationship between the Human Rights Index and FDI.

Human Rights Index and Stock Market:

- **Turkey:**
  - **Correlation Analysis:** The relationship between the Human Rights Index and BIST30 was examined using the Pearson correlation coefficient.
  - **Linear Regression:** A regression model was used to assess the impact of human rights conditions on stock market performance.

- **Argentina:**
  - **Correlation Analysis:** Similar methods were applied to the Merval Index data for Argentina.
  - **Linear Regression:** The regression model was used to analyze the relationship between the Human Rights Index and stock market performance.

Human Rights Index and State Violence:

- **Turkey:**
  - **Correlation Analysis:** The Pearson correlation coefficient was calculated to examine the relationship between the Human Rights Index and political violence.
  - **Linear Regression:** A regression model was used to assess the impact of human rights conditions on political violence.

- **Argentina:**
  - **Correlation Analysis:** The same methods were applied to Argentina's data.
  - **Linear Regression:** The regression model was used to analyze the relationship between the Human Rights Index and political violence.

Outputs

FDI and State Violence (Political Violence)

1. **Turkey:**

    ○ **Correlation Coefficient:** 0.6804

    ○ **Correlation Plot:**
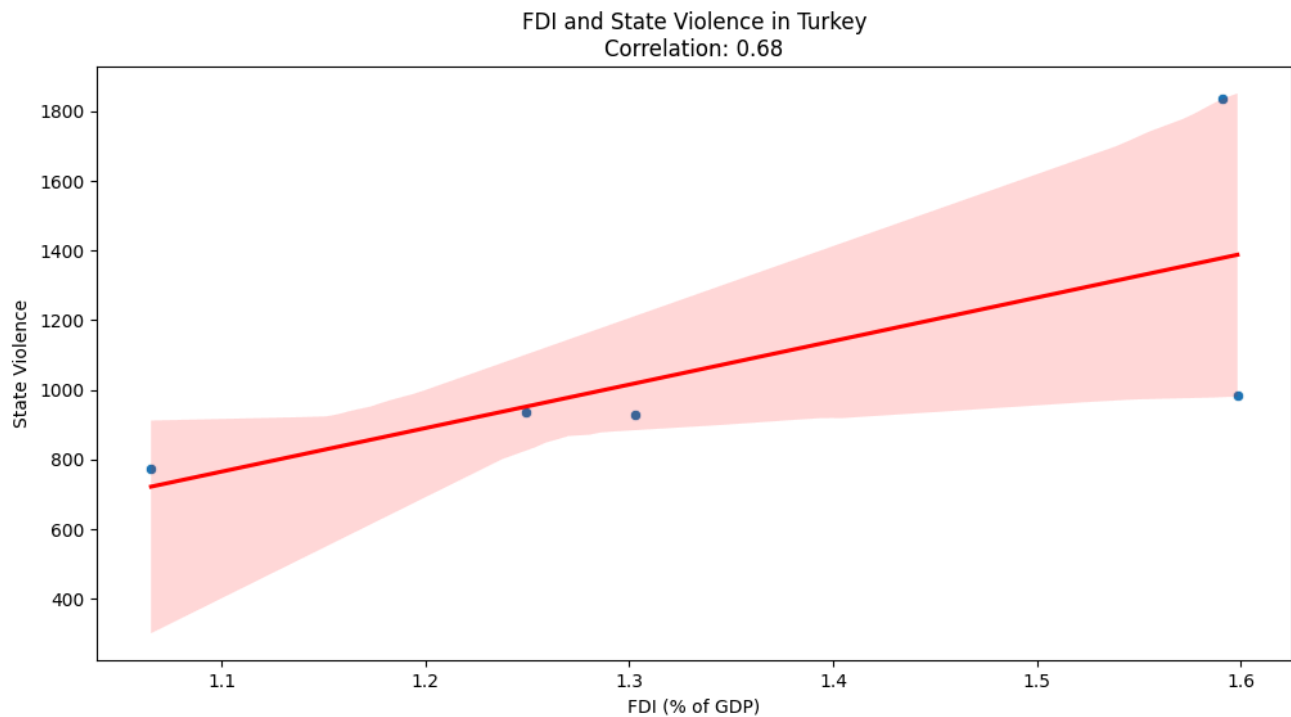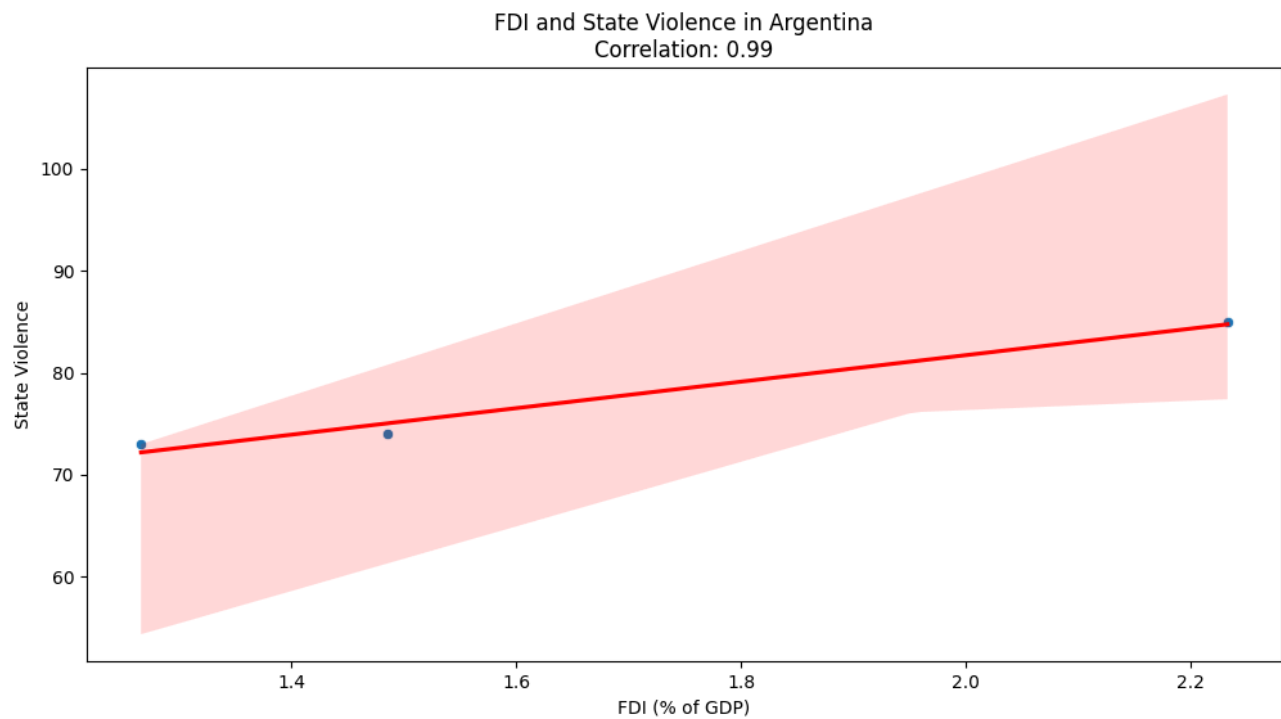

