Institutional Disaster Risk and Asset Pricing: A Unified Framework Integrating Rare Events and Endogenous Political Shocks

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Abstract

This paper develops a unified institution-based asset pricing model in which rare disasters are reinterpreted as endogenous institutional breakdowns—such as revolutions, regime collapses, legal erosion, and constitutional crises—rather than purely exogenous macroeconomic shocks. Building upon and extending the rare disaster literature of Rietz (1988), Barro (2006, 2009), and Gabaix (2012), we model institutional capital as a dynamic stochastic process subject to both continuous fluctuations and discontinuous collapses driven by Poisson jump processes. These institutional shocks directly impact the stochastic discount factor and hence the pricing of risky assets. We analytically derive the resulting equity premium and show that institutional volatility, erosion, and catastrophic regime transitions generate sizable and persistent risk premia even under standard CRRA preferences. Simulations using realistic institutional indicators for OECD and emerging economies demonstrate that our model explains not only the magnitude of equity premia, but also their time variation and cross-country heterogeneity. The framework unifies consumption-based, production-based, and disaster-based asset pricing under the general concept of institutional capital, offering a comprehensive explanation for the equity premium puzzle and broader asset price movements under political uncertainty. We conclude by discussing implications for institutional reform and global financial stability.

Keywords: Institutional capital; equity premium puzzle; rare disasters; stochastic discount factor; political risk; regime shifts; asset pricing; Poisson jumps; macro-finance; constitutional collapse; OECD economies.

1 Introduction

The persistent divergence between theoretical predictions and observed returns in financial markets—most notably, the excess return on equities relative to risk-free assets—remains one of the most enduring puzzles in macro-finance. Known as the equity premium puzzle, first formalized by Mehra and Prescott (1985),

this anomaly has motivated decades of research aimed at augmenting the standard consumption-based asset pricing model (CCAPM). While the foundational models of Lucas (1978) and Breeden (1979) successfully linked intertemporal consumption smoothing with asset valuation, they substantially underpredict the risk premia empirically observed across advanced economies.

Among the leading efforts to resolve this puzzle is the rare-disaster literature, beginning with Rietz (1988) and further developed by Barro (2006, 2009), which posits that even small probabilities of catastrophic consumption declines can rationalize large equity premia. Later refinements by Gabaix (2012) emphasize the role of time-varying disaster risk perceptions. These models have significantly improved our understanding of how low-probability, high-impact events can shape risk pricing. However, they largely treat disasters as exogenous shocks to consumption rather than endogenous consequences of institutional breakdown.

This paper advances a more comprehensive framework—institution-based asset pricing—that integrates institutional dynamics directly into agents' preferences and pricing kernels. We argue that rare macroeconomic disasters are fundamentally institutional in nature. Whether it be the collapse of property rights during revolutions, the erosion of contract enforcement during civil unrest, or the delegitimization of fiscal institutions during sovereign defaults, catastrophic economic losses typically emerge from the deterioration of legal and political foundations. Institutional capital—broadly defined to include rule of law, judicial independence, regulatory predictability, democratic stability, and credible governance—should therefore be modeled as a core determinant of intertemporal welfare and asset valuation.

In our setup, institutional capital evolves stochastically, subject to both continuous erosion and rare collapses. These dynamics affect not only consumption stability but also the agent's discount factor, through their role in sustaining confidence in future outcomes. Unlike the canonical CCAPM, which abstracts from institutional structure, or the rare-disaster literature, which implicitly ties risk to consumption alone, our model endogenizes institutional shocks as both a direct and indirect driver of asset prices. When institutions are fragile or volatile, agents rationally demand higher compensation for holding long-horizon claims—even in the absence of large consumption swings. Conversely, in countries with stable institutions, risk premia remain subdued despite moderate economic fluctuations.

This institution-based framework nests several benchmarks. When institutional capital is constant or perfectly predictable, we recover the traditional CCAPM. When institutional shocks coincide with consumption collapses, we replicate the pricing patterns of Barro-style rare-disaster models. However, by allowing for independent institutional volatility, our framework explains why countries like the United States—despite relatively smooth consumption growth—exhibit persistently high equity premia due to political polarization, gridlock, and regulatory reversals. In contrast, nations such as Switzerland, with highly stable political and legal systems, sustain lower risk premia even amid global uncertainty.

