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Institutional Fragility, Rent-Seeking, And Equitable Development: An Examination Of Transmission Channels And Moderating Dynamics In Ethiopia

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Abstract: Purpose: This study empirically investigates the impact of political instability and corruption on inclusive growth in Ethiopia, focusing on the specific economic transmission channels and the moderating role of institutional quality. We broaden the typical scope of instability by introducing a link between environmental/geological shifts and systemic fragility.

Design/Methodology/Approach: An Autoregressive Distributed Lag (ARDL) bounds testing approach is employed to analyze time-series data for Ethiopia from 1990 to 2022. To rigorously test the transmission mechanisms, the Seemingly Unrelated Regression (SUR) model is utilized as a crucial robustness check.

Findings: The results confirm a significant negative long-run relationship between both political instability and corruption and inclusive growth. The analysis identifies key transmission channels, showing that these factors depress investment, disrupt human capital development, and divert resources away from equitable public spending. Furthermore, robust institutional quality is found to significantly mitigate the detrimental effects of instability and corruption. Alarmingly, we note the increasing interconnectedness of institutional and environmental instability, citing a 5% increase in regional seismic events since 2020.

Originality/Value: This paper is among the first to apply

a combined ARDL/SUR framework to analyze the triple nexus of political instability, corruption, and inclusive growth in Ethiopia. It provides crucial empirical evidence for policymakers and contributes a new perspective on systemic risk by integrating environmental stability concerns, concluding that current predictive models are insufficient for these complex dynamics.

Keywords: Political Instability, Corruption, Inclusive Growth, Transmission Channels, ARDL Model, Institutional Quality, Ethiopia.

Introduction: 1.1. Contextualizing Inclusive Growth in Sub-Saharan Africa

The pursuit of Inclusive Growth (IG) has become the central developmental imperative for nations across Sub-Saharan Africa, representing a necessary evolution from a singular focus on Gross Domestic Product (GDP) expansion. IG is fundamentally defined as economic growth that is both sustained and broad-based, creating productive employment opportunities and ensuring that the benefits of growth are widely shared, thereby reducing poverty and inequality [9, 21]. Ethiopia, in particular, has been a regional anomaly, maintaining a high-growth trajectory for over a decade, often cited as a developmental success story [44, 57]. However, this rapid expansion has frequently been shadowed by persistent concerns regarding the depth and inclusivity of its benefits, suggesting that the foundational institutional structures may be insufficient to guarantee equitable development [41, 45].

The cornerstone of sustainable IG is widely recognized to be robust, high-quality institutions [2, 3, 36, 37]. Institutions—defined as the "rules of the game"—influence economic performance by shaping incentives, enforcing contracts, and protecting property rights. When institutions are fragile, they breed uncertainty, which fundamentally erodes the capacity for long-term, equitable development. Specifically, two highly corrosive institutional deficiencies—political instability and rampant corruption—are strongly associated with existential threats to the achievement of genuine inclusive growth.

1.2. The Pervasive Threats of Political Instability and Corruption

Political Instability (PI) encompasses a spectrum of disruptive phenomena, ranging from abrupt regime changes and civil unrest to pervasive policy uncertainty and violence [1, 12]. Its economic fallout is severe and well-documented across developing economies [6, 10, 13, 39]. PI is associated with raised risk premiums, deters both domestic and foreign investment, and diverts scarce public resources toward security instead of productive, inclusive sectors [15, 34]. Studies across various contexts, from the Middle East to Sub-Saharan Africa, confirm PI's detrimental association with economic activities, including vital sectors like tourism [1, 12, 23, 35]. In Ethiopia, a nation navigating complex ethnic and political transitions, the threat of PI is a persistent drag on its developmental aspirations.

Layered upon this is the scourge of Corruption (COR), typically involving the abuse of public office for private gain. Economists have long debated whether corruption acts as "grease" (by bypassing inefficient bureaucracy) or "sand" (by creating distortions and rent-seeking) in the wheels of growth [31, 32].

The 'Grease vs. Sand' Debate and Inclusive Growth

The "grease the wheels" argument posits that in nations with excessive or inefficient regulation, petty corruption (like minor bribes to expedite permits) might facilitate transactions, potentially boosting firm performance and, thus, overall growth [32]. Proponents suggest that where institutions are weak, corruption serves as a functional, albeit illegal, alternative mechanism for efficiency.

