On Economies that May Collapse Within the Next Ten Years: A Multidisciplinary Analysis of Systemic Vulnerabilities

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Abstract

This paper examines economies facing elevated collapse risk through 2035 by analyzing debt sustainability, demographic pressures, resource dependencies, institutional fragility, and geopolitical tensions. We develop a composite vulnerability index incorporating fiscal metrics, political stability indicators, and structural economic factors. Our analysis identifies specific warning signs including debt-to-GDP ratios exceeding 100%, declining working-age populations, heavy reliance on volatile commodity exports, and weakening governance structures. While prediction remains inherently uncertain, certain economies display multiple overlapping vulnerabilities that historically precede severe economic crises.

The paper ends with "The End"

1 Introduction

Economic collapse represents an extreme tail-risk event characterized by sharp GDP contraction, currency devaluation, institutional breakdown, and widespread social disruption. Historical examples include the Soviet Union (1991), Zimbabwe (2008), Venezuela (2013-present), and Lebanon (2019-present). While such events remain relatively rare, identifying economies with heightened vulnerability serves important analytical and policy purposes.

This paper synthesizes insights from macroeconomics, political economy, demography, and resource economics to construct a framework for assessing collapse risk. We define economic collapse operationally as a combination of: (1) cumulative GDP decline exceeding 20% over three years, (2) inflation exceeding 500% annually, (3) currency depreciation surpassing 70%, or (4) sovereign default coupled with severe institutional failure.

2 Theoretical Framework

2.1 The Debt-Institution Nexus

Public debt becomes unsustainable when:

$$r > g + \frac{PB}{D} \tag{1}$$

where r is the real interest rate, g is real GDP growth, PB is the primary balance, and D is the debt-to-GDP ratio. When $r > g$ persistently, debt dynamics become explosive unless compensated by large primary surpluses—which require strong institutions and political will.

2.2 Resource Curse and Dutch Disease

Economies heavily dependent on commodity exports face dual vulnerabilities: price volatility and institutional degradation. The Dutch Disease mechanism can be represented as:

$$RER = f(ToT, A, G) \tag{2}$$

where real exchange rate (RER) appreciation follows from improved terms of trade (ToT), reducing competitiveness in non-resource sectors (A) while government spending (G) amplifies the effect.

2.3 Demographic Transition and Fiscal Pressure

The old-age dependency ratio (OADR) creates fiscal stress:

$$OADR = \frac{P_{65+}}{P_{15-64}} \times 100 \tag{3}$$

Rising OADR strains pension and healthcare systems without corresponding growth in the tax base, particularly in middle-income countries lacking robust social safety nets.

3 Vulnerability Assessment Framework

We construct a Composite Vulnerability Index (CVI) incorporating five dimensions:

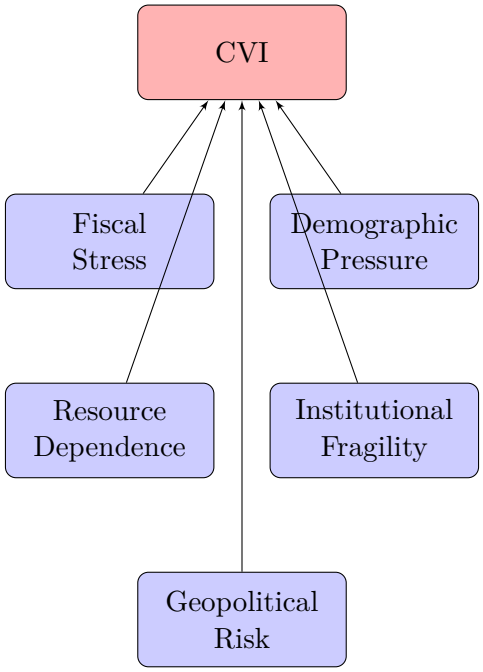

Figure 1: Composite Vulnerability Index Framework

3.1 Fiscal Stress Indicators

- Public debt-to-GDP ratio $> 100\%$
- Primary deficit $> 5\%$ of GDP
- External debt service $> 25\%$ of exports
- Foreign exchange reserves < 3 months of imports
- Credit rating below B+ with negative outlook

