

## Project Proposal: Predicting Financial Collapse Using Economic and Social Indicators

**Research Question:** Can we predict the likelihood of a country experiencing financial collapse using a multilinear regression model with economic and social indicators?

### Data Collection Process:

- **Source of Data:** We will use online databases that provide country-specific and time-specific data for each variable:
  - GDP Growth Rate, Unemployment Rate, Public Debt, Interest Rates: [World Bank](#) and [IMF](#)
  - Non-Performing Loan (NPL) Ratio: [IMF Financial Soundness Indicators](#)
  - Divorce Rates: [UNECE Divorce Statistics](#)
  - Gambling and Lottery Ticket Volume: [World Lottery Association Reports](#)
  - Political Stability Score: [World Bank Worldwide Governance Indicators](#)
  - Economic Collapse Indicator (0/1): [IMF Systemic Banking Crises Database](#)

We plan to download these datasets and merge them into a single CSV with country-year as the primary key.

### Variables Involved:

- **Quantitative Predictors:** GDP growth rate, unemployment rate, public debt-to-GDP ratio, interest rates, NPL ratio, divorce rates, gambling/lottery volume.
- **Categorical Predictor:** Political stability score (ordinal scale).
- **Target Variable:** Economic collapse (binary: 0 = no collapse, 1 = collapse).

### Typical Values:

- **GDP Growth Rate:** -10% to 10%
- **Unemployment Rate:** 0% - 40%
- **Public Debt to GDP:** 10% to 200%
- **Interest Rates:** 0% to 25%
- **NPL Ratio:** 0% to 50%
- **Divorce Rate:** 1 to 5 per 1,000 people

- **Lottery/Gambling Sales:** Varies widely, typically reported as annual revenue per capita
- **Political Stability Score:** -2.5 (low stability) to 2.5 (high stability)

**Relationship to Explore:** We aim to identify which indicators are most predictive of financial collapse and whether obscure social indicators (like divorce and gambling rates) provide early warning signals when combined with traditional economic indicators.

**Why Study This Topic:** This study merges traditional economic metrics with unconventional social predictors, aiming to uncover whether social indicators (such as divorce and gambling rates) can be as predictive as or more predictive than traditional economic indicators. Additionally, this research is significant for policymaking, as it can provide valuable early warning signals for financial collapse, contributing to a crucial field of study within data analysis and economic forecasting.