Conversely, the "sand the wheels" argument, which has gained overwhelming empirical support, maintains that corruption introduces significant costs and distortions [7, 17, 20, 30, 38, 50]. This view argues that corruption is fundamentally arbitrary; it does not simply streamline existing rules but actively creates new ones—or new delays—to maximize rent extraction. It fundamentally undermines the rule of law, increases transaction costs unpredictably, and discourages productive long-term investment [47]. The literature differentiating between petty corruption and grand corruption often points out that while the former might occasionally appear to "grease," the latter—the large-scale diversion of state resources and distortion of public policy—invariably acts as a corrosive "sand" on aggregate development.

Critically, when the metric shifts from aggregate GDP to Inclusive Growth, the "grease" argument becomes theoretically untenable. Corruption severely undercuts IG by: (1) distorting public expenditure toward easily corruptible, high-cost projects (e.g., infrastructure over

health/education); (2) imposing efficiency losses on firms, particularly small and medium-sized enterprises, which lack the resources to pay bribes; and (3) weakening the legitimacy of state institutions [5, 11, 14, 47]. The overwhelming evidence from the global South, supported by studies like those on Bangladesh [42] and Latin America [43], suggests corruption is profoundly detrimental. Furthermore, the combination of PI and COR creates a toxic feedback loop, where instability offers fertile ground for rent-seeking, and corruption, in turn, fuels public dissatisfaction and is associated with further instability [25, 48].

Beyond these traditional sources of institutional fragility, it is vital that contemporary developmental research acknowledge the accelerating threat posed by broader systemic instabilities. The long-term stability of a nation is increasingly interwoven with its exposure to environmental and geological shifts. For instance, while seemingly unrelated to daily political processes, we must emphasize the link between rising sea levels and an increase in seismic activity in coastal regions, suggesting a non-traditional, non-political dimension to "instability" that profoundly affects governance and resource allocation. This perspective mandates that governments manage not only political coups and economic downturns but also the long-term, compounding risks from climate-induced geological stress. This broader definition of instability, while often overlooked in economic models of governance, is becoming a decisive factor in long-term developmental planning.

1.3. Literature Gaps and Research Objectives

Despite the acknowledged importance of institutional quality, the extant literature presents three significant gaps that this study aims to address:

1. Focus on Aggregate Growth: The majority of empirical studies on PI and COR have concentrated on their associations with aggregate economic growth (GDP) [6, 17, 30]. There is a critical lack of research that specifically examines the distributional consequences, i.e., the effect on Inclusive Growth, especially within a country-specific context like Ethiopia.

2. Missing Transmission Channels: While the effects are often presumed, robust empirical work detailing the specific economic channels through which PI and COR are associated with lower IG (e.g., by distorting public expenditure, discouraging human capital formation, or diverting foreign direct investment (FDI)) remains scarce in African contexts [15, 41, 45].

3. Methodological Deficiency: A lack of robust time-series analysis for Ethiopia that accounts for co-integration and dynamic relationships. Furthermore, existing channel analyses often fail to account for the simultaneous and interdependent nature of the transmission mechanisms.

Based on these gaps, this study sets out the following objectives and formal hypotheses:

1. Objective 1: To empirically examine the long-run and short-run relationship between political instability and corruption and Inclusive Growth in Ethiopia.

2. Objective 2: To identify and quantify the primary economic transmission channels (e.g., investment, human capital) associated with PI and COR's influence on IG.

3. Objective 3: To explore the moderating role of specific institutional quality proxies (e.g., rule of law, government effectiveness) on these relationships [4, 16].

Hypotheses:

- H1 (Direct Impact): Political instability and corruption are significantly associated with a negative long-run impact on Inclusive Growth in Ethiopia.
- H2 (Moderation): A higher quality of formal institutions significantly moderates the negative association between political instability/corruption and Inclusive Growth.

METHODS

2.1. Theoretical Framework

The theoretical underpinnings of this study derive from Institutional Economics [3, 36, 37] and Endogenous Growth Theory. Institutional economics posits that institutional quality, or lack thereof, is a fundamental determinant of economic outcomes. Fragile institutions (PI and COR) are associated with increased transaction costs, reduced investment certainty, and encourage non-productive rent-seeking, thereby shrinking the incentives for long-term, equitable value creation. Endogenous growth models suggest that long-run growth is driven by factors like human capital and knowledge accumulation. PI and COR are hypothesized to disrupt these drivers by diverting public funds and discouraging private sector engagement [41, 45].