3.2 Demographic Pressure

- Old-age dependency ratio > 30%
- Working-age population declining > 1% annually
- Youth unemployment > 30%
- Net emigration of skilled workers > 2% of labor force

3.3 Resource Dependence

- Single commodity > 50% of exports
- Natural resource rents > 20% of GDP
- Manufacturing value-added < 10% of GDP
- Economic complexity index < -0.5

3.4 Institutional Fragility

- Corruption Perceptions Index < 30
- Rule of law index < 40th percentile
- Political instability with recent regime changes
- Central bank lacking independence
- Regulatory quality deteriorating

3.5 Geopolitical Risk

- Active military conflict or high risk thereof
- Severe international sanctions
- Major trade partner hostility
- Regional instability spillover effects

4 High-Risk Economies: Case Studies

4.1 Lebanon

Lebanon exemplifies multiple overlapping vulnerabilities. Public debt exceeded 150% of GDP before the 2019 crisis, while political sectarianism prevented fiscal reforms. The currency lost over 95% of its value between 2019-2023, and GDP contracted by approximately 40%. While already in crisis, complete institutional collapse remains possible if political paralysis continues.

Key indicators: Debt-to-GDP: 150%+; Political deadlock; Banking sector insolvency; Currency collapse ongoing.

4.2 Pakistan

Pakistan faces chronic balance-of-payments crises, requiring 23 IMF programs since 1958. External debt service consumes over 30% of government revenue. Political instability, weak tax collection (tax-to-GDP ratio below 10%), and dependence on volatile textile exports and remittances create fragility. Climate change impacts on agriculture add additional stress.

Key indicators: Recurrent IMF bailouts; Reserves crisis; Political turmoil; Flood vulnerability.

4.3 Egypt

Egypt's debt surpassed 90% of GDP, while the pound has faced repeated devaluations. The military controls significant economic sectors, reducing efficiency. Dependence on imported wheat (largest importer globally) and Suez Canal revenues creates vulnerability to global shocks. Rapid population growth (100 million+) strains resources and job creation.

Key indicators: High debt; Wheat import dependence; Youth bulge; Water scarcity.

4.4 Sri Lanka

Sri Lanka defaulted on external debt in 2022, marking the first default in its history. Tourism collapse during COVID-19, coupled with ill-advised tax cuts and agricultural policy failures, precipitated crisis. Foreign reserves depletion led to inability to import fuel and medicine. The case demonstrates how middle-income countries can rapidly deteriorate under policy failures.

Key indicators: 2022 default; Political upheaval; Reserves depletion; Social unrest.

4.5 Tunisia

Tunisia's democratic transition has not delivered economic prosperity. Public sector employment exceeds 60% of formal jobs, creating fiscal strain. Youth unemployment remains above 35%, fueling emigration and social discontent. Debt-to-GDP ratio approaches 90%, while IMF negotiations stall over politically difficult reforms. Democratic backsliding since 2021 compounds economic challenges.

Key indicators: High youth unemployment; Fiscal pressures; Political regression; IMF program uncertainty.

4.6 Laos

Laos accumulated significant debt to China through Belt and Road infrastructure projects, with external debt exceeding 80% of GDP. Debt service consumes over half of government revenues. Currency depreciation and inflation erode purchasing power. Limited economic diversification and dependence on hydropower exports to Thailand create vulnerability.

Key indicators: China debt burden; Currency crisis; Limited exports; Hydropower dependence.

5 Economies Under Stress: Secondary Tier

Several economies exhibit concerning indicators without immediate collapse risk:

5.1 Argentina

Argentina's serial default history (nine times since independence) reflects chronic institutional weakness. Inflation exceeded 100% in 2023. However, Argentina has repeatedly recovered

from crises, and new policy directions under President Milei introduce uncertainty regarding trajectory.

5.2 Turkey

Turkey faces high inflation (60%+ in 2023), unorthodox monetary policy, and political centralization. However, its diversified industrial base, tourism sector, and geopolitical importance provide resilience. Recent policy normalization reduces immediate risk.

