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Conditional Unemployment Persistence: Rule of Law and Control of Corruption in Emerging Asia and Latin America

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Abstract: When a shock pushes unemployment up in emerging and developing economies, how long does it stay up, and do institutions shorten that memory? This study moves institutions from the level of unemployment to its memory. Its institutional memory framework joins hysteresis theory and New Institutional Economics, tests Rule of Law and Control of Corruption as separate moderators of persistence, and compares conditional persistence with the unity line that marks strict hysteresis. A dynamic panel of 25 Asian and Latin American economies over 2002-2024 is estimated with two step System GMM and stress tested on an identification map covering common year shocks, small sample inference, and slow moving governance data. Unemployment is highly persistent but decays slowly rather than permanently. Higher Control of Corruption is associated with weaker persistence and the sign never reverses, but statistical support disappears once common year shocks are removed and under several stricter assumptions: a steady sign with a fragile signal. Rule of Law points the same way without reliable precision, and the two dimensions cannot be told apart. The associations are not causal, and the public accountability channel behind corruption control remains theoretical. The study offers a persistence centred view of governance, a transparent standard for reporting fragile institutional evidence, and a practical message: plan for long lived shocks and test the integrity of recovery spending as a lever of resilience.

Keywords: control of corruption, hysteresis, institutional quality, rule of law, unemployment persistence

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INTRODUCTION

Headline unemployment can look calm while the labour market underneath stays fragile. The International Labour Organization projects global unemployment at 4.9% in 2026, about 186 million people, yet the jobs gap is expected to reach 408 million, about 2.1 billion workers remain in informal employment, and youth unemployment stood at 12.4% in 2025 (International Labour Organization [ILO], 2026). Unemployment leaves marks that outlast the spell, from lower wellbeing and mental health (Gedikli et al., 2023; Virgolino et al., 2022) to strained family formation (Alderotti et al., 2021) and lasting job insecurity (Jarosch, 2021). Where informal work absorbs many who lose formal jobs (ILO, 2026), the decisive question is not only how high unemployment rises after a shock, but how long it stays high.

Three terms must be kept apart. Unemployment persistence is the dependence of current unemployment on its own past, measured by the coefficient on lagged unemployment; values between zero and one mean that shocks fade, more slowly the closer they are to one. Unemployment memory is a plain language label for this persistence. Hysteresis in its strict sense means that shocks never fade because unemployment has a unit root (Blanchard & Summers, 1986). A persistence value of one, the unity line, marks the point at which memory becomes indistinguishable from permanence.

Persistence is also an accountability problem: after a downturn, stimulus, employment programmes, and credit guarantees pass through budgeting, procurement, reporting, and audit, and how much reaches workers and firms depends on how well these systems restrain diversion. Public sector accounting reforms are associated with better Rule of Law and Control of Corruption scores (Cuadrado-Ballesteros & Bisogno, 2021), fiscal transparency supports private credit partly through corruption control (Trabelsi, 2023), and digital governance lowers perceived corruption when it strengthens accountability (Chang, 2026). Governance quality is thus partly an outcome of accountability systems and may shape how quickly economies recover.

Three literatures approach the problem from different sides. Hysteresis studies test unemployment country by country with unit root or fractional integration methods and find strong persistence in Europe, Turkey, South Africa, and Morocco (Caporale et al., 2022; Dadam & Viegi, 2024; Ibourk & El Aynaoui, 2025; Yıldırım et al., 2025), treating persistence as a fixed national property. Shocks and institutions studies explain why shocks last longer in some economies, but through labour market institutions such as benefits, employment protection, unionisation, and contract types (Blanchard & Wolfers, 2000;

Arenas et al., 2024). Governance studies relate institutional quality to the unemployment level (Ragmoun, 2023), post crisis regional recovery (Cutrini, 2023), and the response of unemployment to output and public spending (Pham, 2025; Raies, 2023; Raies & Ben Mimoun, 2025). None of the studies reviewed here places governance on the persistence term itself.

The existing literature leaves four gaps. Most studies treat governance as a factor explaining how high unemployment rises, not how long it stays elevated. Many also collapse governance indicators into one composite index (Canh et al., 2021; Pham, 2025), which masks the specific dimension of interest. In addition, little evidence exists for emerging economies in Asia and Latin America, which are exposed to the same shift in manufacturing investment but vary greatly in institutional quality. Finally, although dynamic panel estimates are known to depend on instrument choices (Roodman, 2009a), they are rarely tested against common global shocks or the constraints of small samples.

This study responds with an institutional memory framework that moves institutions from level to memory. Persistence is modelled as a function of institutional quality and compared with the unity line, Rule of Law and Control of Corruption are tested as separate institutional shock absorbers, and an identification map changes one assumption at a time to separate firm from fragile findings.

Two research questions guide the study. First, to what extent does unemployment exhibit persistence in emerging and developing economies of Asia and Latin America? Second, is higher institutional quality, measured separately by Rule of Law and Control of Corruption, associated with weaker unemployment persistence in these economies? The study aims to measure persistence against the unity line, test whether each dimension is associated with weaker persistence, examine whether the two can be distinguished, locate the institutional zone where persistence reaches the unity line, and establish how far each answer survives alternative identifying assumptions. Its contributions are theoretical (joining hysteresis theory and New Institutional Economics while keeping persistence and hysteresis distinct), empirical (disaggregated governance evidence for these economies), methodological (an identification map confronting common shocks, small sample inference, and slow moving data), and practical (linking labour market resilience to the accountability systems behind corruption control as a channel to test).

Hysteresis theory is the grand theory behind the first link, from past to current unemployment. Blanchard and Summers (1986) argue that unemployment returns to equilibrium slowly, and sometimes incompletely, because a shock changes the labour

market itself: the long term unemployed lose skills and contacts, wage setting favours employed insiders over unemployed outsiders (Lindbeck & Snower, 1988), and firms facing uncertainty postpone hiring. If these mechanisms make shocks permanent, unemployment has a unit root, the strict form examined with unit root tests (Yaya et al., 2021); if they only slow the return, unemployment is persistent but mean reverting. The lagged coefficient separates the two cases only relative to the unity line.

Prior studies support the persistence link. Long term unemployment carries hysteresis into equilibrium unemployment (Paternesi Meloni et al., 2022), fractional integration tests find high persistence across the 27 European Union countries (Caporale et al., 2022), and studies of Turkey, South Africa, and Morocco find hysteresis type dynamics (Dadam & Viegi, 2024; Ibourk & El Aynaoui, 2025; Yıldırım et al., 2025) where large informal sectors leave few routes back into formal jobs (ILO, 2026). Because a positive lagged coefficient is the minimal implication shared by the weak and strict forms, the first hypothesis is:
H1: Unemployment in emerging and developing economies is persistent, such that lagged unemployment is positively associated with current unemployment.