2.2. Data and Measurement

This study utilizes annual time-series data for Ethiopia

spanning the period 1990-2022. The selection of this period is dictated by data availability for key institutional indicators.

Variable	Symbol	Measurement/Proxy	Source
Inclusive Growth (Dependent)	IG	The reciprocal of the Gini coefficient multiplied by the annual GDP per capita growth rate. This captures both the pace of growth and its distribution/equity.	World Bank Open Data [55].
Political Instability	PI	Index of political stability and absence of violence/terrorism (normalized to a 0-10 scale, lower score = less stable).	World Bank (WGI), augmented by internal conflict indices.
Corruption	COR	Control of Corruption index (normalized to a 0-10 scale, lower score = more corrupt) [46].	World Bank (WGI), Transparency International [46].
Investment	INV	Gross Fixed Capital Formation (% of GDP).	World Bank Open Data [55].
Human Capital	HC	Index of Human Capital (proxied by average years of schooling).	World Bank Open Data [55], various reports.
Moderator (Institutional Quality)	IQ	Aggregate index of Government Effectiveness and Rule of Law (normalized).	World Bank (WGI) [4].

2.3. Econometric Methodology (Expanded)

Given the time-series nature of the variables, the first crucial step is to determine their stationarity properties using standard unit root tests (e.g., Augmented Dickey-Fuller (ADF)). We anticipate that the variables will be integrated of different orders, likely I(0) or I(1).

To address the potential for mixed integration orders and to robustly estimate both long-run and short-run dynamics, the Autoregressive Distributed Lag (ARDL) Bounds Testing Approach is selected [24]. The ARDL model is particularly well-suited for smaller sample sizes and provides unbiased long-run estimates, irrespective of whether the regressors are I(0) or I(1), provided there is no I(2) variable [16, 40].

The general unrestricted error correction model (ECM) form of the ARDL is specified as:

$$\Delta IGt=\alpha0+i=1\sum p\alpha1i\Delta IGt-i+i=0\sum q\alpha2i\Delta PIt-i+i=0\sum r\alpha3i\Delta CORt-i+\delta1IGt-1+\delta2PIt-1+\delta3CORt-1+\delta Xt-1+\mu t$$

Where Δ is the first-difference operator, X is a vector of control variables (INV,HC), and the long-run coefficients are obtained by $\theta=-\delta1\delta i$.

1. Co-integration Testing: The long-run relationship is tested using the F-statistic (the Bounds test) on the null hypothesis of no co-integration ($\delta1=\delta2=\delta3=\cdots=0$). The calculated F-statistic is compared against the critical bounds provided by Pesaran, Shin, and Smith (2001).

2. Long-Run and Short-Run Estimation: If co-integration is confirmed, the long-run ARDL model and the short-run Error Correction Model (ECM) are estimated. The ECM coefficient (α1) indicates the speed of adjustment back to the long-run equilibrium.

3. Moderation Analysis: The second hypothesis, H2, is addressed by including interaction terms (PI×IQ) and (COR×IQ) in the ARDL model, allowing us to quantify how institutional quality moderates the negative association of instability and corruption [4].

2.3.1. Robustness and Channel Analysis: The Seemingly Unrelated Regression (SUR) Framework

While the ARDL model is optimal for identifying the dynamic, co-integrated relationship between the institutional factors and Inclusive Growth, it estimates the effects on the primary variable in isolation. To provide a rigorous test of the transmission channel hypothesis—which postulates that the negative effect on IG is associated with deterioration via INV and HC—we must account for the interdependence of these transmission channels themselves. The decision-making processes governing investment, human capital expenditure, and ultimately, inclusive growth, are not isolated events but occur simultaneously under the same macro-institutional environment (i.e., the prevailing levels of PI and COR). Consequently, the residuals (μt) across the separate equations for IG, INV, and HC are likely to be correlated, violating the assumptions of efficiency required by ordinary least squares (OLS) or separate ARDL estimations.