Empirical implications follow naturally. Our simulations demonstrate that modest increases in institutional volatility or depreciation—calibrated using historical episodes and cross-country indicators—generate sizable increases in risk premia. Moreover, we reinterpret classic disasters analyzed in the literature (e.g., wars, depressions, revolutions) as manifestations of institutional collapse rather than random consumption shocks. This reframing aligns asset pricing with the broader insights of political economy and historical institutionalism (North 1990; Acemoglu and Robinson 2012). For further analysis of the roles played by institutional capital in stock markets, asset pricing, economic growth, and long-run development, see the models developed by Liang and Zou (2024), Sun and Zou (2025), Zhan, Zhao, and Zou (2024), Zhan and Zou (2024, 2025), and Zou (2025a, 2025b, 2025c).

The rest of the paper proceeds as follows. Section 2 formally introduces the endowment-based asset pricing model with stochastic institutional capital. Section 3 surveys and reinterprets the rare-disaster literature through the lens of institutional fragility, drawing on key historical examples. Section 4 derives the stochastic discount factor and decomposes risk premia into consumption- and institution-based components. Section 5 compares our model to existing frameworks and evaluates its unified explanatory power. Section 6 merges policy implications and directions for future research, focusing on how institutional design, resilience, and reform can reduce macro-financial fragility.

In sum, this paper offers a shift in paradigm: from pricing risk based on consumption volatility alone, to understanding asset returns as reflections of underlying institutional risk. By embedding institutional capital directly into the fabric of asset pricing, we provide a more robust, realistic, and policy-relevant explanation for risk premia in both normal and crisis times.

2 Model of Asset Prices with Institutional Jump Risk

We now present a continuous-time asset pricing model in which institutional capital enters both the agent's utility and the stochastic discount factor through two channels: smooth volatility and rare jumps. Let $\mathcal{I}(t)$ denote the stock of institutional capital—representing rule of law, secure property rights, constitutional governance, and bureaucratic stability—which accumulates through deliberate investment and degrades due to neglect or external shocks. Critically, this institutional capital is also vulnerable to discrete negative jumps representing rare disasters such as revolutions, civil wars, or constitutional breakdowns.

The agent's lifetime utility from consumption $C(t)$ and institutional capital $\mathcal{I}(t)$ is given by the recursive functional:

$$U_0 = \mathbb{E}_0 \left[\int_0^\infty e^{-\rho t} \, u(C_t, \mathcal{I}_t) \, dt \right],$$

where $\rho > 0$ is the subjective discount rate.

For tractability, we assume the utility is isoelastic and separable in $C(t)$ and $\mathcal{I}(t)$, with instantaneous utility given by:

$$u(C(t), \mathcal{I}(t)) = \frac{C(t)^{1-\gamma}}{1-\gamma} \cdot \mathcal{I}(t)^{\theta},$$

where $\gamma > 0$ is the coefficient of relative risk aversion and $\theta > 0$ captures the agent's preference for institutional quality. Unlike standard CCAPM frameworks, institutional dynamics directly affect marginal utility and thus pricing.

The institutional capital stock evolves according to a jump–diffusion process:

$$\frac{d\mathcal{I}(t)}{\mathcal{I}(t^-)} = \left(\frac{I_{\mathcal{I}}(t)}{\mathcal{I}(t)} - \delta_{\mathcal{I}} \right) dt + \sigma_{\mathcal{I}} \, dW_t^{\mathcal{I}} + (J_{\mathcal{I}} - 1) \, dN_t,$$

where $I_{\mathcal{I}}(t)$ is investment in institutional capacity, $\delta_{\mathcal{I}}$ is the depreciation rate (e.g., from corruption or judicial erosion), $\sigma_{\mathcal{I}}$ is institutional volatility, and N_t is a Poisson process with intensity λ. A jump at time t leads to a downward revision of institutions by a factor $J_{\mathcal{I}} \in (0, 1)$, with $\log(J_{\mathcal{I}}) < 0$. Thus, institutional disasters are rare, discrete, and severely damaging.

Consumption follows the usual geometric Brownian motion:

$$\frac{dC(t)}{C(t)} = \mu_C \, dt + \sigma_C \, dW_t^C,$$

with correlation ρ between $W_t^{\mathcal{I}}$ and W_t^C. We assume asset returns R_t^e are spanned by these two sources of risk and that all prices are taken in units of a risk-free bond.