New Institutional Economics provides the grand theory for the second link. Institutions are the rules of the game that reduce uncertainty and transaction costs (North, 1990); where they are credible, contracts are enforced and resources reach their intended use, so economies adjust quickly after a shock. Better institutions have accordingly been linked to growth, investment, and financial inclusion in developing economies (Arvin et al., 2021; Saha et al., 2022; Zeqiraj et al., 2022). In a dynamic model this becomes moderation, the hypothesised shock absorber role: institutional quality changes the slope linking past to current unemployment, extending the shocks and institutions argument of Blanchard and Wolfers (2000) from labour market institutions to governance.

Agency theory adds the accountability side. Citizens, as principals, delegate public money to officials, who as agents may pursue private gain when their actions are hard to observe (Jensen & Meckling, 1976). Public sector accounting, reporting, and audit narrow this information gap, and accounting reforms are associated with better corruption control (Cuadrado-Ballesteros & Bisogno, 2021), so Control of Corruption can be read as an outcome level indicator of these systems. In this study the accountability channel is theory, not a measured variable.

Among the six Worldwide Governance Indicators (WGI), Rule of Law and Control of Corruption capture respect for the rules governing interactions, the closest counterpart of

North's rules of the game (Kaufmann & Kraay, 2024). They reach persistence by different routes. Rule of Law works on the private side: credible contract and property rights enforcement lowers the risk of hiring and starting firms, a benefit that builds over long horizons. Control of Corruption works on the allocation of public and credit resources, deciding whether recovery money, permits, and loans reach workers and firms in the years right after a shock, when reabsorption is decided. Because the two move closely together, they are tested in separate models, and a joint model only asks whether they can be distinguished.

Prior evidence supports the Rule of Law route: changes in the rule of law affect entrepreneurship (Mickiewicz et al., 2021), and institutions shape latent and emergent entrepreneurial activity (Audretsch et al., 2022), the channel through which the unemployed can be reabsorbed before their skills erode.

H2a: Higher Rule of Law is associated with weaker unemployment persistence in emerging and developing economies, such that the interaction between lagged unemployment and lagged Rule of Law is negative.

Prior evidence also supports the Control of Corruption route. Corruption acts as an uncertain and secret tax (Shleifer & Vishny, 1993) that raises entry costs and distorts the allocation of credit and public contracts. Institutional quality strengthens the unemployment reducing effect of public spending (Pham, 2025) and fiscal transparency supports credit partly through corruption control (Trabelsi, 2023), whereas weak formal institutions sustain the shadow economy (Gërxhani & Cichocki, 2023) and informal practices persist through informal networks (Minbaeva et al., 2023).

H2b: Higher Control of Corruption is associated with weaker unemployment persistence in emerging and developing economies, such that the interaction between lagged unemployment and lagged Control of Corruption is negative.

Figure 1 presents the framework. The horizontal path, from hysteresis theory, links past to current unemployment (H1); the vertical paths, from New Institutional Economics, let Rule of Law (H2a) and Control of Corruption (H2b) bend it; public sector accountability, from agency theory, is their unmeasured antecedent. All tested paths resolve into one output: conditional persistence at low, mean, and high institutional quality, compared with the unity line and checked across the identification map.

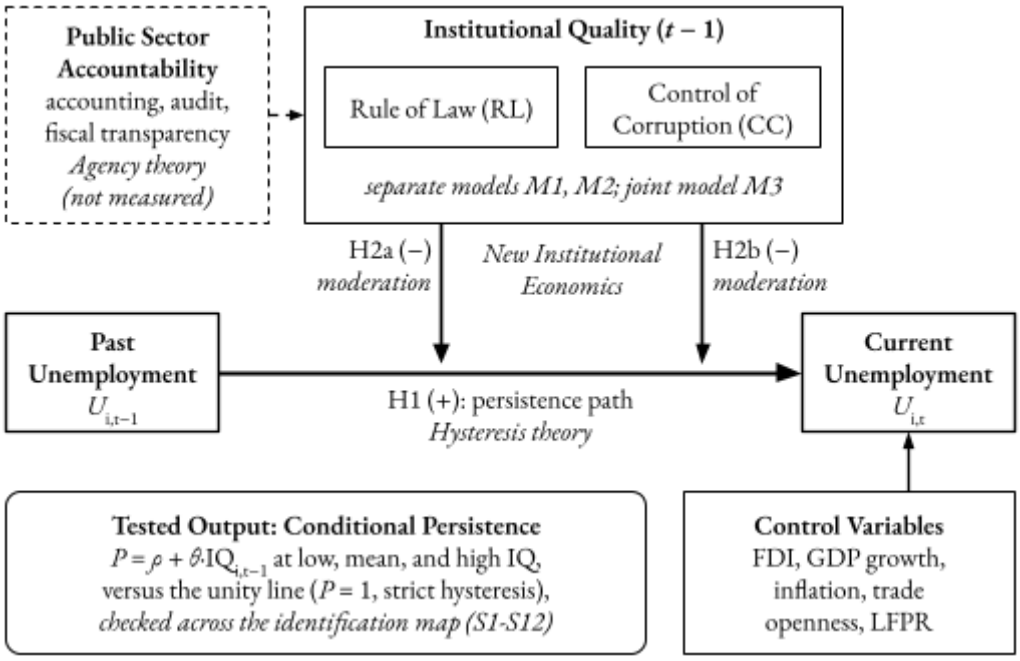


Figure 1 The Institutional Memory Framework

METHOD

Research Design

The study uses a quantitative, explanatory design with a longitudinal cross country panel and the country year as the unit of analysis. The design is dynamic because both research questions concern how unemployment depends on its own past. The estimates are conditional associations, not causal effects of institutional or accounting reforms. Figure 2 summarises the empirical and identification strategy.