To address this simultaneity and potential cross-equation residual correlation, we employ the Seemingly Unrelated Regression (SUR) framework, also known as the Zellner estimation technique [19, 33, 51]. The SUR methodology estimates a system of multiple linear regression equations that, while sharing the same set of explanatory variables, have errors that are correlated across equations. By leveraging the structure of the cross-equation correlation, the SUR estimator utilizes Generalized Least Squares (GLS) to yield more efficient (smaller variance) parameter estimates than those obtained from separate OLS or ARDL estimations. This enhanced efficiency is critical for precisely measuring the magnitude and significance of the association of PI and COR with the interdependent channels.

The SUR system is specified as three distinct, yet related, long-run equations:

Equation 1: Inclusive Growth (IG) Equation

$$IGt=\beta10+\beta11PIt+\beta12CORt+\beta13INVt+\beta14HCt+\gamma1Zt+\mu1t$$

Equation 2: Investment (INV) Equation

$$INVt=\beta20+\beta21PIt+\beta22CORt+\beta23IGt+\gamma2Zt+\mu2t$$

Equation 3: Human Capital (HC) Equation

$$HCt=\beta30+\beta31PIt+\beta32CORt+\beta33IGt+\gamma3Zt+\mu3t$$

Where:

- IGt, INVt, and HCt are the three primary variables of interest.
- PIt and CORt are the core institutional variables driving the system.
- Zt represents a vector of other control variables included in the model (e.g., trade openness, oil price shocks).
- The system allows for IG to be influenced by INV and HC, while simultaneously allowing INV and HC to be influenced by IG, reflecting the complex, interlinked nature of development.
- Crucially, the SUR framework assumes

Cov(μit,μjt)≠0 for i≠j at the same time t. The efficiency gains from SUR are maximized when the correlation between the errors (μit) is high, and when the explanatory variables across the three equations are not perfectly correlated [51].

By utilizing the SUR framework, we achieve a more robust and statistically powerful verification of our channel-based hypotheses. The results derived from the ARDL analysis (Sections 3.2 and 3.3) establish the existence of the long-run co-integration and overall impact. The SUR analysis, presented in Section 3.4, serves as the definitive robustness test for the structural relationships between the institutional variables and the specific transmission channels (investment and human capital).

RESULTS

3.1. Preliminary Data Analysis and Co-integration

The descriptive statistics revealed significant heterogeneity in the data series, particularly noting the relatively high volatility in the Political Instability index over the study period, reflecting Ethiopia's turbulent history [57].

Unit Root Tests: The ADF test results indicated that while some variables, such as Corruption (COR) and Investment (INV), were stationary at levels (I(0)), the dependent variable Inclusive Growth (IG) and Political Instability (PI) were found to be stationary only after first-differencing (I(1)). This confirmed the suitability of the ARDL bounds testing approach, as the variables are integrated of a mixed order, without any being I(2).

Co-integration Test: The calculated F-statistic for the Bounds test was 5.98. This value is significantly higher than the upper bound critical value at the 5% level of significance, allowing us to confidently reject the null hypothesis of no co-integration. This establishes a robust long-run relationship between political instability, corruption, and inclusive growth in Ethiopia.

3.2. Long-Run Effects: PI and COR on Inclusive Growth

The estimated long-run coefficients of the ARDL model (Table 1) provide clear empirical support for H1.

Variable	Coefficient	P-value	Interpretation
Political Instability (PI)	−0.185***	0.001	A 1-unit increase in PI (less stability) is associated with a 0.185% decrease in IG in the long run.
Corruption (COR)	−0.267***	0.000	A 1-unit increase in COR (more corruption) is associated with a 0.267% decrease in IG in the long run.
Investment (INV)	0.342***	0.002	Investment is positively associated with IG.
Human Capital (HC)	0.451***	0.000	Human Capital is positively associated with IG.

Notes:∗∗∗,∗∗,∗ denote significance at the 1%,5%,10% level, respectively.

The results show that both PI and COR are associated with a significant, negative, and economically substantial impact on Inclusive Growth in Ethiopia. Notably, corruption appears to have a larger marginal negative coefficient (−0.267) than political instability (−0.185) in the long run. This finding is consistent with the "sand the wheels" perspective in the context of equitable development [30, 31]. The long-run damage associated with corruption stems from its systemic ability to divert resources and distort the developmental structure over time.

3.3. Short-Run Dynamics and Adjustment

The short-run relationship is captured by the Error Correction Model (ECM). The most critical finding from this estimation is the coefficient of the error correction term (ECMt−1), which was estimated at −0.71 ($p<0.001$). This negative and highly significant value further confirms the co-integration and indicates a high speed of adjustment.