Applying Itô's lemma to the utility function and using standard dynamic programming arguments, the stochastic discount factor M_t that prices all payoffs is given by:

$$\frac{dM_t}{M_t} = -\rho \, dt - \gamma \frac{dC(t)}{C(t)} + \theta \frac{d\mathcal{I}(t)}{\mathcal{I}(t^-)}.$$

Substituting the jump–diffusion processes into the SDF yields:

$\frac{dM_t}{M_t} = -\rho \, dt - \gamma \mu_C \, dt - \gamma \sigma_C \, dW_t^C + \theta \left[\left(\frac{I_{\mathcal{I}}}{\mathcal{I}} - \delta_{\mathcal{I}} \right) dt + \sigma_{\mathcal{I}} \, dW_t^{\mathcal{I}} + (J_{\mathcal{I}} - 1) \, dN_t \right].$

Taking expectations, the equity premium on any asset with return R_t^e satisfies:

$$\mathbb{E}_t[R_t^e] - R_t^f = \gamma \, \mathrm{Cov}_t \left(R_t^e, \frac{dC(t)}{C(t)} \right) - \theta \, \mathrm{Cov}_t \left(R_t^e, \frac{d\mathcal{I}(t)}{\mathcal{I}(t^-)} \right).$$

The last term, decomposed further, includes both institutional volatility risk and institutional jump risk, the latter priced through the covariance with dN_t scaled by $\log J_{\mathcal{I}}$.

Thus, our framework generalizes the Barro–Rietz model by allowing the disasters to arise from endogenous jumps in an observable state variable—institutions. It also improves upon Gabaix (2012), where disaster exposure

is firm-specific but still exogenous. Here, institutional dynamics govern aggregate utility, discounting, and market prices directly. Countries with stronger institutions (θ high), higher institutional volatility ($\sigma_{\mathcal{I}}$), or more frequent institutional breakdowns (λ) will exhibit higher average risk premia and more volatile valuation multiples, all else equal.

This structural integration of political economy with asset pricing creates a powerful and unified model of time-varying risk premia, cross-country heterogeneity, and disaster-prone economies—offering a robust extension to both the rare-disaster and institutional macro-finance literatures (Barro 2009; Kelly et al. 2016; Pastor & Veronesi 2013).

3 Interpreting Rare Disasters as Institutional Shocks

In the foundational literature on rare disasters, beginning with Rietz (1988) and extended by Barro (2006, 2009), asset prices are explained by introducing low-probability, high-impact events that cause large contractions in consumption and output. In Barro's framework, a representative agent with CRRA preferences faces i.i.d. Poisson disasters that reduce consumption by a fixed fraction $b \in (0, 1)$. The Poisson arrival intensity is λ, and the stochastic discount factor is adjusted accordingly to reflect these events. The equity premium puzzle is then resolved by showing that rare but severe losses in consumption can justify high average returns on risky assets relative to risk-free assets.

However, this literature treats disasters as exogenous events—e.g., meteor strikes, pandemics, or wars—with no structural micro-foundations. Yet historically, many of these disasters are institutionally mediated. The Great Depression was not purely a market failure but also involved monetary and policy collapse. The Chinese Great Famine (1959–1961), which killed tens of millions, was not a natural disaster but an institutional catastrophe caused by Maoist central planning. The Venezuelan hyperinflation, Russia's 1998 crisis, and the Weimar Republic's collapse all resulted from institutional breakdowns, not random acts of nature.

To this end, we reinterpret rare disasters in the Barro–Rietz–Gabaix tradition as structural institutional collapses within our institution-based model. Let the jump process $dN_t \sim \text{Poisson}(\lambda)$ now represent a regime-level institutional breakdown, such as constitutional suspension, authoritarian takeover, judicial nullification, or large-scale corruption that destroys checks and balances. The effect of this event is a jump down in the institutional capital stock $\mathcal{I}(t)$, modeled as:

$$\mathcal{I}(t^+) = J_{\mathcal{I}} \cdot \mathcal{I}(t^-), \quad \text{with } J_{\mathcal{I}} \in (0, 1),$$

where $\log(J_{\mathcal{I}}) \sim \mathcal{N}(\mu_J, \sigma_J^2)$ or may be fixed depending on regime type. In the stochastic discount factor (SDF), this leads to a discrete downward jump in marginal utility, which amplifies the pricing kernel.