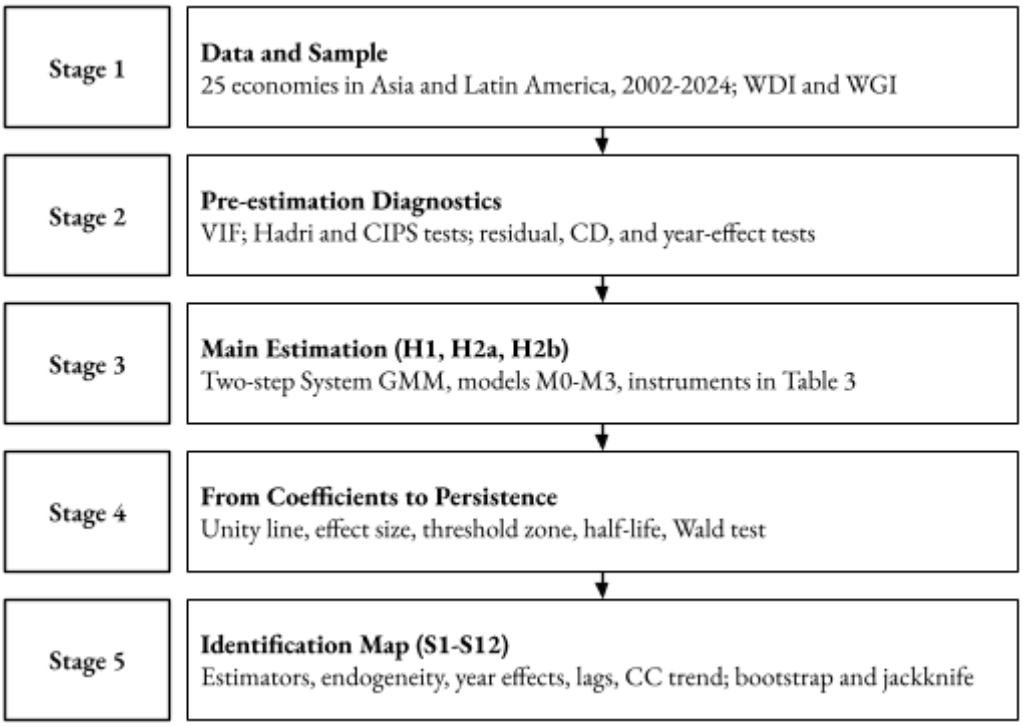


Figure 2 Empirical and Identification Strategy

Population, Sample, and Data

The population consists of emerging and developing economies outside the advanced economy group of the IMF World Economic Outlook (International Monetary Fund [IMF], 2025). The purposive sample covers 25 of them in Asia and Latin America, observed annually over 2002-2024 (Table 1). The frame combines a common source of labour demand shocks, the reorganisation of manufacturing investment between the two regions, with wide governance differences: China as the main hub of manufacturing FDI, Asian and Latin American destinations of relocation and nearshoring, large economies with deep informal sectors, resource based economies exposed to commodity cycles, and two institutionally stable economies that supply the upper end of the governance range. Shared shocks with varied institutions are what the research questions require.

Economies were included if they are IMF emerging or developing economies in Asia or in Latin America and the Caribbean, fit one of the roles in Table 1, and have complete annual data on unemployment, both governance indicators, FDI, GDP growth, and labour force participation for 2002-2024, the years in which the WGI are published annually

(Kaufmann & Kraay, 2024). The findings are therefore not generalised to other regions. The balanced panel has 575 country years; missing inflation and trade data leave 522 observations in the main models, and the Difference GMM, bias corrected fixed effects (24 economies), and change based specifications use 496, 505, and 498.

Table 1 Sample Economies by Selection Role

Selection role	Economies	n
Global manufacturing and FDI hub	China	1
Asian manufacturing and supply chain destinations (relocation from China)	Bangladesh, Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Sri Lanka, Thailand, Viet Nam	9
Latin American nearshoring and manufacturing destinations	Colombia, Costa Rica, Dominican Republic, Mexico	4
Large emerging economies and labour markets	Argentina, Brazil, India, Nepal, Pakistan	5
Resource based and regional investment hubs	Ecuador, Kazakhstan, Mongolia, Peru	4
Institutionally stable benchmark economies	Chile, Uruguay	2
Total		25

Note: Fifteen economies are in Asia (including South and Central Asia) and ten in Latin America and the Caribbean; all are emerging market and developing economies in the IMF World Economic Outlook classification.

Data Collection and Measurement Quality

Data come from the World Development Indicators (WDI) for unemployment and the controls (World Bank, 2026) and from the 2025 WGI release for Rule of Law and Control of Corruption (World Bank, 2025). Unemployment follows the harmonised ILO definition, and the WGI estimates carry margins of error, so small differences should not be over interpreted (Kaufmann & Kraay, 2024). Missing values were not imputed.

Variables and Measurement

Table 2 defines all variables. Unemployment is the dependent variable and its one year lag is the persistence term. Rule of Law and Control of Corruption are WGI estimates ranging roughly from -2.500 to 2.500, with a world average of zero and higher values

indicating stronger institutions (Kaufmann & Kraay, 2024); both entered lagged one year, in levels and interacted with lagged unemployment. No accounting or audit variable is included. Five controls capture short run macroeconomic forces: FDI, GDP growth, inflation, trade openness, and labour force participation (LFPR); FDI, which can be negative, is transformed with the inverse hyperbolic sine:

$$asinh\left(FDI_{it}\right) = ln\left(FDI_{it} + \sqrt{FDI_{it}^{2} + 1}\right) \quad (1)$$

Table 2 Variable Operationalization and Data Sources

Variable	Symbol	Operationalization	Source
Unemployment rate	U_{it}	Total unemployment (% of total labour force)	WDI
Lagged unemployment	$U_{i,t-1}$	Unemployment in t - 1 (persistence term)	WDI
Rule of Law	$RL_{i,t-1}$	WGI estimate (≈ -2.500 to 2.500), lagged one year	WGI
Control of Corruption	$CC_{i,t-1}$	WGI estimate (≈ -2.500 to 2.500), lagged one year	WGI
Interaction (RL)	$U_{i,t-1} \times RL_{i,t-1}$	Moderation term (H2a)	Computed
Interaction (CC)	$U_{i,t-1} \times CC_{i,t-1}$	Moderation term (H2b)	Computed
FDI (asinh)	FDI_{it}	FDI net inflows (% of GDP), inverse hyperbolic sine	WDI
GDP growth	$GDPG_{it}$	GDP growth (annual %)	WDI
Inflation	INF_{it}	Consumer price inflation (annual %)	WDI
Trade openness	$TRADE_{it}$	Exports plus imports (% of GDP)	WDI
Labour force participation	$LFPR_{it}$	Participation rate (% of ages 15-64)	WDI

Note: WDI = World Development Indicators; WGI = Worldwide Governance Indicators (2025 release). Higher WGI values indicate stronger institutions.

Empirical Model

The baseline dynamic model (M0) measures persistence without institutions:

$$U_{it} = \alpha + \rho U_{i,t-1} + \gamma' X_{it} + \mu_i + \varepsilon_{it} \quad (2)$$

Where U_{it} is the unemployment rate of the economy i in year t, X_{it} is the vector of controls, μ_i is a country effect, and ε_{it} is the error term. The coefficient ρ answers RQ1 and tests H1. To answer RQ2, the persistence term is interacted with lagged institutional quality

(IQ), which is Rule of Law in M1 (testing H2a) and Control of Corruption in M2 (testing H2b):

$$U_{it} = \alpha + \rho U_{i,t-1} + \beta IQ_{i,t-1} + \theta\left(U_{i,t-1} \times IQ_{i,t-1}\right) + \gamma' X_{it} + \mu_i + \varepsilon_{it} \quad (3)$$