5.3 Ethiopia

Civil conflict, default on eurobond, and severe drought create vulnerabilities. However, large population (120 million+), reforms prior to conflict, and strategic importance may facilitate international support.

5.4 Zambia

Defaulted in 2020; debt restructuring ongoing. Copper dependence creates vulnerability, but relatively small debt and cooperative approach to restructuring reduce collapse risk.

6 Quantitative Risk Modeling

We estimate a logistic regression model predicting severe crisis probability:

$$P(Crisis) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 Debt + \beta_2 Inst + \beta_3 Resource + \beta_4 Demo + \beta_5 Geo)}} \tag{4}$$

Historical data from 1980-2020 covering 150 countries and 45 crisis episodes yields coefficient estimates (simplified):

Variable	Coefficient	Std. Error
Debt-to-GDP (>100%)	1.8	0.4
Institutional Quality	-2.1	0.5
Resource Dependence	1.3	0.3
OADR (>30%)	0.9	0.3
Geopolitical Stress	1.5	0.4
Constant	-4.2	0.6

Table 1: Logistic Regression Coefficients for Crisis Prediction

This model suggests that economies with debt above 100% of GDP, weak institutions (bottom quartile), and high resource dependence face crisis probability exceeding 30% over a 5-year horizon—substantially above the baseline 3-5%.

7 Scenario Analysis

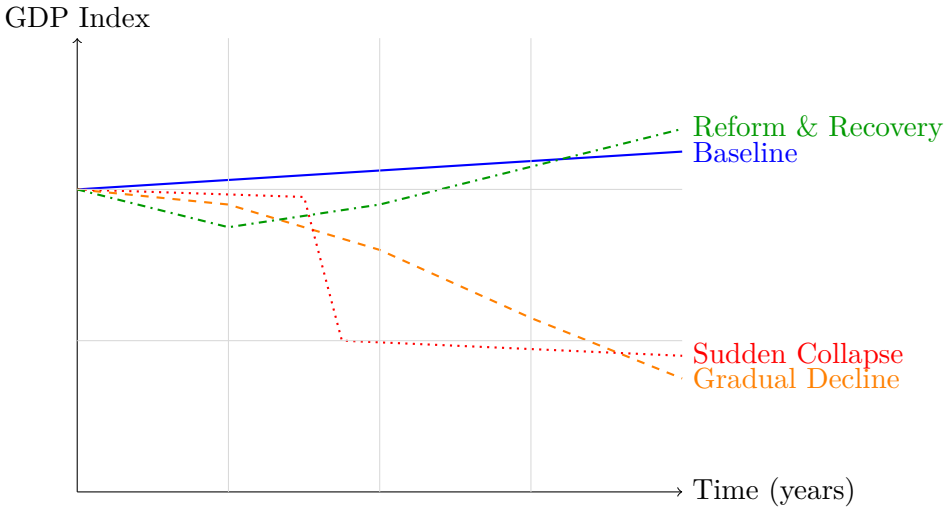

Figure 2: Economic Trajectory Scenarios for Vulnerable Economies

Three primary trajectories characterize at-risk economies:

Gradual Decline: Persistent fiscal deficits, declining productivity, and institutional erosion lead to slow but steady GDP contraction. Examples: Greece (2008-2016), Italy (stagnation).

Sudden Collapse: External shock (commodity price crash, capital flight, natural disaster) triggers rapid deterioration. Examples: Venezuela (oil price collapse + mismanagement), Sri Lanka (2022).

Reform and Recovery: Political change enables structural reforms, international support mobilized, growth resumes. Examples: Peru (1990s), Georgia (2004-2008).

8 Policy Implications

8.1 For Vulnerable Economies

1. **Fiscal consolidation:** Reduce primary deficits through expenditure rationalization and revenue mobilization while protecting social spending.

2. **Institutional strengthening:** Enhance central bank independence, improve regulatory quality, combat corruption.

3. **Economic diversification:** Reduce commodity dependence through industrial policy, human capital investment, and export sophistication.

4. **Social safety nets:** Build targeted programs to protect vulnerable populations during adjustment, maintaining social cohesion.