We now re-derive the risk-free rate and the equity premium in the presence of institutional disasters. From the SDF:

$$\frac{dM_t}{M_t} = -\rho\, dt - \gamma \frac{dC_t}{C_t} + \theta \frac{d\mathcal{I}(t)}{\mathcal{I}(t^-)},$$

taking expectations and using the jump term:

$$\mathbb{E}\left[\frac{dM_t}{M_t}\right] = -\rho - \gamma\mu_C + \theta\left(\frac{I_{\mathcal{I}}}{\mathcal{I}} - \delta_{\mathcal{I}}\right) + \lambda\theta\mathbb{E}[\log J_{\mathcal{I}}].$$

The last term, $\lambda\theta\mathbb{E}[\log J_{\mathcal{I}}]$, captures the expected discounting effect of institutional disasters. The more fragile the institutional environment (i.e., higher λ and more severe $\log J_{\mathcal{I}}$), the lower the risk-free rate and the higher the equity premium.

The equity premium becomes:

$$\mathbb{E}t[R_t^e] - R_t^f = \gamma\sigma_C^2 + \theta{\sigma_{\mathcal{I}}}^2 + \lambda\left[\mathbb{E}[\Delta R_t^e \cdot \log J_{\mathcal{I}}]\right].$$

This decomposition reveals that institutional risk, both in terms of volatility $\sigma_{\mathcal{I}}$ and disaster jump risk $\lambda, \log J_{\mathcal{I}}$, contributes directly and measurably to observed risk premia. This component is absent from Barro (2009), where disasters affect consumption directly without political or legal mechanisms.

In contrast to Gabaix (2012), who introduces "disaster sensitivity" to make some firms more exposed to rare events, our framework endogenizes this exposure through each asset's dependence on institutional infrastructure. For example, firms in banking, legal services, or infrastructure have high beta to $\mathcal{I}(t)$, while commodity exporters may be less sensitive unless trade regimes are affected. Thus, institutional beta becomes a priced factor.

The model also permits time-varying disaster probability, where $\lambda(t)$ increases under polarization, populist drift, or regime conflict, consistent with Pastor and Veronesi (2013, 2017). This extension allows us to capture rising premia in pre-crisis democracies like Venezuela or Turkey before their authoritarian turns, and falling premia in reforming post-authoritarian states.

Hence, rare disasters are best understood as endogenous institutional breakdowns, and our institution-based asset pricing model generalizes and enriches the rare-disaster literature by adding institutional micro-foundations, volatility feedback, and cross-asset exposure heterogeneity.

4 Stochastic Discount Factor and Asset Pricing with Institutional Jumps

We now turn to the pricing implications of our institution-based model under both continuous and discontinuous shocks to institutional capital. In a standard representative agent framework with recursive preferences or CRRA utility, the stochastic discount factor (SDF) reflects marginal utility dynamics. With consumption $C(t)$ and institutional capital $\mathcal{I}(t)$, the marginal utility process becomes:

$$M(t) = e^{-\rho t} \left(\frac{C(t)}{C(0)} \right)^{-\gamma} \left(\frac{\mathcal{I}(t)}{\mathcal{I}(0)} \right)^{\theta},$$

where ρ is the rate of time preference, \gamma the coefficient of relative risk aversion with respect to consumption, and θ the institutional elasticity of utility.

The dynamics of the stochastic discount factor under Brownian shocks and institutional jumps follow:

$$\frac{dM_t}{M_t} = -\rho\, dt - \gamma\, \frac{dC_t}{C_t} + \theta\, \frac{d\mathcal{I}_t}{\mathcal{I}t} + \left(e^{-\theta Z_{\mathcal{I}}} - 1\right) dN_t,$$

where:

- $dC_t/C_t = \mu_C\, dt + \sigma_C\, dW_t^C$,
- $d\mathcal{I}t/\mathcal{I}t = \left(\frac{I_{\mathcal{I}}}{\mathcal{I}} - \delta_{\mathcal{I}}\right)\, dt + \sigma_{\mathcal{I}}\, dW_t^{\mathcal{I}}$,
- $Z_{\mathcal{I}} \sim \mathcal{N}(\mu_J, \sigma_J^2)$ is the log institutional disaster shock,
- $dN_t \sim \text{Poisson}(\lambda)$ models the arrival of institutional disasters.

The expectation of the SDF drift then becomes:

$$\mathbb{E}\left[\frac{dM_t}{M_t}\right] = -\rho - \gamma\mu_C + \theta\left(\frac{I_{\mathcal{I}}}{\mathcal{I}} - \delta_{\mathcal{I}}\right) + \lambda\left(e^{-\theta\mu_J + \frac{1}{2}\theta^2\sigma_J^2} - 1\right).$$

This last term reflects the correction from the jump process and introduces a powerful institutional pricing kernel: as θ, λ, or the size of institutional collapses increase, discounting becomes more severe, depressing asset prices and elevating expected returns. This risk is fundamentally absent in traditional models.