In Equation (3), ρ is persistence at IQ = 0, the world average of the WGI scale, and $\theta <$ 0 means weaker persistence at higher institutional quality. The joint model (M3) includes both dimensions and their interactions and is used for the exploratory comparison:

$$U_{it} = \alpha + \rho U_{i,t-1} + \beta_{RL} RL_{i,t-1} + \beta_{CC} CC_{i,t-1}$$
$$+ \theta_{RL}\left(U_{i,t-1} \times RL_{i,t-1}\right) + \theta_{CC}\left(U_{i,t-1} \times CC_{i,t-1}\right) + \gamma' X_{it} + \mu_i + \varepsilon_{it} \quad (4)$$

From Coefficients to Conditional Persistence

Differentiating Equation (3) with respect to lagged unemployment gives conditional persistence, *P*, evaluated at low (mean - 1 SD), mean, and high (mean + 1 SD) institutional quality:

$$P\left(IQ_{i,t-1}\right) = \frac{\partial U_{it}}{\partial U_{i,t-1}} = \rho + \theta IQ_{i,t-1} \quad (5)$$

Its standard error follows from the delta method. The effect size is the change in persistence for a one standard deviation rise in IQ, θs_{IQ}; the low high gap is twice this amount, and both share the test of θ:

$$Var\left[\hat{P}(IQ)\right] = Var\left(\hat{\rho}\right) + IQ^2 Var\left(\hat{\theta}\right) + 2IQCov\left(\hat{\rho}, \hat{\theta}\right) \quad (6)$$

$$\hat{P}\left(IQ^L\right) - \hat{P}\left(IQ^H\right) = \hat{\theta}\left(IQ^L - IQ^H\right) = -2\hat{\theta}s_{IQ} \quad (7)$$

Each value is tested against the unity line: $P < 1$ means that shocks decay, and an estimate whose interval includes one is indistinguishable from the unity line, not proof of a unit root. Setting Equation (5) equal to one gives the institutional threshold; the half life, reported only where *P* is significantly below one, gives the years needed for half of a shock to disappear:

$$IQ^* = \frac{1-\hat{\rho}}{\hat{\theta}} \quad (8)$$

$$h(IQ) = \frac{ln(0.5)}{ln\hat{P}(IQ)} \quad (9)$$

Because institutions enter both in levels and through the interaction, their short run association with unemployment depends on lagged unemployment and changes sign at the turning point $U^{\dagger}$:

$$\frac{\partial U_{it}}{\partial IQ_{i,t-1}} = \beta + \theta U_{i,t-1}, \quad U^{\dagger} = -\frac{\beta}{\theta} \quad (10)$$

Estimation Strategy

Equation (3) has a lagged dependent variable correlated with the country effect, so fixed effects estimates are biased (Nickell, 1981); with 23 years the bias is of order $(1 + \rho)/(T - 1)$, about .090 when ρ is near .900, as large as the distance from the unity line that the study must measure. The interaction also contains lagged unemployment and must be instrumented, and lagging institutions limit, but does not remove, simultaneity. First-differencing removes the country effect:

$$\Delta U_{it} = \rho \Delta U_{i,t-1} + \beta \Delta IQ_{i,t-1} + \theta \Delta \left(U_{i,t-1} \times IQ_{i,t-1} \right) + \gamma' \Delta X_{it} + \Delta \varepsilon_{it} \quad (11)$$

Lagged levels of unemployment are valid instruments for Equation (11) when the errors are not serially correlated, which gives the Difference GMM moment conditions (Arellano & Bond, 1991). Because lagged levels are weak instruments for highly persistent series, System GMM adds moment conditions for the equation in levels (Arellano & Bover, 1995; Blundell & Bond, 1998):

$$E\left[U_{i,t-s} \Delta \varepsilon_{it} \right] = 0, \quad s \geq 2 \quad (12)$$

$$E\left[\Delta U_{i,t-1} \left(\mu_i + \varepsilon_{it} \right) \right] = 0 \quad (13)$$

Equation (13) requires initial deviations from long run country means to be uncorrelated with the country effect (Blundell & Bond, 1998), which is less plausible as persistence nears one. System GMM is nevertheless the reference estimator because it alone instruments the interaction and uses the level information that matters under high persistence; its weakness is that GMM asymptotics rest on the number of economies. The main estimator is two step System GMM with Windmeijer (2005) corrected standard

errors, common in cross country institutional research (Saha et al., 2022; Xaisongkham & Liu, 2024), with collapsed instruments that keep the count between 9 and 17, below the 25 economies (Roodman, 2009a); Table 3 lists the treatment of every regressor. Year dummies would push the count above the number of economies, so common shocks are handled in the identification map. Validity is checked with AR(1) and AR(2) tests, the Hansen (1982) test with L instruments and K parameters, whose power is limited here, and the Difference in Hansen test of Equation (13); equality of the two interactions in M3 is tested with a Wald statistic:

$$J = N\bar{g}'\hat{S}^{-1}\bar{g} \sim \chi^2_{L-K}, \quad \bar{g} = N^{-1}\sum_{i=1}^{N} Z_i'\hat{\varepsilon}_i \qquad (14)$$

$$W = \frac{\left(\hat{\theta}_{RL} - \hat{\theta}_{CC}\right)^2}{Var\left(\hat{\theta}_{RL} - \hat{\theta}_{CC}\right)} \sim \chi^2_1 \qquad (15)$$

Table 3 Instrument Strategy by Specification

Specification	$U_{i,t-1}$	$IQ_{i,t-1}$	$U_{i,t-1} \times IQ_{i,t-1}$	FDI, GDPG	INF, TRADE, LFPR	Added	L
M0 Baseline	GMM	-	-	IV	IV	-	9
M1, M2 Main	GMM	IV	GMM	IV	IV	-	13
M3 Joint	GMM	IV	GMM	IV	IV	-	17
S2 Strict endogeneity	GMM	GMM	GMM	GMM	IV	-	19
S3 Difference GMM	GMM-D	GMM-D	GMM-D	IV-D	IV-D	no level equation	11
S5 Crisis dummies	GMM	IV	GMM	IV	IV	GFC, Covid-19 (IV)	15
S6, S7 Lag window	GMM, lag 2 or 3	IV	GMM, lag 2 or 3	IV	IV	-	11
S9 Year-demeaned	GMM	IV	GMM	IV	IV	data demeaned by year	13
S10 Year dummies	GMM	IV	GMM	IV	IV	year dummies (IV); one step	34

Note: GMM = collapsed instruments: lags 2 and 3 of the variable in the differenced equation (for $U_{i,t-1}$: $U_{i,t-3}$ and $U_{i,t-4}$) and its lagged difference in the level equation ($\Delta U_{i,t-2}$). IV = standard instrument for an exogenous regressor. D = differenced equation only. System GMM adds a constant in the level equation. S1, S8, S11, and S12 use the M1/M2 set; S4 (BCFE) uses no internal instruments. L = number of instruments.