    ○ **Regression Model Summary:**

        ■ R-squared: 0.463

        ■ Adjusted R-squared: 0.284

        ■ F-statistic: 2.587

        ■ Prob (F-statistic): 0.206

    ○

2. **Argentina:**

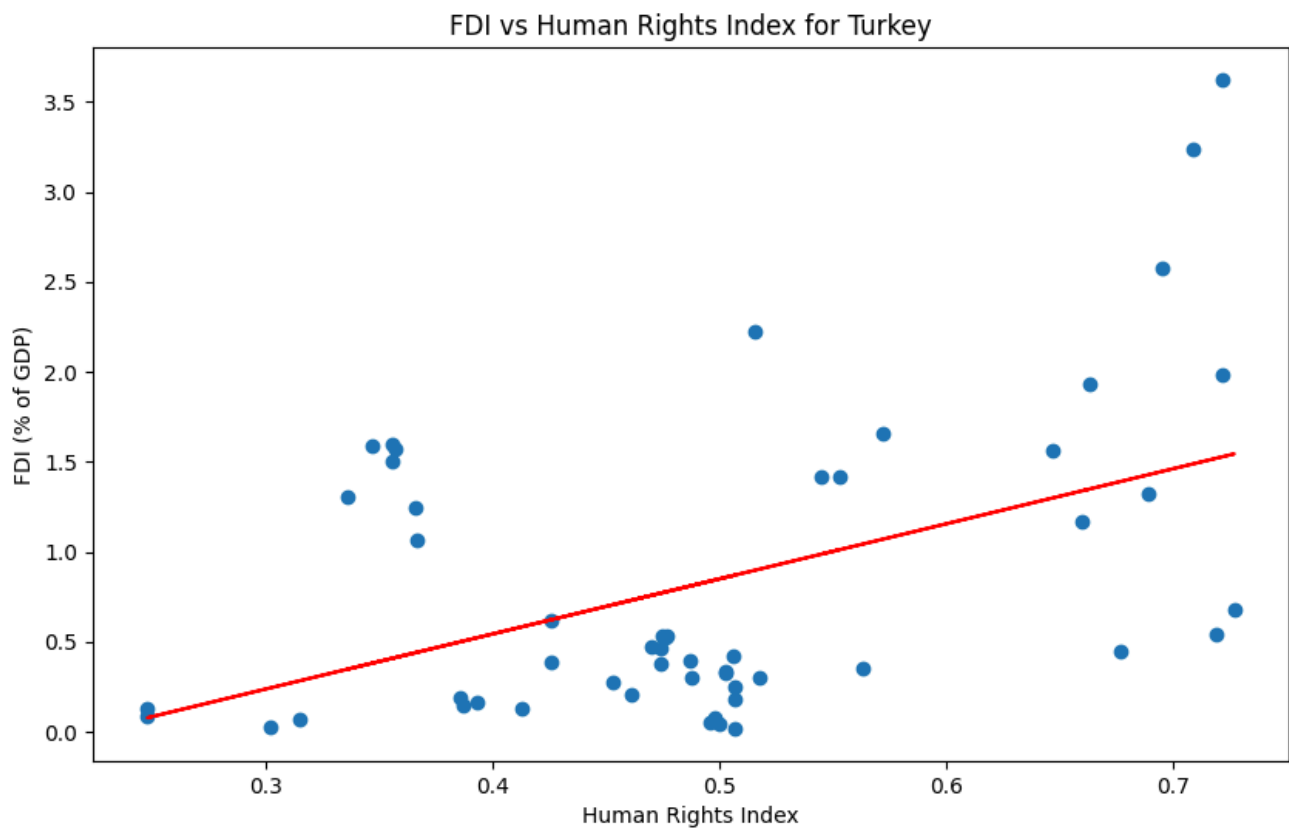- ○ **Correlation Coefficient:** 0.9899

- ○ **Correlation Plot:**

FDI and State Violence in Argentina
Correlation: 0.99

- ○ **Regression Model Summary:**

    - ■ R-squared: 0.980