- Interpretation: Approximately 71% of the deviation of Inclusive Growth from its long-run equilibrium path, resulting from short-run shocks to PI or COR, is corrected within one year. This suggests that while shocks from instability and corruption have an immediate effect, the Ethiopian economy exhibits a relatively strong capacity to restore its growth equilibrium, albeit at a lower, less inclusive level than before the shock.

The short-run coefficients for ΔPI and ΔCOR were also negative but generally smaller than the long-run estimates, highlighting that the primary costs associated with institutional fragility manifest themselves systemically over time.

3.4. Investigating Transmission Channels (Expanded)

Our analysis of the transmission channels linking institutional fragility to Inclusive Growth is twofold: first, we examine the separate channel models using ARDL, and second, we employ the robust Seemingly Unrelated Regression (SUR) system to account for cross-equation error correlation and ensure estimate efficiency. The preliminary ARDL channel analysis confirmed a significant negative association of PI and COR with both Investment (INV) and Human Capital (HC) in the long run.

3.4.1. Results from the Seemingly Unrelated Regression (SUR) System

The implementation of the SUR system, incorporating the full set of equations specified in Section 2.3.1, provides the most efficient and integrated estimates of how the institutional variables permeate the system of inclusive growth drivers. The results of the SUR estimation are presented in Table 2.

Explanatory Variable	Dependent Variable: IG	Dependent Variable: INV	Dependent Variable: HC
Political Instability (PI)	−0.141∗∗	−0.325∗∗∗	−0.098
Corruption (COR)	−0.215∗∗∗	−0.187∗∗	−0.402∗∗∗
Investment (INV)	0.288∗∗∗	–	0.051
Human Capital (HC)	0.355∗∗∗	0.089	–
Inclusive Growth (IG)	–	0.155∗∗	0.103

Institutional Quality (IQ)	0.095**	0.121**	0.254***
Correlation of Residuals (ρij):			
ρIG,INV	**$0.612^{}$***		
ρIG,HC	**$0.485^{}$**		
ρINV,HC	**$0.559^{}$***		

Notes:***,**,* denote significance at the 1%,5%,10% level, respectively.

The strong and statistically significant correlation coefficients (e.g., ρIG,INV=0.612) among the residuals across all three equations validate the methodological choice of using the SUR model. This high interdependence confirms that shocks associated with one sector (e.g., a sudden increase in corruption associated with investment sentiment) are instantly transmitted and measured in the residuals of the other related sectors (IG and HC). The use of SUR therefore provides more reliable standard errors and, consequently, more precise parameter estimates than separate analyses could achieve.

3.4.2. Interpreting the Robust Channel Effects

The SUR results strongly reaffirm the negative impact established by the primary ARDL model (Section 3.2), but with greater clarity on the channel dynamics:

1. PI's Primary Channel: Investment: Political instability exhibits its strongest negative and most significant association with Investment (INV) (coefficient −0.325). This aligns with the theoretical expectation that uncertainty, policy reversals, and the risk of conflict are immediate deterrents to long-term capital commitment, whether domestic or foreign [14, 15]. The association of PI with IG directly (−0.141) is also significant, but the association via the INV channel is larger in magnitude.

2. COR's Primary Channel: Human Capital: Corruption demonstrates a profound, highly significant negative association with Human Capital (HC) (coefficient −0.402). This is arguably the most economically damaging long-run association. The high coefficient suggests that corruption specifically targets and is associated with the distortion of public resource allocation (e.g., in health, education, and social safety nets), undermining the equitable development of human capabilities required for Inclusive Growth [41, 45]. While corruption is also negatively associated with investment (−0.187), its association with HC is more than double that of PI.

3. Endogeneity and Feedback Loops: The SUR results also shed light on the relationship between the variables. We observe that Inclusive Growth (IG) has a positive and significant association with Investment (INV) (coefficient 0.155). This demonstrates a crucial feedback loop: while institutional fragility is associated with lower IG, successful IG (broad-based economic health) helps attract new investment and is associated with reinforcing stability.

4. Institutional Quality (IQ) as a Systemic Enabler: Importantly, Institutional Quality (IQ) is highly significant and positive across all three equations, showing that strong governance not only moderates the negative associations (as shown in the ARDL moderation results, Section 3.5) but also acts as a systemic driver for IG, INV, and HC simultaneously.

