Research Article

Black swans and antifragility in Brazil: an interdisciplinary analysis of economic, institutional, and judicial fragilities

Abstract

This article examines the persistence of systemic fragilities in contemporary Brazil, emphasizing how rare, high-impact events – the so-called "Black Swans" theorized by Nassim Taleb – expose and amplify vulnerabilities in the country's economic, institutional, and judicial domains. Drawing on Taleb's concept of antifragility, the work investigates whether Brazilian society and its governance structures learn from, adapt to, or are further destabilized by unpredictable shocks. The analysis integrates theoretical frameworks from Taleb and Jessé Souza with current empirical data, addressing macroeconomic instability, institutional pathologies, and the enduring influence of patrimonialism. The findings suggest that, instead of developing antifragile characteristics, Brazil repeatedly succumbs to cycles of volatility and persistent inequality. The article advocates for building genuinely antifragile policies and institutions, capable not only of withstanding chaos but of leveraging it to promote collective improvement.

Keywords: Antifragility, black swan, Brazil, systemic fragility, inequality, patrimonialism, institutional opacity, economic crises

Volume 13 Issue 3 - 2025

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Received: July 11, 2025 | **Published:** August 06, 2025

Abbreviations: CNS, central nervous system; IOF, tax on financial operations; DIEESE, inter-union department of statistics and socioeconomic studies; GDP, gross domestic product; STJ, superior court of justice; STF, supreme federal court

Introduction

Contemporary history suggests a cycle of chronic vulnerability, whose roots lie in Brazil's social and political formation. Such a complex context calls for a critical interdisciplinary perspective that can combine Taleb's concepts of antifragility and Black Swans with social diagnoses of Brazil's structural backwardness as advanced by Jessé Souza[3]. By uniting these lenses, one can better understand how unexpected shocks repeatedly reveal and worsen the country's underlying weaknesses.

Taleb defines antifragility as going beyond mere resilience or robustness, arguing that resilient systems only resist shocks and remain static, whereas antifragile systems actively benefit and improve when exposed to volatility and uncertainty.[1] In Taleb's words, an antifragile system benefits from volatility and uncertainty, unlike a merely resilient one. However, Brazil – far from demonstrating antifragile behavior – tends to deteriorate under shocks, reproducing inequalities and institutional asymmetries. Taleb also observes that "Black Swan logic makes what you do not know far more relevant than what you do know", highlighting the overwhelming impact of unforeseen events. Indeed, Brazil often appears surprised by occurrences that profoundly destabilize its fragile structures. For example, the inability of policymakers and financial authorities to anticipate the 2015–2016 recession, the socioeconomic turbulence of the COVID-19 pandemic, and the recent global inflationary cycle vividly illustrates this disconnect between complex risk and governmental preparedness.

This article adopts a critical interdisciplinary approach (economic, institutional, and judicial) to contemporary Brazil through the lens of Taleb's and Souza's theories. Drawing on recent evidence – from macroeconomic dynamics to public corruption surveys – it articulates empirical data from official reports (e.g., DIEESE studies, Transparency International indices) and reputable media sources[4,5,6] with the theoretical insights of Taleb and other social thinkers. The goal is to identify how unforeseen events and policy choices have generated structural fragilities in Brazilian governance and society. The analysis is structured into six major sections: (1) economic scenario and structural inequality; (2) institutional fragility and corruption; (3) judicial vulnerability; (4) public security and education; (5) international insertion amid global uncertainty; and (6) integration of these domains in the broader crisis. Through this organization, we rigorously connect conceptual debates with national literature and concrete data on Brazil's recent trajectory.

Finally, the article aims to contribute robustly to the academic and practical debate on building antifragile systems in contexts historically marked by patrimonialism, informality, and recurring cycles of "Black Swans.[2] (translated by the author)" Understanding Brazil's chronic exposure to shocks without apparent learning is a prerequisite to imagining reforms and institutions that genuinely turn chaos into opportunity.

Materials and methods

This research employs a qualitative interdisciplinary methodology, combining theoretical analysis with examination of empirical data. We survey academic literature and draw on official reports from institutions such as DIEESE[7] and Transparency International[8], as well as reports from reputable media outlets (e.g., BBC News, The Economist, and CNN Brasil). Quantitative data and statistics are used when available, and key concepts and quotations from Taleb and Souza are referenced directly from their original works. Whenever possible, data and statistics are triangulated across multiple reliable sources. The study is organized into five main analytical sections (as above), in addition to introduction and conclusion. This approach ensures that the analysis remains grounded in factual evidence, while integrating the theoretical contributions of Taleb and Souza with the empirical realities of Brazil.