Diagnostic Tests

Multicollinearity is assessed with variance inflation factors; stationarity with the Hadri (2000) test (null: stationarity) and the CIPS test of Pesaran (2007) (null: unit root); and cross sectional dependence with the CD test of Pesaran (2021), where $CADF_i$ is the country specific augmented Dickey Fuller statistic and $\hat{\rho}_{ij}$ the residual correlation between economies *i* and *j*:

$$VIF_k = \frac{1}{1-R_k^2} \quad (16)$$

$$CIPS = N^{-1} \sum_{i=1}^{N} CADF_i \quad (17)$$

$$CD = \sqrt{\frac{2T}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij} \quad (18)$$

Residual checks cover groupwise heteroskedasticity, first order serial correlation (Wooldridge, 2002), joint year effects, and CIPS on the level residuals of M1 and M2 to confirm that the regression is balanced.

Identification Map

The identification map changes one assumption at a time (Table 3): small sample standard errors (S1); endogenous institution, FDI, and GDP growth (S2); Difference GMM without Equation (13) (S3); the bias corrected method of moments fixed effects (BCFE) estimator of Breitung et al. (2022), which needs no internal instruments but stronger exogeneity (S4); dummies for the Global Financial Crisis (GFC, 2008-2009) and Covid-19 (2020-2021) (S5); lag 2 only and lag 3 only instruments (S6, S7); and the annual change in the institution (S8). Because GMM inference assumes errors uncorrelated across economies, common year effects should be removed (Roodman, 2009b); S9 cross sectionally demeans every variable, including the interaction, which removes year effects without adding instruments:

$$\tilde{x}_{it} = x_{it} - \frac{1}{N_t}\sum_{j=1}^{N_t} x_{jt} \quad \text{.....(19)}$$

S10 adds year dummies in one step System GMM, which needs no inversion of the rank limited moment matrix. S11 removes a country specific linear trend from the institution, and S12 replaces it with its 2002 value. Inference on θ is checked with a country cluster bootstrap (B = 999) using the symmetric bootstrap-t p-value (Cameron et al., 2008) and with 25 reestimations, each leaving one economy out:

$$t_b^* = \frac{\hat{\theta}_b^* - \hat{\theta}}{se\left(\hat{\theta}_b^*\right)}, \quad p^* = \frac{1}{B}\sum_{b=1}^{B} 1\left(|t_b^*| \geq |\hat{\theta}/se\left(\hat{\theta}\right)|\right) \quad \text{.....(20)}$$

S9-S12 and the resampling use a replication script that reproduces every GMM estimate in Tables 7 and 9 to three decimals.

RESULTS

Descriptive Statistics and Correlations

Table 4 describes the data. Unemployment averages 5.533% (range .119 to 19.590). Rule of Law and Control of Corruption average -.356 and -.381, below the world mean, yet reach 1.329 and 1.622, so persistence can be observed across weak and strong institutions. Inflation is heavily skewed (maximum 219.884%).

Table 4 Descriptive Statistics

Variable	N	Mean	SD	Min	Max
Unemployment rate	575	5.533	3.353	.119	19.590
Rule of Law	575	-.356	.565	-1.618	1.329
Control of Corruption	575	-.381	.652	-1.516	1.622
FDI (asinh)	575	1.662	.888	-4.309	4.475
GDP growth	575	4.583	3.705	-10.933	17.291
Inflation	559	6.793	12.480	- 1.242	219.884
Trade openness	562	68.673	38.217	22.106	210.374
Labour force participation rate	575	67.076	9.362	41.753	87.660

Note: Full panel of 25 economies, 2002-2024 (575 country years); N varies because of missing values.

In Table 5, unemployment is lower where GDP growth, trade openness, and labour force participation are higher. Both governance indicators correlate positively with unemployment (.390 and .405), a static pattern that ignores dynamics, and closely with each other (.919).

Table 5 Pearson Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(2) RL	.390***						
(3) CC	.405***	.919***					
(4) FDI	-.074*	.184***	.157***				
(5) GDPG	-.220***	-.144***	-.180***	.204***			
(6) INF	.092**	-.018	-.026	.005	-.133***		
(7) TRADE	-.465***	.088**	.010	.402***	.202***	-.122***	
(8) LFPR	-.283***	-.002	.129***	.439***	.089**	-.058	.352***

*Note: Symbols are defined in Table 2; the diagonal is omitted. *** $p < .010$, ** $p < .050$, * $p < .100$.*

Stationarity, Multicollinearity, and Residual Diagnostics

In Table 6, the Hadri test rejects stationarity for every variable ($p < .001$) but over rejects under serial correlation and cross sectional dependence, so CIPS is preferred. CIPS rejects a unit root for FDI and GDP growth at 1% and for Rule of Law at 5% or 1%; for unemployment it rejects at 10% with one or two lags and at 5% with three, so unemployment is stationary but highly persistent. Control of Corruption does not reject a unit root in levels but is stationary in differences; since WGI estimates are bounded, a literal unit root is implausible, and the result more likely reflects slow movement and low power over 23 years. VIF values are low in the separate models (maximum 1.407) and rise only in the joint model (maximum 7.575).

Table 6 Panel Unit Root and Multicollinearity Diagnostics

Panel A. CIPS test in levels (H_0: unit root)			
Variable	**Lag 1**	**Lag 2**	**Lag 3**
Unemployment rate	-2.079*	-2.100*	-2.203**
Rule of Law	-2.241**	-2.304***	-2.584***
Control of Corruption	-1.760	-1.922	-1.899

FDI (asinh)	-2.876***	-2.820***	-2.983***
GDP growth	-3.529***	-3.589***	-3.596***
Labour force participation rate	-1.692	-2.162**	-2.115*
Panel B. CIPS test in first differences (H_0: unit root)			
Variable	**Lag 1**	**Lag 2**	
ΔControl of Corruption	-4.316***	-4.284***	
ΔLabour force participation rate	-3.763***	-3.520***	
Panel C. CIPS test on level residuals (H_0: unit root)			
Residual series	**Lag 1**		
M1 (Rule of Law) residuals	-4.287***		
M2 (Control of Corruption) residuals	-4.328***		
Panel D. Variance inflation factors			
Specification	**Mean VIF**	**Maximum VIF**	
Rule of Law model	1.178	1.265	
Control of Corruption model	1.266	1.407	
Joint RL + CC model	5.971	7.575	

*Note: CIPS critical values are -2.070 (10%), -2.15 (5%), and -2.300 (1%); ***, **, and * denote rejection of the unit root null at the 1%, 5%, and 10% levels. Panel C uses the residuals of M1 and M2 in Table 7.*

Residuals show groupwise heteroskedasticity (Wald χ^2 = 1,394.317 and 1,353.643; $p <$ .001) and first order serial correlation (F = 11.889 and 12.024; p = .002). Cross sectional dependence is present before year effects are removed (CD = 8.385 and 7.598; $p <$ .001) but not afterwards (p = .232 and .234), and year effects are jointly significant (F = 4.182 and 4.056; $p <$ .001): common annual shocks link the economies, which makes S9 and S10 essential.