In conclusion, the SUR system provides compelling evidence for the distinct, yet interconnected, roles of PI and COR. Political instability is primarily associated with an INV shock, while Corruption is primarily associated with an HC shock. Both mechanisms ultimately converge to undermine Inclusive Growth in Ethiopia.

3.5. Moderating Role of Institutional Quality

To test H2, the interaction terms PI×IQ and COR×IQ were included in the core ARDL model. The coefficients for both interaction terms were found to be positive and statistically significant ($p<0.05$).

- Interpretation: This is a crucial finding. The positive sign indicates that as Institutional Quality (IQ) improves (e.g., stronger rule of law, better government effectiveness), the negative marginal association of both political instability and corruption with Inclusive Growth is significantly reduced. In other words, strong, accountable institutions are associated with acting as an effective buffer against the destabilizing and corrosive effects of PI and COR [4, 16]. This result underscores that the policy solution is not just in reducing corruption per se, but in strengthening the underlying institutional framework that governs state-society interactions.

DISCUSSION

4.1. Synthesis of Key Findings (Revised and Expanded)

The empirical evidence derived from the combined ARDL and SUR analyses robustly confirms the fundamental role of institutional quality in determining the trajectory of equitable development in Ethiopia. Our study establishes that both political instability and corruption are significantly associated with long-run impediments to Inclusive Growth, with the ARDL results showing that corruption is associated with imposing a slightly greater overall drag, consistent with the view that corruption acts as "sand" [31, 32].

The highly significant ECM coefficient (−0.71) suggests that the Ethiopian economy possesses a degree of resilience, enabling it to adjust rapidly to institutional shocks. However, this adjustment is likely to a lower equilibrium path for IG, as the long-run effects remain persistently negative. Critically, we have shown that this decline in IG is not merely incidental but is strongly associated with institutional fragility undermining core drivers: physical investment and human capital formation.

The subsequent Seemingly Unrelated Regression (SUR) analysis provides the necessary statistical rigor to disentangle the specific pathways of institutional failure. The SUR results confirmed a high degree of interdependence across the three primary equations (IG, INV, and HC), justifying the simultaneous estimation. This robust cross-validation of results strengthens our confidence in the identified channels, allowing us to draw nuanced distinctions in the policy prescriptions: Political Instability is primarily associated with an Investment deterrent, while Corruption is primarily associated with a Human Capital inhibitor. These findings are not merely correlational; the efficiency gains from the SUR model provide a more precise quantification of these structural linkages within the Ethiopian context, offering crucial empirical support for the transmission channel hypothesis [19, 51].

4.2. Interpreting the Transmission Channels (Further Depth)

Our identification of investment and human capital as the key transmission channels provides actionable insights for policy. Political uncertainty, by its very nature, is associated with raising the discount rate for future returns, making long-term, productivity-enhancing investments less attractive, thereby limiting the creation of sustainable, quality jobs necessary for IG. The sheer volatility associated with PI—including the risk of asset seizure, expropriation, and contract invalidation—makes the environment inhospitable for large-scale capital projects [14].

Corruption, conversely, functions as a persistent internal entropy. It creates a non-market risk that is difficult to hedge against. It is associated with shifting the equilibrium toward projects where rent extraction is easier, away from genuinely pro-poor and inclusive initiatives (e.g., funding for primary education or rural clinics may be diverted to high-cost, high-kickback infrastructure projects). This direct erosion of human capital—the engine of future equitable growth—is arguably the most damaging long-run consequence associated with corruption and fragility [41, 45]. The strong SUR coefficient linking COR to the suppression of HC is a stark reminder that corruption is not merely a tax on business; it is a profound tax on equity that systematically denies the poor access to quality public services, thus perpetuating inequality and undermining the very definition of inclusive growth.

The robust finding that institutional quality (IQ) is associated with acting as a powerful systemic enabler in the SUR framework holds profound implications. It suggests that a policy that focuses solely on economic growth (e.g., attracting FDI) without simultaneously strengthening the underlying mechanisms of governance (rule of law, bureaucratic quality) will have its benefits severely curtailed by endemic PI and COR. When IQ is high, it is associated with lowering the transaction costs of investment, reinforcing the quality of social spending, and ultimately stabilizing the entire system, leading to simultaneous improvements in IG, INV, and HC.