Economic scenario, inequality, and structural fragility

The services – not only undermine sustainable growth but also exacerbate social inequality. For example, in 2024 the Brazilian currency lost over 20% of its value against the US dollar, driven by global factors and domestic fiscal uncertainties. This "volatility" in exchange rates translates into soaring consumer prices. According to the Brazilian Institute of Economics (FGV/IBRE), between 2012 and 2024 food prices rose by 162%, far above the general inflation rate. Such inflation disproportionately hits low income households, driving families into debt or pushing them to the informal economy. It also erodes purchasing power: DIEESE[7] reports confirm that the minimum wage in Brazil remains insufficient to cover basic needs, forcing millions into precarious labor conditions. These dynamics concentrate risk and hardship in the most vulnerable segments of society, reinforcing the cycle of poverty and inequality.

Taleb warns that complex systems subjected to artificial suppression of volatility become increasingly fragile, as antifragility surpasses mere resilience or robustness. While resilient systems merely resist shocks and remain unchanged, antifragile systems improve when exposed to volatility. In Brazil, excessive centralized control in monetary and fiscal policy creates an illusion of stability but prevents local flexibility and experimentation, concentrating risk and leaving the country highly vulnerable to severe collapses when unexpected "Black Swan" events occur.[1] In Taleb's terms, excessively structured economies become brittle under stress. In practice, Brazil's attempts to tightly regulate inflation and exchange rates over decades have often resulted in severe crises when unexpected global shifts occur (e.g., post-Lula commodities boom, 2008 crisis, or the pandemic).

These technical vulnerabilities are compounded by Brazil's persistent patrimonialism economic structure.[2] (translated by the author) Jessé Souza emphasizes that patrimonialism is not a relic of the past but "the cement that unites the Brazilian economic and political elite".[2] (translated by the author) In other words, longstanding patronage ties allow privileged groups to capture wealth even during downturns. For instance, Brazil's largest private banks frequently record historic profits even when the broader economy stagnates or contracts. Such outcomes indicate that market benefits are concentrated in entrenched elites rather than broadly distributed. Meanwhile, regressive tax mechanisms exacerbate inequality. Recent tax reforms and hikes in financial transaction taxes (IOF) have disproportionately burdened the poor while providing little relief to low-income earners. A DIEESE study notes that increases in IOF ostensibly aimed at wealthier investors hurt the poorest taxpayers. In sum, Brazil's fiscal and financial architecture tends to penalize social mobility. The result is an economy that tolerates volatility only for the privileged, while the general population bears the cost of crises.

In this context, social indicators remain alarming. Household indebtedness reached record levels in 2024, and studies indicate that the average Brazilian minimum wage falls far short of the ideal to meet basic needs. Millions of Brazilians rely on emergency aid programs simply to survive, while public debt and interest payments consume an ever-larger share of national revenue. This evidence suggests that, rather than benefiting from economic turbulence, Brazil's society is weakened by it. The economy remains centered on oligopolistic sectors and a state apparatus heavily influenced by private interests, which blocks "bottom-up tinkering" and decentralized innovation that could foster genuine resilience.

Institutional fragility, governance, and systemic corruption

Brazil's political and administrative system exhibits chronic fragility. Governance is marked by opacity, personalism, and the frequent capture of public resources by elites. These dynamics create "pacts" of self-protection that hollow out the state's republican functions. As Jessé Souza observes, the Brazilian elite often operates at the margins of legality, erecting safeguards that deflect accountability. This elite capture undermines public trust and contributes to a popular perception that the law serves some citizens but not others.

Opaque practices abound. For example, Brazil's so-called "100-year secrecy" on officials' financial data has shielded the assets and expenses of political figures from scrutiny. Numerous reports have documented unexplained personal fortunes among officeholders: ministerial assets have ballooned well beyond what salaries would justify, and large public expenditures (such as travel costs for presidential staff) often go undetailed or unreported. These patterns of secrecy and hidden spending institutionalize a lack of transparency. Investigations reveal that significant presidential travel expenses and official allowances remain unevaluated by Congress, raising fears of misuse. Meanwhile, ordinary oversight mechanisms are weakened; for instance, the legislature has repeatedly shielded allies from corruption probes, and special budgetary funds are managed without accountability.

This endemic opacity aligns with Taleb's notion of fragility, wherein concentrated and opaque power structures cannot adapt or correct through normal feedback mechanisms. Consequently, each scandal or hidden transaction acts as an "institutional Black Swan"—a rare yet highly damaging event.[1] In 2024, Transparency International ranked Brazil's Corruption Perceptions Index at its worst historical position, signaling systemic erosion of the rule of law. This trend deters investment and innovation, as trust in institutions plummets. In sum, chronic corruption is a constitutive element of Brazil's governance.