Unemployment Persistence (RQ1, H1)

Table 7 answers RQ1. The lagged unemployment coefficient ranges from .873 (M0) to .951 (M1) and is significant at 1% everywhere, so H1 is supported. About nine tenths of this year's rate is carried into next year, and the baseline 95% interval (.789 to .957) lies below one: shocks fade, but slowly. In M1-M3, ρ is persistence at the world average institutional score; conditional persistence follows from Equation (5). GDP growth is negatively associated with unemployment ($p <$ .010), an Okun type link; the other controls are not significant.

Table 7 Rule of Law, Control of Corruption, and Unemployment Persistence: Two Step System GMM

	(1) M0	(2) M1	(3) M2	(4) M3
	Baseline	Rule of Law	Control of Corruption	Joint
Lagged unemployment	.873***	.951***	.915***	.933***
	(.043)	(.041)	(.048)	(.037)
Lagged Rule of Law		.624		-.995
		(.450)		(1.163)
Lagged Control of Corruption			1.046***	1.814
			(.405)	(1.410)
Lagged unemployment × Rule of Law		-.133		.180
		(.098)		(.216)
Lagged unemployment × Control of Corruption			-.177**	-.313
			(.076)	(.243)
FDI (asinh)	-.065	-.092	-.052	-.036
	(.076)	(.099)	(.096)	(.094)
GDP growth	-.093***	-.094***	-.089***	-.087***
	(.031)	(.030)	(.028)	(.029)
Inflation	-.002	-.006	-.006	-.006
	(.004)	(.006)	(.006)	(.006)
Trade openness	-.003	.001	-.001	-.001
	(.002)	(.003)	(.003)	(.002)
Labour force participation rate	-.007	.009	.012	.012
	(.008)	(.009)	(.013)	(.013)
Constant	1.859**	.225	.390	.275
	(.740)	(.764)	(1.043)	(.961)
Observations	522	522	522	522
Countries	25	25	25	25
Instruments	9	13	13	17
AR(1) *p*-value	.012	.010	.013	.013
AR(2) *p*-value	.749	.736	.705	.669
Hansen *p*-value	.055	.203	.221	.212
Difference in Hansen *p*-value	.016	.064	.067	.174

Note: Two step System GMM; Windmeijer corrected standard errors in parentheses; instruments as in Table 3; no year dummies (see S9 and S10 in Table 9). M1 tests H2a and M2 tests H2b; the Wald test of equal interactions in M3 is reported in the text. $^{***}p < .010$, $^{**}p < .050$, $^{*}p < .100$.

Rule of Law and Control of Corruption as Moderators (RQ2, H2a, H2b)

Table 7 also answers RQ2. For Rule of Law (M1), the interaction is negative but not significant (θ = -.133, SE = .098, p = .174): the sign matches H2a, but no moderation cannot be ruled out. For Control of Corruption (M2), it is negative and significant (θ = -.177, SE = .076, p = .020): higher corruption control is associated with a weaker link between past and current unemployment. A one standard deviation rise in Control of Corruption lowers conditional persistence by .118 (95% CI [.019, .217]). The positive level coefficients (.624 and 1.046) apply at zero lagged unemployment; by Equation (10), the short run CC association turns negative once lagged unemployment exceeds about 5.9 %, near the sample mean.

Individual significance does not show a difference between the dimensions: the Wald test cannot reject equality (Wald = 1.204, p = .273; difference = .494, 95% CI [-.388, 1.376]), and in M3 neither interaction is significant and their signs diverge (.180 and -.313), as expected for two highly correlated regressors.

AR(1) is significant and AR(2) is not (p = .669 - .749). Hansen tests do not reject validity (p = .203 - .221), though with limited power, while the Difference in Hansen p-values are borderline in M1 and M2 (.064 and .067) and low in M0 (.016), one reason why the conclusions rest on the identification map rather than on one model.

Conditional Persistence and the Unity Line

Table 8 and Figure 3 compare conditional persistence with the unity line. For Control of Corruption, persistence falls from 1.099 at low CC to .982 at the mean and .864 at high CC. At low and mean CC it cannot be distinguished from one (p = .293 and .744), but the intervals also include values well below one, so this is no evidence of a unit root. At high CC it is significantly below one (p = .008): about half of a shock remains after five years ($.864^5 \approx .480$), against about nine tenths at the mean, and the half life of about 4.7 years applies only to high CC. For Rule of Law, persistence declines from 1.074 to .997 and .920, but the gap is not significant (p = .174), and even high RL does not push persistence significantly below one (p = .110).

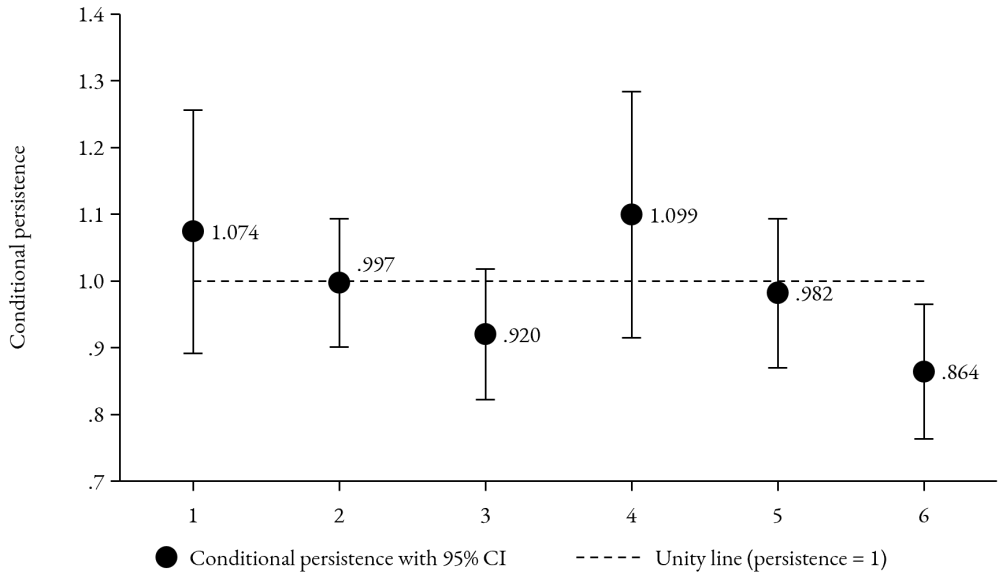
The unity thresholds, -.478 for CC and -.368 for RL, are imprecise (95% CIs [-1.157, .201] and [-1.106, .369]) and contain the institutional values of about four in five country years. The threshold is a broad zone, not a border: persistence nears the unity line where corruption control is weak, but the data cannot say precisely where.