    - ■ Adjusted R-squared: 0.960

    - ■ F-statistic: 48.59

    - ■ Prob (F-statistic): 0.0907

- ○

Human Rights Index and FDI

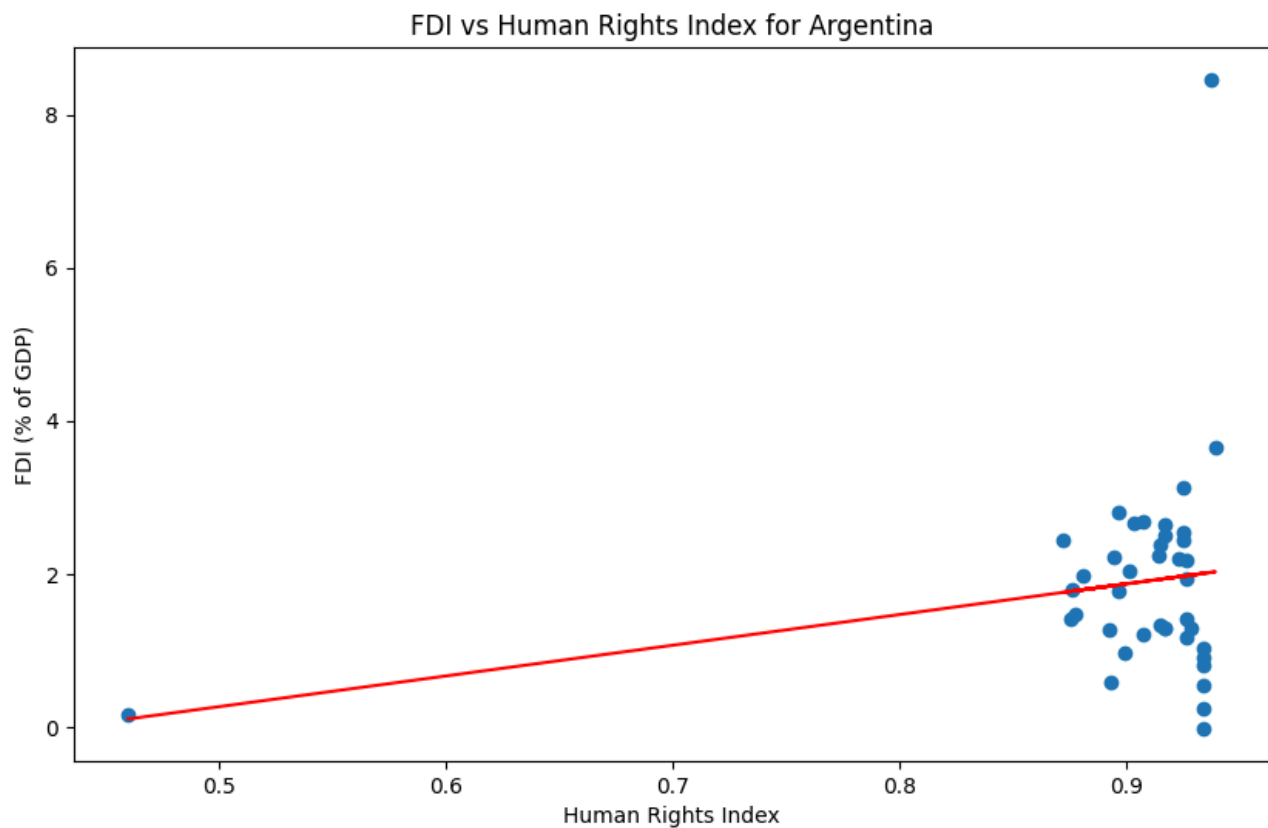1. **Turkey:**

   ○ **Correlation Coefficient:** 0.4637

   ○ **Regression Model Summary:**

      ■ R-squared: 0.215

      ■ Adjusted R-squared: 0.200

      ■ F-statistic: 13.97

      ■ Prob (F-statistic): 0.000471

   ○ **Scatter Plot:**

FDI vs Human Rights Index for Turkey
