



Background

It is well known that political polarization and economic crises are often precede coup attempts. Furthermore, a 2017 study suggested that International Monetary Fund (IMF), a global organization focused on the economic wellbeing of 190 countries, programs promote coups. However, previous research fails to investigate a causal relationship between IMF programs and political polarization, which refers to the political divide within a country, on the probability of a coup occurring and isolate the true reasons why economic support causes more unrest in a country.

Research Goal

Understand how economic indicators like Gross Domestic Product (GDP) as well as the interaction between political polarization and the presence of IMF programs, are associated with the probability of an attempted coup

Data

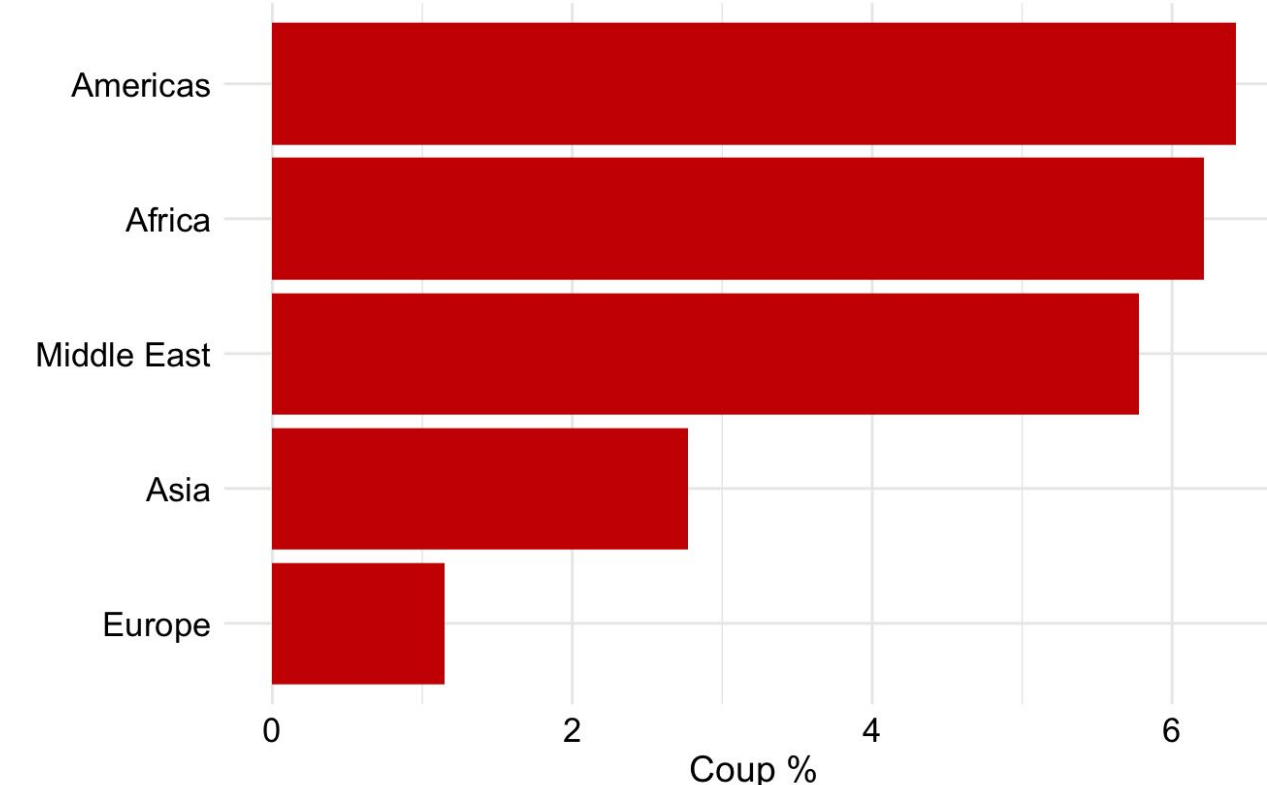
The combined dataset contains 12,261 rows of country-year observations with the following relevant variables:

Attempted Coup Political Polarization Log GDP per Capita
IMF Program Presence Geographic Region Unemployment

Inflation Balance of Payments

Coup Attempt?		
Yes = 1	No = 0	
High Censorship	4.8 %	95.2 %
Low Censorship	3.1 %	96.9 %