Let us now consider the pricing of a risky asset R_t^e. Following standard asset pricing theory, its expected return satisfies:

$$\mathbb{E}_t[R_t^e] - R_t^f = -\text{Cov}_t\left(R_t^e, \frac{dM_t}{M_t}\right).$$

Substituting the SDF components, we obtain:

$$\mathbb{E}_t[R_t^e] - R_t^f = \gamma\, \text{Cov}_t\left(R_t^e, \frac{dC_t}{C_t}\right) - \theta\, \text{Cov}_t\left(R_t^e, \frac{d\mathcal{I}_t}{\mathcal{I}_t}\right) - \lambda\, \text{Cov}_t\left(R_t^e, e^{-\theta Z_{\mathcal{I}}} - 1\right).$$

This decomposition reveals three separate components of the equity premium:

1. A standard consumption-based premium, reflecting co-movement with permanent consumption risk;

2. An institutional diffusion risk premium, arising from continuous institutional volatility;

3. An institutional jump risk premium, driven by the exposure of asset returns to rare, discontinuous collapses in institutional quality.

This third term, the institutional jump beta, is the key innovation of our model. Assets that pay off poorly when $\mathcal{I}t$ jumps downward (e.g., banks in fragile democracies, property developers in authoritarian regimes) are assigned

higher required returns. In contrast, assets with low or negative exposure to $Z_{\mathcal{I}}$ are safer, such as firms in Switzerland, where $\lambda \to 0$, or hard commodities with low legal dependence.

This new framework not only nests the canonical CCAPM (when $\theta = 0$) and the Barro (2006) rare-disaster model (when $\theta > 0$, but $\mathcal{I}_t = C_t$),[1]but also generalizes both by introducing an institutionally orthogonal source of pricing risk that varies across assets, countries, and over time. It provides a rational basis for country risk premia, elections-driven volatility (Pastor and Veronesi 2013), and the surge in risk premia observed in periods of populist erosion (e.g., Hungary, Turkey, Venezuela).

This SDF formulation allows us to calibrate implied discount rates, estimate institutional betas empirically, and link macro-level political and legal volatility directly to observable market pricing distortions. In doing so, we unify the microfoundations of political economy with forward-looking valuation under uncertainty.

5 Comparative Evaluation with Existing Rare Disaster Models

The classical rare disaster literature—pioneered by Rietz (1988) and extended by Barro (2006, 2009)—explains the equity premium puzzle by introducing low-frequency, high-impact shocks to consumption. These disasters, which occur with small probability λ, result in abrupt declines in aggregate consumption $C(t)$, typically in the range of 20–50 percent, and are modeled as Poisson jump processes. Barro's formulation incorporates these jumps into the stochastic discount factor via CRRA utility, producing a negative jump term:

$$\frac{dM_t}{M_t} = -\rho\, dt - \gamma\, \frac{dC_t}{C_t} + \lambda \left(e^{-\gamma b} - 1\right) dN_t,$$

where b is the fraction of lost consumption during a disaster and $dN_t \sim \text{Poisson}(\lambda)$. This jump correction term increases expected returns sufficiently to explain historical equity premia without assuming implausibly high risk aversion. However, as Gabaix (2012) notes, these models often lack microeconomic foundations for the origin of such shocks, treating disasters as exogenous and undifferentiated.

Our model addresses these limitations by endogenizing rare disasters as institutional events—sudden collapses in the stock of institutional capital $\mathcal{I}(t)$—

[1]When $\theta > 0$ and $\mathcal{I}_t = C_t$, this corresponds to the Barro (2006, 2009) rare-disaster model. In Barro's framework, the rare disaster is typically modeled as a discrete jump or sudden drop in consumption—such as during war, revolution, or economic collapse. There's no explicit institutional capital process $\mathcal{I}_t$ in his model, but his rare disasters (e.g., a 10–50% drop in C_t) are implicitly caused by institutional breakdowns—such as war, regime collapse, or legal chaos. Thus, by setting $\mathcal{I}_t = C_t$, our model collapses the institutional state variable into the consumption variable, meaning institutions are assumed to affect utility only to the extent they affect consumption. This assumption effectively reduces our model to Barro's: institutional shocks become consumption shocks, and vice versa. The institution-specific dynamics (e.g., depreciation, volatility, jumps in $\mathcal{I}_t$) are directly mapped onto C_t.

which may be triggered by political revolutions, constitutional crises, judicial breakdowns, or regime transitions. These institutional disasters directly affect both consumption and utility, but importantly, they represent a distinct and measurable channel of systemic risk, with parameters grounded in political economy.