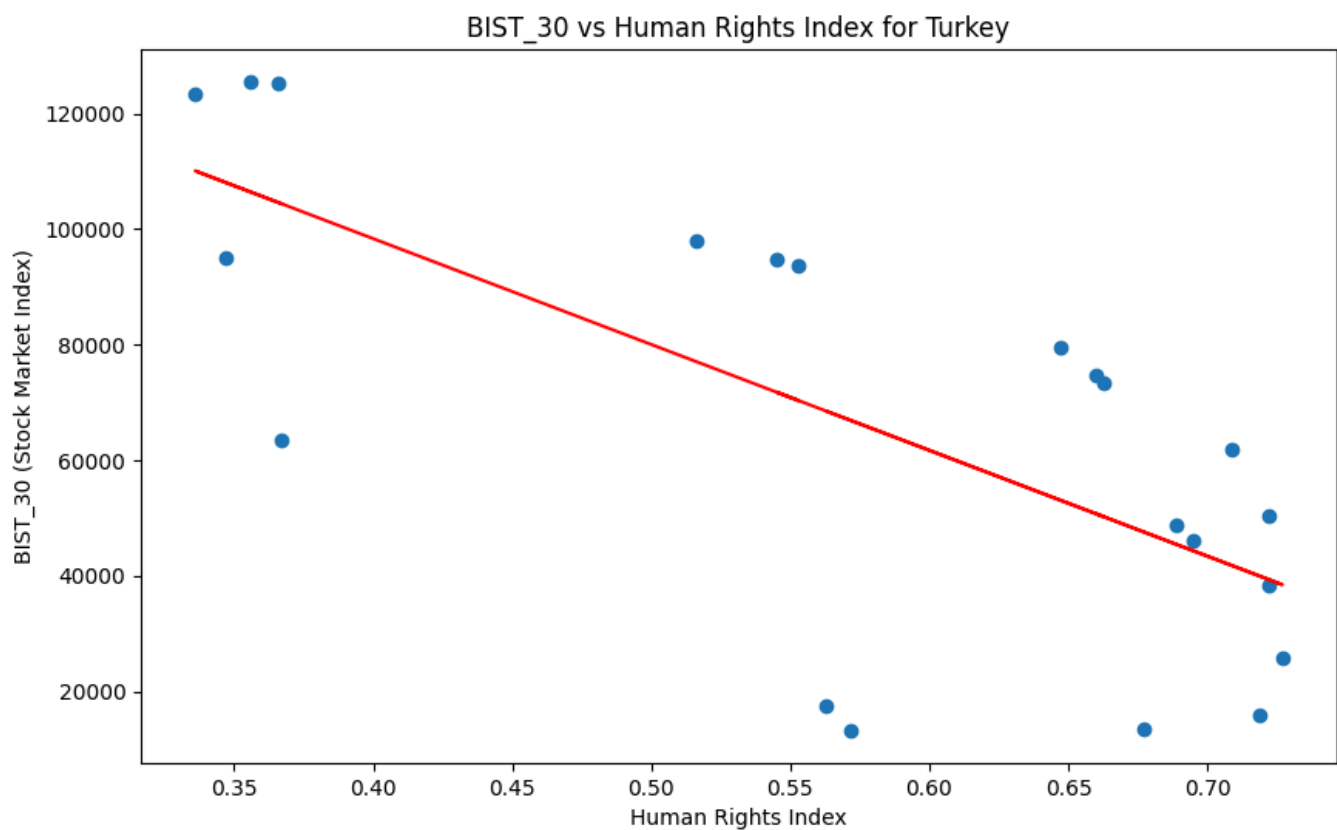
2. **Argentina:**

   - **Correlation Coefficient:** 0.2181

   - **Regression Model Summary:**

     - R-squared: 0.048

     - Adjusted R-squared: 0.022

     - F-statistic: 1.897

     - Prob (F-statistic): 0.176

   - **Scatter Plot:**

FDI vs Human Rights Index for Argentina

Human Rights Index and Stock Market
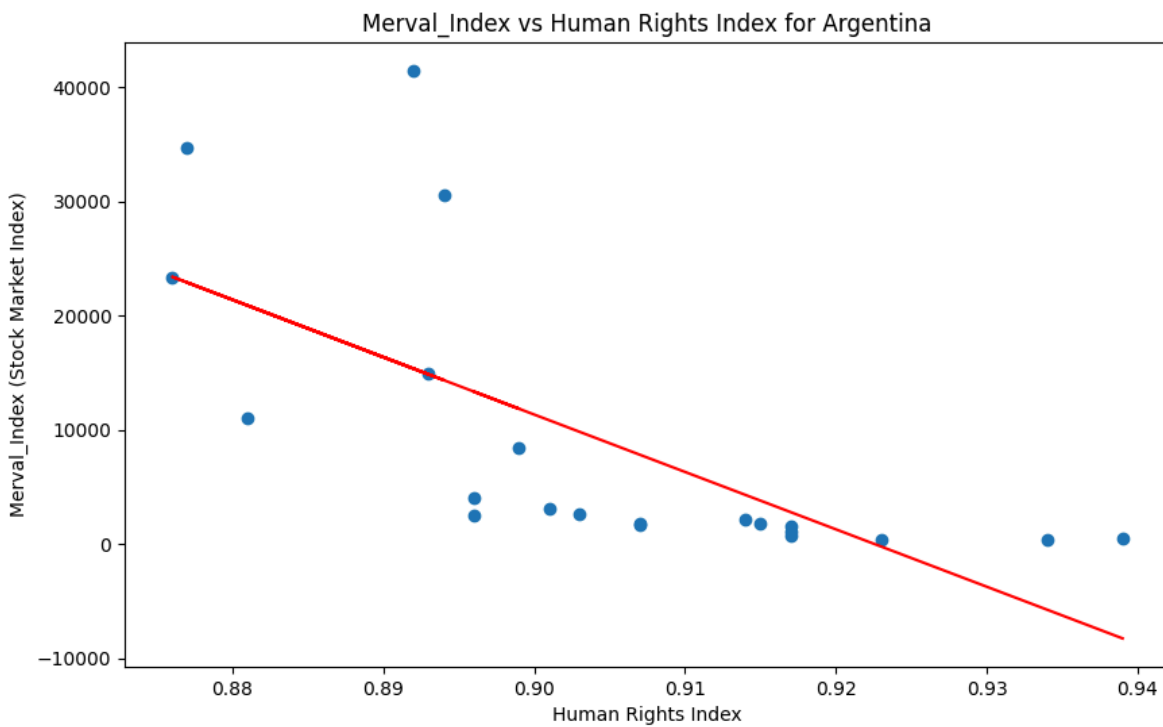
1. **Turkey:**