Risk Ratio: 1.54



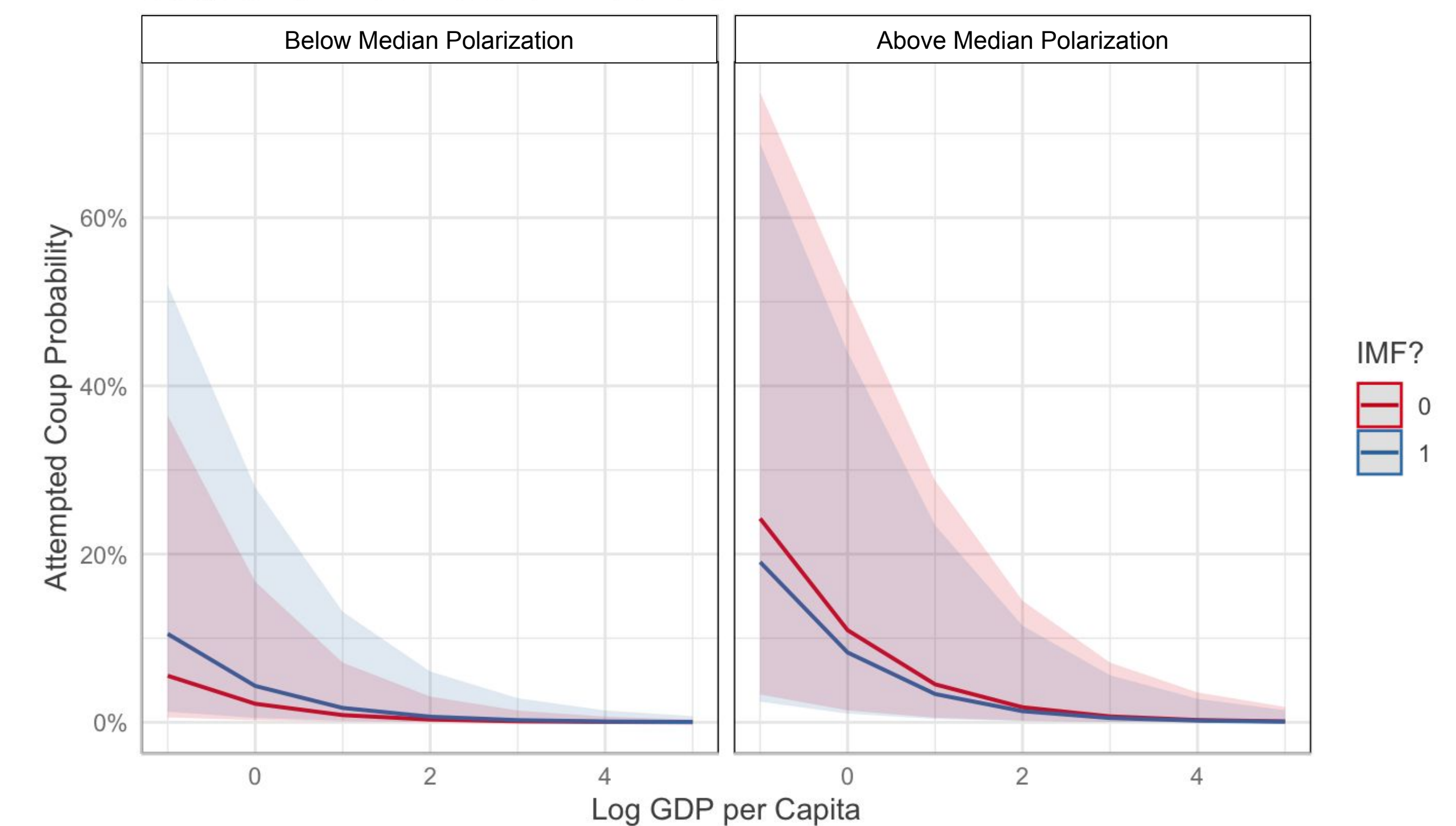
Analysis and Results

Variables	FE - Reduced	ME-Reduced	FE - Full	ME - Full
Intercept	-21.15 (3223.14)	-3.04 (0.26)***	-2.14 (705.7)	-3.37 (0.46)***
Log GDP	-1.48 (0.22)***	-0.851 (0.11)***	-1.86 (0.542)***	-0.955 (0.22)***
IMF (Y=1)	-0.055 (0.27)	0.065 (0.26)	0.478 (0.496)	0.696 (0.458)
Polarization	1.16 (0.26)***	1.04 (0.21)***	1.78 (7.55)	1.70 (0.682)*
Polarization : IMF	-0.25 (0.32)	-0.31 (0.31)	-0.896 (0.559)	-1.0 (0.502)*
Coup Last Year? (Y=1)			0.22 (0.350)	0.801 (0.37)*
Polarization Last Year (Y=1)			-0.590 (0.631)	-0.626 (0.608)
IMF Last Year? (Y=1)			-0.039 (0.310)	-0.014 (0.300)
Unemployment			-0.004 (0.007)	-0.021 (0.029)
Inflation			0.0003 (0.0005)	0.0001 (0.0002)
Region: Asia				0.41 (0.397)
Region: Europe				-0.229 (0.658)
Region: Middle East				1.05 (0.614)
Region: Americas				1.65 (0.506)
BIC	3449.9	2239.3	1880.76	873

Full Mixed Effects Model (significant predictors highlighted in red)
Allowing for intercepts to vary based on country and holding all else equal we can interpret the results from our model as:

- 10% increase in GDP per capita → 9.1% decrease in coup odds
- Polarization above median → 447% increase in coup odds
- Polarization and IMF Program → 304% increase in coup odds
- Coup in previous year → 123% increase in coup odds
- Country is in the Middle East → 286% increase in coup odds

Coup Given Polarization, IMF, and GDP



As Log GDP per Capita increases, the probability of a coup goes down, all else equal. However, more polarized countries have a higher risk to begin with.

Using chi-square tests to understand which regions have had more observed coups than expected we found that:

- Africa and Middle East significantly more observed coups than expected number of coups
- Asia and Europe significantly less observed coups than expected number of coups

Methods

Logistic Regression with Fixed and Random Effects

- The response variable is binary (was there a coup attempt or not?)
- Each coefficient in the regression represents the **log-odds** of a coup being attempted given a value for the variable
- We are working with panel data (repeated observations over time)