The resilience of the elite—who frequently evade punishment—further undermines antifragility. On a systemic level, this yields what one scholar calls an "institutional pathology": a public administration that reacts slowly to crises, shields its members, and resists change. Consequently, billions of reais are diverted annually into corrupt schemes: recent cases show vast embezzlement of pension funds and health budgets. With resources siphoned off, essential social programs and infrastructure remain underfunded. In Taleb's terms, the result is a public sector that amplifies shocks instead of mitigating them, creating a governance structure that is both fragile and exposed to new Black Swans.[1]

In summary, Brazil's model of governance is not only frail but resistant to reform. Rather than building antifragile mechanisms (decentralized, transparent, adaptive institutions), it entrenches elites' control. The central challenge is to break this cycle: promoting a political culture oriented toward the public interest, enhancing transparency, and ensuring that decision-makers truly bear "skin in the game." Without these changes, Brazil will likely remain vulnerable to recurring crises, scandals, and paralysis.

Judicial fragility and challenges to democratic consolidation

The Brazilian judiciary, once viewed by many as a bastion of justice, has itself become entwined in the nation's structural crisis.

Citation: Pereira VR. Black swans and antifragility in Brazil: an interdisciplinary analysis of economic, institutional, and judicial fragilitie. *Forensic Res Criminol Int J.* 2025;13(3):136–140. DOI: 10.15406/frcij.2025.13.00449

In recent decades, the judiciary's expanding role in politics – through the so called "judicialization" of governance – has paradoxically exposed deep institutional weaknesses. Lengthy procedural delays, inconsistent case law, and episodic activist or minimalist judgments create legal uncertainty. Businesses face unpredictable regulatory changes as courts intervene in economic policy; politicians face unpredictable prosecutions and acquittals. These patterns undermine both economic confidence and the legitimacy of democracy. In Taleb's terms, the judiciary has become part of the "fragile system": when confronted with the unexpected, it too tends to sputter or break rather than adapt.

For example, individual court decisions on public policy (such as sudden injunctions on government programs or bans on digital platforms) function as institutional Black Swans: they are hard to foresee but have immense impact. Such rulings can abruptly halt sectors of the economy or reshape political debates, often without clear precedents. Moreover, the judiciary itself has not been immune to corruption. Recent investigations in Brazil have implicated judges and court officials in scandals involving sale of decisions, favoritism in contracts, and political appointments in exchange for influence. These scandals are less visible than political graft, but they erode the judiciary's legitimacy.

The combination of concentrated power and limited accountability deepens judicial fragility. Top courts have been criticized internationally for overstepping their roles – intervening in Internet regulation, taxation (e.g. centralizing control of the PIX payment system), and even in policymaking by omitting legislative action. Such centralization makes the system brittle. Citizens increasingly perceive judiciary as a political actor rather than an impartial arbiter. Surveys reveal growing distrust in courts, as judicial decisions are seen as favoring powerful interests rather than delivering equal justice. The lack of external oversight for magistrates and the difficulty of removing corrupt judges only worsen the problem.

To address these challenges, the judiciary needs profound reorientation. Trust could be rebuilt through stronger transparency and accountability mechanisms – for example, clear conflict-of-interest rules, open hearings, and rigorous ethics enforcement. Taleb reminds us that truly antifragile systems "learn from error and incorporate the unpredictable into their operating logic". In other words, the justice system would have to treat crises and scandals as opportunities to improve norms and procedures, rather than as occasions for defensive secrecy. Only then might the Brazilian judiciary begin to function as a stabilizing force that learns from adversity, rather than as a source of Black Swan events.[1]

Public security, education, and social impacts: between fragility and the potential for antifragility

Brazil's social fragility is starkly visible in the domains of public security and education, which together shape long-term social cohesion. Chronic inequality and the legacy of slavery have left a "cycle of social humiliation," as Souza describes it, in which the poor – especially black and peripheral communities – remain highly vulnerable to violence and exclusion. In public security, this is seen in the uneven protection of citizens: recent data indicate that states governed by the opposition experience higher homicide rates than those aligned with the federal administration. This suggests that policing is deeply politicized and short-term. Moreover, the lack of continuity and accountability in security policies – often traded for partisan gain – means that long-term public safety strategies are rarely implemented.