   o **Correlation Coefficient:** -0.7037

   o **Regression Model Summary:**

     ■ R-squared: 0.495

     ■ Adjusted R-squared: 0.469

     ■ F-statistic: 18.64

     ■ Prob (F-statistic): 0.000371

   o **Scatter Plot:**

2. **Argentina:**

- ○ **Correlation Coefficient:** -0.6785

- ○ **Regression Model Summary:**

  - ■ R-squared: 0.460

  - ■ Adjusted R-squared: 0.432

  - ■ F-statistic: 16.21

  - ■ Prob (F-statistic): 0.000722

Scatter Plot:

Merval_Index vs Human Rights Index for Argentina

Human Rights Index and State/Political Violence
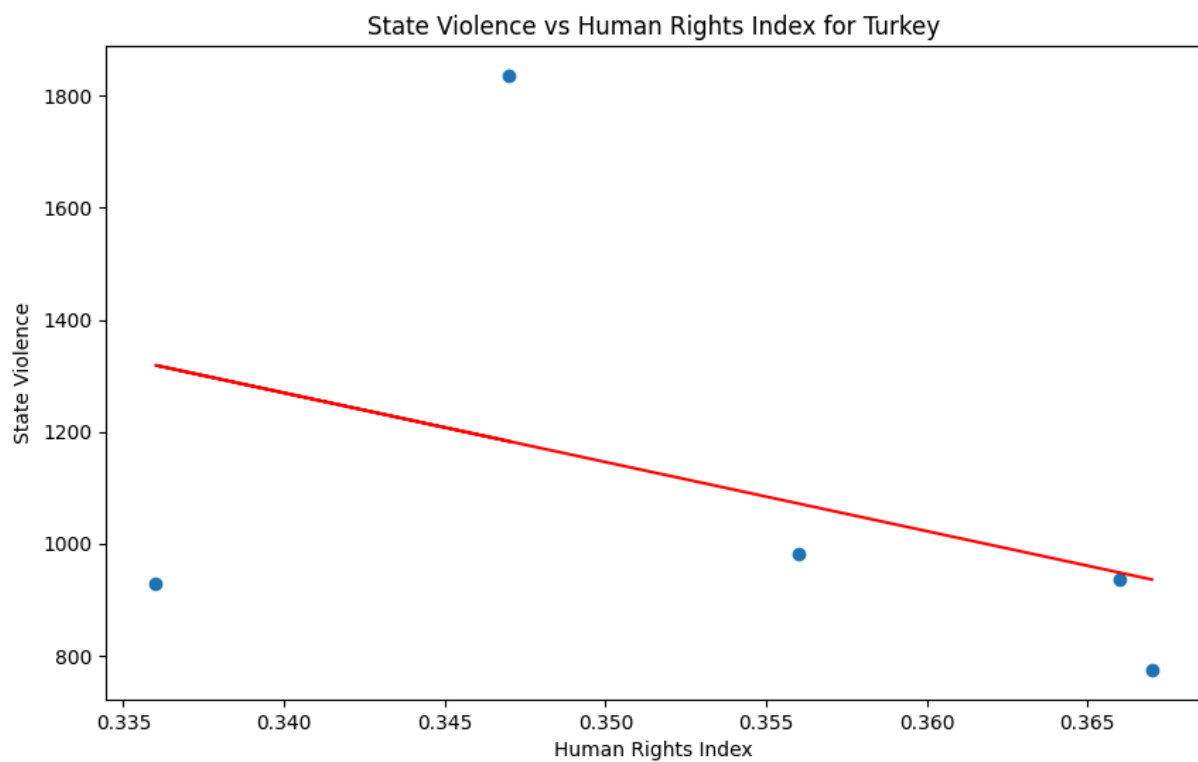
1. **Turkey:**