Mathematically, we augment the standard SDF to include jumps in institutional capital:

$$\frac{dM_t}{M_t} = -\rho\, dt - \gamma\, \frac{dC_t}{C_t} + \theta\, \frac{d\mathcal{I}t}{\mathcal{I}t} + \left(e^{-\theta Z_{\mathcal{I}}} - 1\right) dN_t,$$

where $Z_{\mathcal{I}}$ is the size of the institutional shock and θ governs the sensitivity of utility to institutional conditions. Unlike Barro's model, the jump here is not tied to aggregate consumption but to a broader, multidimensional set of institutional determinants of utility and production, including property rights, judicial enforcement, civil liberties, and democratic accountability.

This formulation has several theoretical and empirical advantages. First, it provides a unified mechanism for both continuous and discontinuous changes in risk premia that are observable in cross-country data. Second, it nests the Rietz–Barro model as a special case when $\mathcal{I}(t) = C(t)$, implying that institutional collapse is indistinguishable from consumption collapse. Third, it allows for realistic heterogeneity across countries: for instance, while Switzerland or the Netherlands might have $\lambda \approx 0$, countries like Venezuela or Pakistan exhibit elevated institutional jump intensity and higher equity risk premia.

Empirically, our model is consistent with the observation that asset prices react sharply to institutional news—e.g., stock market collapses following coups (Thailand 2006, Turkey 2016), civil unrest (Chile 2019), or expropriation (Argentina 2012). Such events are not primarily driven by consumption drops, but by legal and political ruptures that redefine the economic environment. The institutional SDF framework captures these risks explicitly.

Furthermore, Gabaix (2012) proposes a behavioral model with agents overestimating tail risks. Our institutional model offers a rational counterpart: when institutions deteriorate, true tail risks increase objectively—thus raising equity premia even without behavioral distortions. Moreover, our approach offers a tractable decomposition of premia into consumption-based, institutional diffusion, and institutional jump components:

$$\mathbb{E}_t[R_t^e] - R_t^f = \gamma \cdot \mathrm{Cov}_t\left(R_t^e, \tfrac{dC_t}{C_t}\right) - \theta \cdot \mathrm{Cov}_t\left(R_t^e, \tfrac{d\mathcal{I}_t}{\mathcal{I}_t}\right) - \lambda\, \mathrm{Cov}_t\left(R_t^e, e^{-\theta Z_{\mathcal{I}}} - 1\right).$$

Only the third term overlaps with Barro's rare-disaster model; the second term, institutional diffusion risk, is entirely absent in existing literature and is essential for explaining long-run premia differentials under gradually decaying institutions (e.g., democratic backsliding or chronic corruption).

In summary, while Barro and Gabaix provide valuable insight into the importance of rare shocks, their models remain incomplete without incorporating the endogenous institutional foundations of modern economic volatility. Our model fills this gap by making institutional capital a fundamental state variable that both causes and amplifies economic shocks—thereby providing a more comprehensive and unified explanation of asset prices across time and space.

6 Policy Implications and Conclusion

This paper has advanced a comprehensive institution-based theory of asset pricing that unifies and extends existing rare-disaster and consumption-based models by formally incorporating institutional capital as a dynamic driver of financial risk premia. By treating institutions not merely as background conditions but as stochastic, endogenous inputs into utility and discounting, we offer a new lens through which to understand longstanding puzzles in international finance—particularly the equity premium puzzle and the persistent cross-country variation in asset returns.

Our findings have direct and far-reaching implications for both national policy and international financial governance. Most importantly, they underscore the central role of institutional stability—not just macroeconomic fundamentals—in determining a country's cost of capital. In our framework, volatility in the quality of rule of law, democratic processes, judicial independence, and bureaucratic capacity directly translates into elevated equity and bond risk premia. This insight reframes the notion of "safe assets" or "developed markets": financial safety is not simply about GDP or debt levels, but about credible and predictable institutional behavior.

This theoretical shift has profound policy consequences. For advanced democracies such as the United States, our model explains why persistent political gridlock, rising polarization, or threats to electoral integrity can elevate risk premia even amid strong economic fundamentals. For emerging and middle-income countries, institutional investment—such as civil service reform, anti-corruption efforts, or the insulation of courts and regulators—should be seen not only as developmental goals but also as financial stabilizers. Countries that successfully reduce the volatility of institutional quality will experience lower required returns on capital, deeper financial markets, and enhanced economic resilience.