- Errors in a regular model would come from random noise, and our inability to measure unobservable country-specific effects
- **Fixed Effects:** Unobservables that are fixed and unknown
- **Random Effects:** Unobservable effects that have their own probability distributions
- **Lag:** We will include coup, IMF, and polarization data from the previous year as predictors
- **Polarization:** Coded as binary variable, if greater than the median value of polarization, it will be coded as 1 and 0 for all else
- We will define significance as a p-value ≤ 0.10

Conclusion

Model Evaluation

- The Full ME model has lowest Bayesian Information Criterion (BIC) (873), i.e., it is the model of best fit
- Log GDP per Capita**
 - Strong negative association
- Presence of an IMF Program**
 - Not significantly associated with coup odds by itself
- Political Polarization Above Median**
 - Significant positive association
- Interaction of Polarization Above Median and Presence of IMF Program**
 - Significant negative association
- Attempted Coup in Previous Year**
 - Significant positive association
- Region (Baseline = Africa)**
 - Being in the Middle East → positive association, higher odds of a coup compared to Africa

Future Steps

- Further investigate specific conditions within IMF programs that may exacerbate or mitigate coup risk.
- Conduct longitudinal studies to track changes in coup dynamics over time and assess the effectiveness of interventions.
- Compare coup dynamics across regions and countries with varying political systems and socio-economic contexts to identify common patterns and unique factors.

References

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[2] Casper, B. A. (2015). IMF programs and the risk of a coup d'état. Journal of Conflict Resolution, 61(5), 964–996. <https://doi.org/10.1177/0022002715600759>

[3] Chin, J., Escribà-Folch, A., Song, W., & Wright, J. (2022). Reshaping the threat environment: Personalism, coups, and assassinations. Comparative Political Studies, 55(4), 657–687. <https://doi.org/10.1177/00104140211024287>

[4] MIXED EFFECTS LOGISTIC REGRESSION | R DATA ANALYSIS EXAMPLES. OARC Stats. (n.d.). <https://stats.oarc.ucla.edu/r/dae/mixed-effects-logistic-regression/>