Brazil's inadequate social policies amplify these security risks. Penalties and incarceration are highly selective: impoverished individuals are far more likely to be penalized than wealthier offenders. Souza argues that this disproportionate criminalization of poverty deepens structural violence. In effect, the poorest communities experience both under-protection (inadequate policing and social services) and over penalization (aggressive law enforcement). The result is a feedback loop: social exclusion fuels crime, and crime leads to repressive measures that further exclude marginalized groups.

Education reflects a similar pattern of fragility. Brazil consistently ranks low in international education comparisons (for example, it ranked last among 63 countries in a recent OECD PISA assessment).[9] The stagnation in educational outcomes – despite increases in per capita income – indicates structural failures beyond funding levels. The Brazilian education system largely replicates social stratification: elite public schools and expensive private universities remain inaccessible to the majority, while schools in poor areas suffer from overcrowding, low teacher quality, and poor infrastructure. Cultural analysts like Pierre Bourdieu, together with Souza, note that Brazilian education functions more as a vehicle for reproducing the existing class order than for enabling social mobility.

These social fragilities interact. Low educational attainment and social exclusion feed crime and vice versa. The state's approach often emphasizes social control over empowerment. In Foucauldian terms, governmentality in Brazil manages poverty and violence through discourses that blame the poor for their own condition, thereby maintaining a "state of exception" for marginalized groups. Students from underprivileged backgrounds face a daily reality of precarious schooling and low expectations, which normalizes their precarious social status.

From the perspective of antifragility, these sectors have significant potential to become stronger through reforms but currently contribute to systemic fragility. Taleb emphasizes that antifragile systems improve by learning from stress and error[1]; yet Brazil's social policies display limited capacity for such adaptive learning, remaining short-sighted and frequently reversed. Security and education initiatives often suffer from rigid central control that inhibits local innovation and flexibility. Consequently, violence and educational deficits persist unaddressed, leaving Brazilian society vulnerable to repeated crises.

In summary, deficiencies in public security and education reinforce each other, perpetuating the cycle of exclusion. Souza warns that Brazil's "structural underclass" is a direct result of this elite pact that colonizes the public sphere.[4] In this context, the system's antifragility is essentially non-existent: redistributive policies fail, educational reforms are hollowed out, and social mobility remains blocked.[1] To break this cycle, Brazil would need to implement truly inclusive social policies that learn from and adapt to challenges, rather than reinforcing existing patterns of fragility.

International context and geopolitical risks: between isolation and exposure to global shocks

In today's interconnected world, Brazil's internal fragilities are compounded by an uncertain international environment. The country is a self-proclaimed emerging power, yet it lacks a coherent global strategy to manage external shocks. Its foreign policy has oscillated between subservience and overreach within groups like BRICS, often resulting in diplomatic setbacks and loss of influence. According to international analysis, Brazil has failed to leverage its BRICS membership effectively, partly due to domestic political turmoil and inconsistent leadership. This strategic weakness further exposes

Brazil: as a peripheral economy in the global system, it is vulnerable to trade fluctuations, commodity price swings, and financial crises emanating from major powers. Noam Chomsky's and David Harvey's critiques of globalization are relevant here: major powers often impose orthodox economic policies that harm dependent countries, leaving them at the mercy of external volatility (paralleling Taleb's notion of unpredictable shocks).

Internally, Brazil's government has struggled with a loss of popular legitimacy, as reflected in recent polls and international commentary. Fluctuating between populist rhetoric and technocratic policies, the federal administration often acts reactively with short horizons. This undermines the country's ability to project stable influence abroad. On the financial side, innovations like the PIX instant payment system (noted by The Economist) showcase Brazil's technological advances and potential for financial inclusion. However, they also raise new risks regarding data privacy, state surveillance, and dependency on technology platforms. Managing these risks will test Brazil's institutional capacity.

From a theoretical perspective, Taleb's antifragile state strategically embraces uncertainty through decentralized power, experimental policy design, and preparedness for unexpected shocks.[1] In contrast, Brazil heavily relies on commodity exports, lacks strategic reserves in capital and technology, and prioritizes short-term, personality-driven politics over long-term planning. As a result, external shocks often precipitate internal crises.

The shifting alliances of blocs like BRICS, the rise of new regional powers, and global threats (climate change, pandemics, cyber-attacks) underscore the need for adaptability in foreign policy. Critics argue that without institutional intelligence and continuous learning, Brazil's international standing will suffer. Ultimately, Taleb's and others' analyses converge on one lesson: Brazil is caught in a loop of chronic exposure without developing mechanisms to leverage its experiences. Sustainable development, therefore, requires moving beyond reactive politics and explicitly pursuing antifragility in diplomatic and economic strategy.