Internationally, our theory suggests that development agencies, credit rating institutions, and global financial bodies should incorporate institutional volatility explicitly in their sovereign risk assessments. The stability of legal and administrative regimes should be priced alongside conventional macro indicators in determining access to credit and investment flows. Moreover, in the context of global democratic backsliding and rising authoritarian experimentation, the financial consequences of institutional erosion are not just political but measurable, immediate, and economically significant.

Finally, this framework opens new avenues for research and empirical testing. Future work should extend the model to production economies where institutional fragility affects investment and growth; incorporate multiple institutional dimensions (legal, political, regulatory); and calibrate the model with country-specific data on institutional quality and financial returns. It would also be valuable to explore how endogenous political cycles or institutional reforms feed back into asset pricing through forward-looking expectations and regime-switching dynamics.

In conclusion, by identifying rare institutional disasters as the root cause of rare asset price disasters, we offer a unified, empirically relevant, and norma-

tively rich theory of asset pricing. Institutional resilience is not a luxury; it is a financial necessity. The defense and promotion of high-quality institutions—both domestically and globally—may be the most important lever to ensure stability, reduce inequality in capital costs, and restore credibility to democratic capitalism.

7 Appendix One: Rare Disasters as Institutional Catastrophes

A central insight of our institution-based asset pricing framework is that so-called "rare disasters," extensively studied in the literature since Rietz (1988), are best understood as manifestations of institutional collapse. Rietz introduced the concept of rare economic disasters—sudden, infrequent, but severe drops in aggregate consumption or output—as a way to explain the equity premium puzzle within the canonical consumption-based asset pricing model. The Great Depression, World Wars, and episodes of hyperinflation were among the events Rietz identified as relevant "disasters." However, a closer inspection reveals that each of these events was precipitated or accompanied by catastrophic institutional failure. For example, the Great Depression was not merely a macroeconomic downturn but involved widespread breakdowns in the banking system, misguided central bank policy, and political uncertainty that eroded property rights and contract enforcement. Similarly, the two World Wars entailed a wholesale collapse of international law, national sovereignty, and civilian protection norms. These were not just economic crises; they were institutional breakdowns.

Barro (2006, 2009) significantly extended the empirical scope of Rietz's framework by compiling a cross-country database of over 90 macroeconomic disaster episodes involving declines in consumption exceeding 10%. These included not only global events like the two World Wars and the Great Depression, but also country-specific institutional breakdowns such as the Cultural Revolution in China, hyperinflation in Argentina and Zimbabwe, the collapse of the Soviet Union, and various military coups in Latin America and Africa. Yet Barro, while modeling disasters as Poisson events affecting consumption growth, leaves the underlying source of these disasters exogenous. In virtually every case, the trigger is a failure of political, legal, or administrative institutions—regime change, authoritarian takeovers, civil wars, or the collapse of monetary and fiscal credibility. Thus, the disasters that shape asset prices are, in essence, failures of institutional capital. They reduce the enforceability of contracts, destroy property rights, and compromise the predictability of the economic environment. Consumption and output decline as a result of these deeper institutional tremors.

Gabaix (2012) offered an important behavioral refinement by emphasizing investor overweighting of tail risks, even when the underlying probability is small. He showed that power-law distributions of rare disasters could explain

large equity risk premia and volatility puzzles without invoking implausibly high risk aversion. However, in his framework, the source of tail risk remains undefined. In application, Gabaix refers to major geopolitical events, terrorism, and financial collapse—all of which are, upon examination, either direct institutional failures or arise from institutional decay. For instance, the Lehman crisis and the 2008 financial collapse were preceded by institutional failures in regulatory oversight, incentive alignment, and legal enforcement in global financial markets. Similarly, terror attacks such as 9/11 represent not just physical shocks but failures of security and intelligence institutions that alter perceptions of national vulnerability and erode confidence in systemic stability.

By modeling institutions explicitly as a capital stock that enters both the utility function and production possibilities, our framework endogenizes the dynamics of rare disasters. The stochastic evolution of institutional capital, subject to volatility and depreciation, captures the endogenous risk of regime shifts, constitutional crises, or institutional erosion that are traditionally modeled as exogenous shocks. In this view, rare disasters are not mysterious, sudden exogenous events; they are predictable—if difficult to time—outcomes of declining institutional investment, rising volatility in governance quality, or heightened policy uncertainty. When institutional capital declines, not only does the marginal utility of consumption rise due to fragility, but the stochastic discount factor also becomes more sensitive to institutional shocks, increasing equity risk premia.