   - ○ **Correlation Coefficient:** -0.3827

- ○ **Regression Model Summary:**

    - ■ R-squared: 0.146

    - ■ Adjusted R-squared: -0.138

    - ■ F-statistic: 0.5146

    - ■ Prob (F-statistic): 0.525

- ○ **Scatter Plot:**

State Violence vs Human Rights Index for Turkey
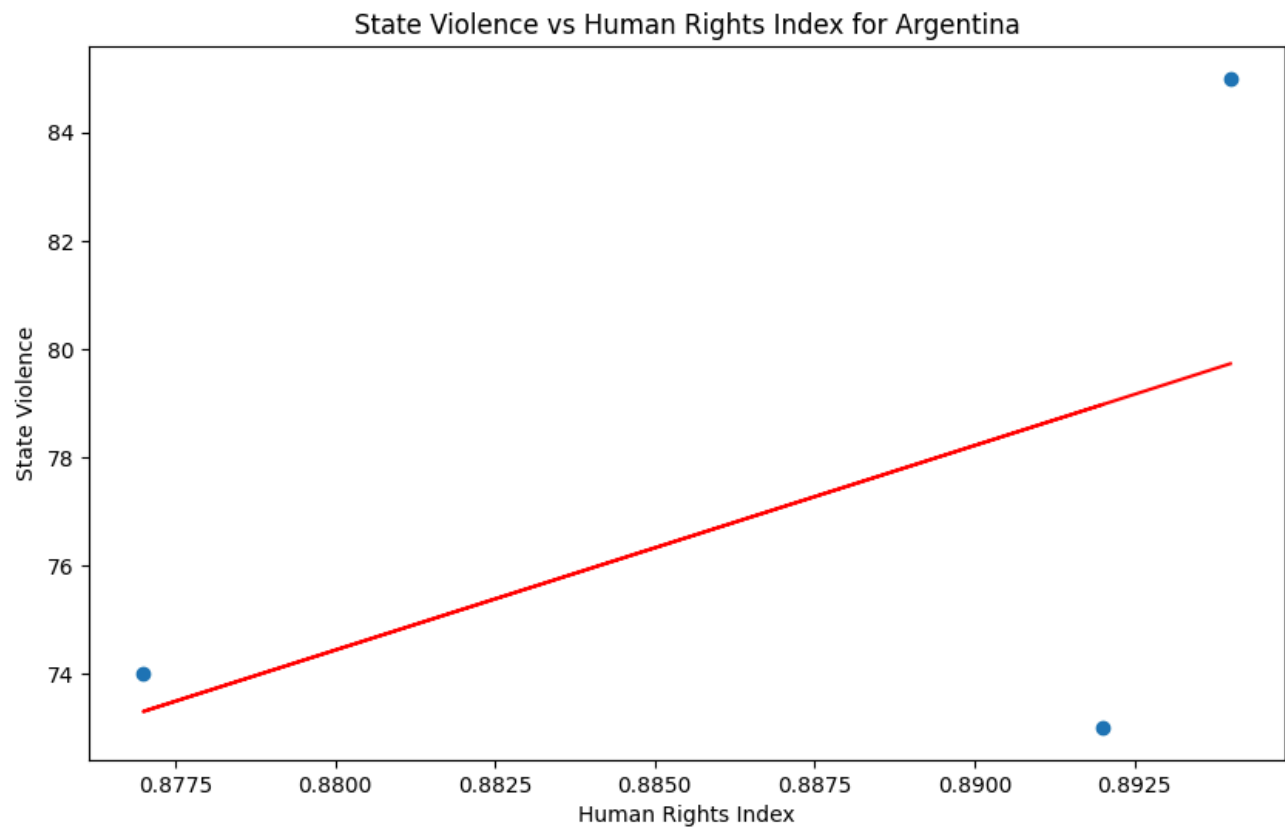
2.