Discussion

Integration of systemic fragilities

The preceding analysis shows how Brazil's economic, institutional, and judicial fragilities intertwine, creating a systemic web of vulnerability. On the economic front, Brazil not only faces external shocks (e.g., rapid capital outflows, currency swings) but also amplifies them through internal weaknesses. Data from DIEESE and other sources indicate that even when GDP grows, the gains do not translate into broadly improved living conditions. Instead, economic booms often coincide with rising household debt and deepening reliance on social aid, while the wealthy sector (finance and industry) profits disproportionately.

In politics and governance, the persistence of corruption and opacity undermines any gains. Institutional accountability is hollowed out: secrecy rules and the erosion of oversight mean that public scandals cause only superficial change. As evidenced by recent reporting in The Economist and Estado de S. Paulo, implementing meaningful political and judicial reform has been nearly impossible. The judiciary itself has become a source of instability, as excessive activism and inconsistency breed uncertainty rather than resolve it.

Moreover, new challenges are emerging rapidly. The rise of online betting and gambling – estimated to cost Brazilian households some R$24 billion per year – drains resources from poor families (as found by recent studies). Disinformation campaigns and cyber vulnerabilities threaten both social trust and infrastructure. Environmental pressures (like deforestation or extreme weather) and global cyber threats also compound the risks. International analyses by outlets like BBC and Welt[10] highlight these converging threats, from political polarization to transnational crises.

In this overall picture, Brazil has made only patchy progress toward resilience. The country remains far from an antifragile model capable of learning and improving from shocks. Palliative fixes and short term policies dominate, while citizen participation and institutional renewal lag. The self-reinforcing nature of fragility means that each crisis tends to create conditions for the next one. As a result, structural vulnerabilities not only persist but regenerate.[11–14]

Conclusion

The critical analysis of Brazil's economic, institutional, and judicial fragilities – through the lens of Nassim Taleb's Black Swan and antifragility concepts and Jessé Souza's structural critique – reveals a nation repeatedly surprised by unpredictable, high-impact events. Instead of strengthening its adaptive capacity, Brazil has deepened long-standing patterns of power concentration, opacity, and inequality. The data show a country where economic volatility exacerbates social divides (e.g., capital flight and Real devaluation hurt workers while financial elites' profit), and where graft and secrecy sap public trust. As Souza notes, an "elite of backwardness" maintains mechanisms that capture the state, offloading instability onto the vulnerable. Meanwhile, as Taleb warns, Brazil's leaders largely avoid "skin in the game": they face the upside of power without the downside of risk.

On the institutional front, chronic corruption and the trivialization of transparency (e.g., endless secrecy, hidden budgets, and recurrent scandals) continue to govern Brazil. Public resources are diverted at scale while democratic accountability erodes. In the judiciary, delays, case-by-case policymaking, and a lenient attitude toward corruption propagate legal uncertainty. These factors align exactly with the conditions of systemic fragility that Taleb describes as lack of feedback, resistance to change, and low public trust. Socially, education and security fail to break exclusionary cycles, so that Brazil persists in Taleb's "vicious cycle of fragility" rather than achieving positive optionality. Internationally, Brazil's subordinate position and internal discord leave it hostage to external shocks, as David Harvey and others have noted about dependent economies.

Taken together, these findings underscore the necessity for radical alternatives. Taleb's concept of antifragility implies that systems must actively learn from and evolve through disorder rather than merely resist it.[1] For Brazil, this means decisively breaking away from vertical, oligarchic models of governance and societal structures. The path forward could involve (i) radical transparency and genuine social participation in decision making; (ii) deep institutional reforms to enforce accountability and eliminate special privileges; (iii) dismantling the oligarchic coalitions that perpetuate inequality; and (iv) embracing uncertainty by creating mechanisms for decentralization and experimentation, so that shocks can catalyze innovation rather than destruction. Only by adopting these principles can Brazil transform its structural fragility into adaptive strength.

In summary, the national challenge is to turn fragility into anti-fragility. Brazil must not merely resist shocks but learn from them – requiring technical reforms and a profound shift in political and ethical culture. History shows that states anchored in patronage and concentration collapse when unexpected crises strike; Brazil must choose whether to remain at the mercy of new Black Swans and the entrenched elites who benefit from them, or to rebuild its institutions on principles of openness, accountability, and continuous learning.

Acknowledgments

The author gratefully acknowledges the contributions of Taleb, Souza, and other scholars whose work informed this analysis. No external funding was received for this research.

Conflicts of interest

The author declares no conflicts of interest.

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