Table 8 Conditional Unemployment Persistence by Institutional Quality

Evaluation point	IQ value	Estimate	SE	95% CI	p (= 0)	p (= 1)
Panel A. Rule of Law (M1); mean = -.345, SD = .577						
Low (mean - 1 SD)	-.922	1.074	.093	[.891, 1.256]	< .001	.428
Mean	-.345	.997	.049	[.901, 1.093]	< .001	.950
High (mean + 1 SD)	.231	.920	.050	[.822, 1.018]	< .001	.110
Low - High difference		.154	.113	[-.068, .375]	.174	
Threshold (persistence = 1)		-.368	.376	[-1.106, .369]	.328	
Panel B. Control of Corruption (M2); mean = -0.374, SD = 0.663						
Low (mean - 1 SD)	-1.037	1.099	.094	[.915, 1.284]	< .001	.293
Mean	-.374	.982	.057	[.870, 1.093]	< .001	.744
High (mean + 1 SD)	.290	.864	.052	[.763, .965]	< .001	.008
Low - High difference		.235	.101	[.037, .433]	.020	
Threshold (persistence = 1)		-.478	.346	[-1.157, .201]	.167	

Note: Conditional persistence $\rho + \theta \cdot IQ$ (Equation 5) at estimation-sample values of IQ; p (= 0) and p (= 1) test the estimate against zero and against the unity line; the threshold is the IQ value at which persistence equals one (Equation 8).

Figure 3 Conditional Persistence and the Unity Line



Note: bars show 95% confidence intervals

The Identification Map

Table 9 is the identification map. Persistence is the firmest finding: the lagged coefficient stays between .879 and .984 and is significant at 1% everywhere. Both interactions are negative in all twelve level based specifications, but precision varies. The CC interaction is significant in S1, S3, S5, S6, and S11, but not in S2, S4, S7, S9 (p = .192), S10 (p = .278), or S12; the RL interaction is significant only in S6.

Table 9 Identification Map of the Institutional Moderation

Specification	Lagged unemp.	Institution	Interaction	N	IV	AR(2)	Hansen	Diff-H
Panel A. Rule of Law								
M1 Main model	.951***	.624	-.133	522	13	.736	.203	.064
	(.041)	(.450)	(.098)					
S1 Small sample	.951***	.624	-.133	522	13	.736	.203	.064
	(.042)	(.463)	(.101)					
S2 Strict endog.	.898***	.049	-.109	522	19	.926	.129	.236
	(.076)	(.671)	(.074)					
S3 Diff. GMM	.984***	.364	-.054	496	11	.904	.866	-
	(.080)	(.770)	(.054)					
S4 BCFE	.883***	.259	-.041	505	-	-	-	-
	(.041)	(.324)	(.044)					
S5 GFC/COVID	.943***	.716	-.149	522	15	.847	.148	.042
	(.040)	(.457)	(.098)					
S6 Lag 2 IV	.890***	1.330**	-.228**	522	11	.784	.328	.328
	(.047)	(.535)	(.100)					
S7 Lag 3 IV	.980***	-.065	-.009	522	11	.816	.488	.488
	(.085)	(.729)	(.124)					
S9 Year demeaned	.948***	.086	-.015	522	13	.620	.922	.760
	(.056)	(.379)	(.058)					
S10 Year dummies	.922***	.443	-.068	522	34	.620	-	-
	(.067)	(.624)	(.096)					
S11 Detrended RL	.963***	.523	-.115	522	13	.731	.134	.044
	(.053)	(.559)	(.119)					
S12 RL in 2002	.934***	.064	-.027	522	13	.680	.108	.035
	(.052)	(.338)	(.078)					
Panel B. Control of Corruption								
M2 Main model	.915***	1.046***	-.177**	522	13	.705	.221	.067

	(.048)	(.405)	(.076)					
S1 Small sample	.915***	1.046**	-.177**	522	13	.705	.221	.067
	(.049)	(.417)	(.078)					
S2 Strict endog.	.892***	.182	-.104	522	19	.851	.262	.470
	(.102)	(.649)	(.088)					
S3 Diff. GMM	.887***	-.568	-.211***	496	11	.953	.607	-
	(.063)	(.690)	(.080)					
S4 BCFE	.879***	-.047	-.043	505	-	-	-	-
	(.039)	(.281)	(.035)					
S5 GFC/Covid	.912***	1.108**	-.188**	522	15	.825	.164	.047
	(.046)	(.431)	(.080)					
S6 Lag 2 IV	.903***	1.214***	-.193***	522	11	.724	.206	.206
	(.053)	(.336)	(.055)					
S7 Lag 3 IV	.889***	.673	-.105	522	11	.865	.390	.390
	(.111)	(.700)	(.107)					
S8 ΔCC	.918***	-7.722	1.470	498	13	.931	.241	.224
	(.074)	(8.050)	(1.480)					
S9 Year demeaned	.928***	.753	-.124	522	13	.616	.771	.433
	(.058)	(.515)	(.095)					
S10 Year dummies	.937***	.807	-.131	522	34	.610	-	-
	(.061)	(.787)	(.121)					
S11 Detrended CC	.921***	.896**	-.152**	522	13	.665	.103	.021
	(.057)	(.360)	(.072)					
S12 CC in 2002	.937***	.572	-.087	522	13	.689	.099	.029
	(.052)	(.412)	(.072)					

*Note: S1-S12 as defined in the Method section and Table 3; S4 uses 24 economies; S10 is one step, so Hansen statistics are not reported. Institution = lagged RL or CC (ΔCC in S8, detrended in S11, 2002 value in S12); Interaction = its product with lagged unemployment. Standard errors in parentheses; all models include the five controls. AR(2), Hansen, and Diff-H (Difference in Hansen) report p-values; - = not applicable. *** $p < .010$, ** $p < .050$, * $p < .100$.*

The losses have identifiable sources. Removing common year effects (S9) shrinks the CC interaction by about 30% and raises its standard error to .095; the interval contains the main estimate but also zero, and high CC persistence is then below one only at 10% (.892, $p = .079$). S2 and S7 swap informative instruments for weak ones built from slow moving series, inflating standard errors, and BCFE (S4) uses only within economy change while treating the interaction as exogenous (Breitung et al., 2022).

Nonstationarity of Control of Corruption does not appear to drive the estimate: the M1 and M2 residuals strongly reject a unit root (Table 6, Panel C), and the AR(1)-AR(2) pattern indicates serially uncorrelated level errors, so the regression is balanced. Detrending keeps the interaction significant (S11), whereas the 2002 value (S12) and the annual change (S8) do not moderate persistence. S5, S11, and S12 have Difference in Hansen *p*-values below 5% and serve as stress tests.

Small sample inference qualifies the main CC estimate. The country cluster bootstrap gives a bootstrap-t *p*-value of .032, and about 95% of the 999 draws are negative, but the percentile interval [-.568, .078] includes zero; for RL the bootstrap-t *p*-value is .168. Dropping one economy at a time keeps the CC interaction negative in all 25 runs (-.462 to -.102), significant at 5% in 18 and at 10% in 20; it loses 10% significance without Costa Rica, Indonesia, Kazakhstan, Pakistan, or Uruguay. The RL interaction is never significant at 5%.