- ○

3. **Argentina:**

    - ○ **Correlation Coefficient:** 0.5280

    - ○ **Regression Model Summary:**

        - ■ R-squared: 0.279

- ■ Adjusted R-squared: -0.442

- ■ F-statistic: 0.3866

- ■ Prob (F-statistic): 0.646

4. **Scatter Plot:**

State Violence vs Human Rights Index for Argentina

Interpretations

FDI and State/Political Violence

1. **Turkey:**

- ○ **Positive Correlation:** The moderate positive correlation (0.6804) suggests that as state violence increases, FDI also tends to increase. This relationship, though not very strong, indicates that investors might not be significantly deterred by state violence in Turkey.

  - ○ **Regression Analysis:** The regression model indicates that approximately 46.3% of the variability in FDI can be explained by state violence. The moderate R-squared value suggests that other factors also play a significant role in influencing FDI.

2. **Argentina:**

   - ○ **Strong Positive Correlation:** The strong positive correlation (0.9899) suggests a very close relationship between increased state violence and higher FDI. This might indicate that investors are attracted to sectors that flourish in unstable environments or that the violence is not perceived as a major risk.

   - ○ **Regression Analysis:** The high R-squared value (0.980) indicates that 98% of the variability in FDI can be explained by state violence, highlighting a very strong relationship.

Human Rights Index and FDI

1. **Turkey:**

   - ○ **Moderate Positive Correlation:** The correlation (0.4637) suggests that better human rights conditions are associated with higher FDI. However, the relationship is not very strong, indicating that other factors also influence FDI.

   - ○ **Regression Analysis:** The low R-squared value (0.215) indicates that only 21.5% of the variability in FDI can be explained by the Human Rights Index.

2. **Argentina:**

- **Weak Positive Correlation:** The weak correlation (0.2181) suggests that the relationship between human rights conditions and FDI is not very pronounced.
- **Regression Analysis:** The very low R-squared value (0.048) indicates that only 4.8% of the variability in FDI is explained by the Human Rights Index.

Human Rights Index and Stock Market

1. **Turkey:**
   - **Strong Negative Correlation:** The correlation (-0.7037) indicates that better human rights conditions are associated with lower stock market indices. This suggests that market participants might view human rights improvements as potentially disruptive.
   - **Regression Analysis:** The R-squared value (0.495) indicates that 49.5% of the variability in the stock market index is explained by the Human Rights Index.
2. **Argentina:**
   - **Strong Negative Correlation:** The correlation (-0.6785) similarly suggests that better human rights conditions are associated with lower stock market indices.
   - **Regression Analysis:** The R-squared value (0.460) indicates that 46% of the variability in the stock market index is explained by the Human Rights Index.

Human Rights Index and State Violence

1. **Turkey:**
   - **Weak Negative Correlation:** The correlation (-0.3827) suggests a weak association between better human rights conditions and lower state violence. However, this relationship is not statistically significant.

- ○ **Regression Analysis:** The low R-squared value (0.146) indicates that only 14.6% of the variability in state violence is explained by the Human Rights Index.

2. **Argentina:**
   - ○ **Moderate Positive Correlation:** The correlation (0.5280) suggests a moderate association between better human rights conditions and higher state violence. This relationship, however, is not statistically significant.
   - ○ **Regression Analysis:** The R-squared value (0.279) indicates that 27.9% of the variability in state violence is explained by the Human Rights Index.

Conclusion

While both countries show a positive relationship between FDI and state violence, the relationship is significantly stronger in Argentina. This could be due to various factors, such as different economic policies, investor confidence, or the nature of state violence in each country.

The relationship between human rights conditions and state violence differs significantly between the two countries. In Turkey, better human rights conditions are weakly associated with lower state violence, whereas in Argentina, they are moderately associated with higher state violence. This might reflect differing political dynamics, the nature of state violence, or how human rights improvements are implemented and perceived in each country.

The data analysis reveals significant differences in how state violence, human rights conditions, and economic indicators interact in Turkey and Argentina. Argentina shows stronger and more consistent

patterns, particularly the strong positive correlation between FDI and state violence. In contrast, Turkey's relationships are generally weaker and more mixed, reflecting different underlying factors and dynamics. These findings highlight the complexity and context-specific nature of these interactions.