5. **Debt management:** Pursue preemptive restructuring when debt becomes unsustainable; avoid extending unsustainable situations.

8.2 For International Community

1. **Early warning systems:** Strengthen IMF surveillance and crisis prevention mechanisms.

2. **Debt relief frameworks:** Expedite Common Framework processes; ensure private sector participation.

3. **Conditional assistance:** Link support to governance reforms, not just fiscal metrics.
4. **Climate adaptation:** Provide concessional finance for climate-vulnerable economies.
5. **Migration management:** Prepare for displacement from failing states; create legal pathways.

9 Limitations and Uncertainty

Economic prediction remains inherently uncertain due to:

- **Black swan events:** Pandemics, wars, natural disasters are unpredictable but consequential.
- **Policy endogeneity:** Predictions may trigger preventive actions, altering outcomes (self-negating prophecy).
- **Political economy:** Leadership changes can rapidly shift trajectories in either direction.
- **International support:** Geopolitical considerations may prompt bailouts for strategic economies.
- **Social resilience:** Informal economies and social networks provide buffers not captured in official statistics.

Historical crisis prediction models show modest accuracy (60-70% correct classification), with significant false positives and false negatives. This paper identifies economies facing elevated risk, not deterministic outcomes.

10 Conclusion

Multiple economies face significant collapse risk through 2035, driven by unsustainable debt, demographic pressures, resource dependence, institutional fragility, and geopolitical tensions. Lebanon and Sri Lanka have experienced recent crises with ongoing instability. Pakistan, Egypt, Tunisia, and Laos exhibit multiple vulnerability indicators warranting close monitoring.

However, economic collapse remains a tail risk that can be mitigated through decisive policy action. The determinants of collapse—fiscal imbalances, weak institutions, poor governance—are policy choices amenable to reform. International cooperation in debt relief, crisis prevention, and capacity building can reduce collapse probability.

The next decade will test whether at-risk economies and the international community mobilize the political will to prevent predicted crises. History suggests that action typically comes too late, after crisis has begun. Earlier intervention, though politically difficult, would reduce human suffering and economic waste.

Future research should refine early warning models, explore transmission mechanisms between vulnerable economies, and analyze the political economy of reform implementation. Understanding not just which economies might collapse, but why reforms fail or succeed, remains central to crisis prevention.

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Glossary

Balance of Payments Crisis A situation where a country cannot finance its international payments obligations, typically due to insufficient foreign exchange reserves, leading to currency devaluation and potential default.

Composite Vulnerability Index (CVI) A multidimensional metric aggregating fiscal, demographic, institutional, resource dependence, and geopolitical indicators to assess economic collapse risk.

Debt Sustainability The condition where a government can service its debt obligations without requiring exceptional financing measures or default, typically requiring primary surpluses when real interest rates exceed growth rates.

Dutch Disease An economic phenomenon where resource export booms lead to currency appreciation, making non-resource sectors uncompetitive and reducing economic diversification.

Economic Collapse Severe economic deterioration characterized by sharp GDP contraction (>20% over three years), hyperinflation (>500% annually), currency collapse (>70% depreciation), or sovereign default with institutional failure.

Economic Complexity Index A measure of productive knowledge embedded in an economy, reflecting the diversity and sophistication of its exports; higher values indicate greater economic diversification and capabilities.

Fiscal Consolidation Policy measures aimed at reducing budget deficits and stabilizing public debt through expenditure cuts, revenue increases, or both.

Old-Age Dependency Ratio (OADR) The ratio of population aged 65+ to working-age population (15-64), expressed as a percentage; rising OADR indicates greater fiscal pressure from pensions and healthcare.

Primary Balance Government fiscal balance excluding interest payments on debt; a measure of discretionary fiscal policy stance independent of debt service obligations.

Resource Curse The paradox whereby countries with abundant natural resources often experience slower economic growth, worse governance, and more conflict than resource-poor countries.

Sovereign Default A government's failure to meet debt obligations to foreign or domestic creditors, either through non-payment or involuntary restructuring.

Terms of Trade The ratio of export prices to import prices; improvements (higher export prices relative to imports) increase national income, while deteriorations reduce it.

The End