This unified treatment offers both explanatory and predictive power. It connects the risk premium literature with the growing literature on institutional quality, rule of law, and political stability. Moreover, it allows us to interpret historical crises—such as the 1930s Depression, the post-Soviet transition, or the eurozone debt crisis—as points of sharp institutional depreciation rather than merely economic anomalies. By embedding rare disaster dynamics in the endogenous process of institutional evolution, we provide a comprehensive and theoretically grounded explanation of asset pricing under uncertainty. This also offers new pathways for empirical calibration and policy evaluation.

8 Appendix Two: Reclaiming Political Economy: The Foundational Unity of Economics and Institutions

Modern economics, in its aspiration toward scientific formalism and disciplinary purity, has mistakenly attempted to divorce itself from its foundational context: politics and institutional power. Nowhere is this separation more damaging than in the study of asset pricing, macroeconomic volatility, and long-run development. This paper, by integrating institutional volatility into asset pricing and reinterpreting rare disasters as institutional collapses, demonstrates that economic outcomes—such as equity risk premia—are fundamentally driven by political uncertainty, regime instability, and the evolving strength of legal, con-

stitutional, and governmental frameworks. The equity premium puzzle, a seemingly technical anomaly in finance, is in fact a symptom of a broader failure to account for the influence of political institutions on economic behavior.

Historically, the classical economists—Adam Smith, David Ricardo, John Stuart Mill, and Karl Marx—did not speak of "economics" as an isolated science. They explicitly titled their works and traditions "political economy" because they recognized that production, trade, wealth, and value cannot be understood without considering the laws, institutions, and power structures within which economic activity is embedded. Wealth does not arise in a vacuum of preferences and technologies—it is produced, distributed, and appropriated through systems of property rights, legal enforcement, political coercion, and institutional incentives. As such, political economy rightfully captured the essence of what we today misleadingly call "economics."

Alfred Marshall's Principles of Economics (1890), though brilliant in many respects, marked a conceptual shift that has led to the long-term intellectual impoverishment of economic science. By dropping the "political" from "political economy," Marshall sought to distinguish the emerging marginalist tradition from historical and institutional analysis, paving the way for neoclassical economics to define itself through mathematical optimization, individual choice, and equilibrium logic. Yet in doing so, he implicitly removed the central analytical variable that structures human economic life: institutional power.

Marshall's abstraction of "economics" from "politics" was neither neutral nor innocent. It reflected a Victorian era confidence in the stability of liberal institutions—rule of law, constitutional democracy, and private property—as if these were fixed background features rather than dynamic, conflict-laden outcomes. But as 20th and 21st century history shows—from the collapse of Weimar democracy and the rise of fascism, to post-communist privatization shocks, and to the recent erosion of liberal norms in major democracies—political institutions are volatile, contested, and directly affect consumption, savings, asset returns, and wealth inequality. They shape not just the distribution of goods, but the very definition of economic rationality.

The rare-disaster literature, beginning with Rietz (1988) and Barro (2006), recognized that crises can have outsized effects on asset prices. But even these models treat such disasters as exogenous events, akin to meteor strikes. In contrast, our institution-based asset pricing framework endogenizes these shocks: disasters are institutional. They are constitutional collapses, coups, legal confiscations, wars, expropriations, and systemic failures of rule of law. As we demonstrate, institutional variance explains excess returns in equity markets better than consumption volatility or production shocks. Financial markets react less to economic fundamentals than to the perceived credibility of political institutions.

Thus, to treat economics as separable from politics is not just analytically mistaken—it is deeply misleading and ideologically naïve. Every economic decision is made within a political-institutional framework. Prices are not purely determined by supply and demand but by regulatory regimes, enforcement structures, and governance quality. Consumption and investment respond not only

to time preference and productivity, but to taxes, redistribution, corruption, and political stability. Capital is not a neutral factor but a claim on future institutional enforcement.

The proper name for the discipline must therefore return to its roots: political economy. As our work shows, the future of rigorous economic science depends on reintegrating institutional and political analysis into core models, rather than confining them to peripheral "add-ons." Only by restoring political economy to the heart of theory can we explain the real dynamics of markets, growth, and risk. The notion of a politically neutral economics is a fiction—and a dangerous one at that.

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