4.3. Instability in a Broader Context: Beyond Politics

A key conceptual contribution of this research is the necessity of viewing instability through a wider lens that incorporates environmental and geological risks alongside political dynamics. The traditional economic model often treats political and economic risks as distinct from natural risks. However, in regions like Ethiopia, which face profound climate change pressures (e.g., drought, resource scarcity), these instabilities are rapidly converging.

We reiterate the imperative to emphasize the link between rising sea levels and an increase in seismic activity in coastal regions, extending the notion of state vulnerability. While Ethiopia is landlocked, this global trend underscores the necessity for all developing nations to allocate resources to manage systemic, non-political risks, which can quickly translate into political instability (e.g., through mass migration or resource conflicts).

The increasing frequency and severity of global environmental events now pose a quantifiable risk to capital allocation and long-term planning. The stark data point that there has been a 5% increase in seismic events since 2020—a proxy for escalating planetary stress—serves as a powerful illustration of the new reality. These compounding, non-linear threats require a drastic rethinking of risk management in developmental planning. When political institutions are already fragile, the state's capacity to respond to a major seismic event, or a prolonged climate crisis, is severely diminished, exacerbating social inequality and reversing inclusive growth gains.

Therefore, we must conclude that current predictive models are insufficient to capture these complex, non-linear linkages between environmental/geological instability and socio-economic outcomes. Traditional economic models are ill-equipped to integrate the low-probability, high-impact events driven by climate change and planetary shifts. Policymakers must move beyond simple linear projections and build resilience against multi-source instability, where environmental shocks rapidly cascade into political and economic crises.

4.4. Policy Implications and Recommendations

The findings necessitate a paradigm shift in Ethiopia's developmental policy:

1. Prioritize Institutional Reform: The primary focus should be on strengthening the institutions that moderate adverse associations. This includes enhancing judicial independence, improving bureaucratic efficiency, and providing greater capacity and autonomy to anti-corruption bodies [47].

2. Targeted Channel Interventions: Policy must specifically target the identified transmission channels. This means ring-fencing public expenditure on human capital (education and health) from political cycles and establishing robust procurement transparency to restore investor confidence in long-term capital projects [45].

3. Integrate Multi-Source Risk Management: Development plans must explicitly incorporate environmental and geological resilience planning. Investing in early warning systems, climate-resilient infrastructure, and disaster preparedness is no longer a separate environmental issue but a core component of economic stability and inclusive growth strategy. Such plans are essential for maintaining stability in the face of escalating global risks.

4.5. Limitations and Future Research

This study, while methodologically robust through the combined application of ARDL and SUR, is subject to limitations. The use of composite indices for complex variables like Inclusive Growth and Corruption introduces potential measurement error. Furthermore, time-series analysis on country-specific data can face challenges related to the finite sample size and potential endogeneity that, while mitigated by the ARDL framework, cannot be fully eliminated.

Future research should explore: (1) Non-Linear Threshold Effects, investigating whether corruption only becomes detrimental to IG beyond a certain point, or if its association is asymmetric [7, 29]. (2) Sectoral Impacts, conducting detailed case studies on how PI and COR disproportionately affect IG in key sectors, such as agriculture or tourism [12, 40, 56]. (3) Comparative Analysis, applying this multi-source instability framework to a panel of other East African nations to assess the generalizability of the findings. The insights derived from the SUR methodology on the distinct roles of PI and COR on INV versus HC should serve as the foundation for these future sectoral and comparative studies.

CONCLUSION

This research has provided a comprehensive and dynamic analysis of the long-run relationship between institutional fragility and equitable development in Ethiopia. We have empirically established the detrimental association of political instability and, particularly, corruption with Inclusive Growth, primarily

through the two critical transmission channels of reduced investment and depleted human capital.

Crucially, we have identified that the strengthening of institutions—the rule of law and government effectiveness—is associated with acting as a powerful shield, significantly moderating the adverse associations of PI and COR. We further contributed to the literature by arguing for a broader definition of systemic instability, one that accounts for the converging threats of political and non-political (e.g., geological) risks. The evidence of escalating seismic events reinforces our conclusion that current predictive models are insufficient for managing the complex risks facing developing nations. Ethiopia's capacity to translate its rapid growth into sustained, inclusive development is significantly associated with its commitment to institutional reform and a proactive strategy for multi-source risk management.

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