Weighing the whole map, H1 is supported. H2b is partially supported: M2 remains the reference estimate and the sign holds everywhere, but the signal survives neither common shock control nor several stricter assumptions, a steady sign with a fragile signal. H2a is not supported, and the two dimensions cannot be distinguished. All framework outputs are thus delivered: persistence against the unity line, each dimension's moderation, their comparison, the unity zone, and a map of firm and fragile evidence.

DISCUSSION

The first message, and the firmest rung of the evidence, is that unemployment in these economies has a long memory: shocks fade, but slowly. Where corruption control is weak the estimates cannot reject the unity line, yet they do not establish strict hysteresis, because the intervals also include values clearly below one and the unit root evidence points to slow mean reversion. Hysteresis theory is therefore best read as an account of why persistence is high, not as a claim that shocks are permanent (Blanchard & Summers, 1986): when workers who lose formal jobs drift into informal work (ILO, 2026), skills and contacts erode while wage setting protects insiders (Lindbeck & Snower, 1988), so a downturn lingers after output recovers. This agrees with the role of long term unemployment in hysteresis (Paternesi Meloni et al., 2022) and with strong persistence in Europe, Turkey, South Africa, and Morocco (Caporale et al., 2022; Dadam & Viegi, 2024; Ibourk & El Aynaoui, 2025; Yıldırım et al., 2025), and it extends the pattern to emerging Asian and Latin American economies.

The second message is that persistence may not be uniform. Higher Control of Corruption is associated with weaker persistence, and because the sign never reverses, a pure accident of specification is unlikely. New Institutional Economics explains why: institutions reduce uncertainty and transaction costs (North, 1990), and corruption acts as an uncertain and secret tax (Shleifer & Vishny, 1993) that, after a downturn, falls on the activities that reabsorb the unemployed, such as registering firms, obtaining permits and credit, winning public contracts, and delivering recovery programmes. Where corruption is controlled, policy responses more often reach their targets (Pham, 2025; Sahnoun & Abdennadher, 2023), credit flows more easily (Canh et al., 2021; Trabelsi, 2023), and new firms face lower entry barriers (Audretsch et al., 2022; Mickiewicz et al., 2021); these channels fit the estimates but are not observed directly.

Why, then, is the signal fragile? The most telling loss comes from common shocks. Once year effects are removed, the association shrinks and becomes imprecise, suggesting that part of it reflects governance and labour markets moving with shared global cycles, such as the commodity boom, the financial crisis, and the pandemic, rather than institutions changing how each economy absorbs its own shocks; this caveat goes beyond studies that report institutional moderation from one preferred specification (Raies, 2023; Raies & Ben Mimoun, 2025). A second loss appears when estimates rely on change within economies or on weak instruments. Institutions change slowly (North, 1990), and corruption control moves little from year to year while carrying sizeable margins of error (Kaufmann & Kraay, 2024), so within country estimators have little signal to work with; the same slowness explains why annual changes and starting values say little and why apparent nonstationarity does not drive the result. The evidence thus comes from how economies with different levels of corruption control absorbed shocks, not from what happens when an economy reforms.

The accounting perspective explains why corruption control is a natural candidate for the clearer signal and marks the limit of the claim. In agency terms, recovery spending is money that citizens entrust to officials, and public sector accounting, reporting, and audit make its use observable (Jensen & Meckling, 1976); accounting reforms are associated with better corruption control (Cuadrado-Ballesteros & Bisogno, 2021), and digital tools help when they strengthen transparency rather than control alone (Chang, 2026). The study measures none of these systems, so its findings form an evidence ladder: persistence is firm, the corruption control association is fragile, and the accountability channel behind it is untested.

Rule of Law points the same way with less precision, and since the two interactions cannot be distinguished, the study does not conclude that corruption control matters more. Courts and contract enforcement may pay off mainly through long term investment, whereas the carry over of unemployment is decided in the years right after a shock, when the allocation of public resources, permits, and credit matters most; the two dimensions also move almost together (Kaufmann & Kraay, 2024). Nor does the positive static correlation between governance and unemployment, which also appears as a short lived positive link in developed countries (Ragmoun, 2023), contradict this reading: once dynamics are modelled, the association turns favourable as the carried over burden grows. One possible mechanism, not tested here, is that cleaner governance draws hidden or informal job seekers into measured unemployment; without data on informality and labour force flows, this remains a hypothesis.

The theoretical implications are scaled to this evidence. For hysteresis theory, persistence should be treated as potentially state dependent rather than constant, with institutional dependence a candidate regularity rather than an established one. For New Institutional Economics, the dynamic question is whether institutions shorten the life of shocks rather than only shift outcome levels, and the answer must be separated from global cycles. For both, the unity line offers a shared yardstick and the identification map a reporting standard: institutional moderation should survive common shocks, small sample inference, and slow moving data before it is called established.

The practical implications follow the same ladder. Because persistence is firm, governments in these economies should plan stabilisation, employment services, retraining, and support for new firms for long lived shocks, acting before unemployment hardens into long term detachment. Because the corruption control association is fragile, anti corruption reform should rest on agency logic, with faster recovery as a plausible added benefit; building integrity into recovery spending through transparent budgeting, procurement controls, credible audit, and timely reporting is a low regret choice whose labour market effect should be evaluated causally. For accounting and audit professions and supreme audit institutions, the untested rung is an agenda: tracking whether recovery money is recorded, monitored, and delivered as intended would supply the missing evidence.

Conclusion, Limitations, and Suggestions

This study asked how persistent unemployment is in emerging and developing economies of Asia and Latin America and whether persistence differs with institutional

quality. The first answer is firm: unemployment has a long memory, supporting the first hypothesis, but it decays slowly rather than permanently, so the evidence shows persistence, not strict hysteresis. The second answer is cautious. Higher Control of Corruption is associated with weaker persistence and the sign never reverses, but support disappears once common year shocks are removed and under several stricter assumptions, so its hypothesis is only partially supported; Rule of Law points the same way without reliable precision and is not supported, and the two cannot be told apart. Persistence nears the unity line where corruption control is weak, but that zone cannot be located precisely. The promised contributions are delivered in graded form: a framework separating persistence from hysteresis, disaggregated governance evidence, an identification map of firm and fragile findings, and an accountability channel still to be tested.

The estimates are associations, not causal effects. The small number of economies limits instrument counts, test power, and precision, and the main association is sensitive to common shocks and to a few economies. The purposive Asian and Latin American sample limits generalisation; the governance indicators are perception based, correlated, and slow moving; no accounting or audit variable is included; and aggregate unemployment hides informality, youth unemployment, and duration.

Future research could extend coverage to Africa and emerging Europe, use common correlated effects estimators, test the accountability channel with audit coverage, budget transparency, and public financial management assessments, model thresholds around the unity zone, disaggregate unemployment by age, duration, and formality, and evaluate specific anti corruption, accounting, and digital governance reforms with causal designs.

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