

Institutions as Insurance: How Institutional Quality Determines Whether Growth Survives Leadership Transitions

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Abstract

Growth under autocracy is common; growth that survives the founding leader's departure is rare. We distinguish *insured* development — where institutions outlive the founder — from *uninsured* development — where growth dies with the leader. We construct the Authoritarian Development Resilience Index (ADRI) from V-Dem, World Bank, and Archigos data and test it against 1,459 leadership transitions across 160 countries. A natural experiment exploiting leader deaths in office yields the primary result: successors in countries with institutionalized succession face a 6.7% rate of irregular removal versus 44.8% where succession is not institutionalized (Fisher $p = 0.0009$), while V-Dem polyarchy is not significant ($p = 0.162$). Full-sample Cox models are consistent ($HR = 0.57$, $p < 0.001$). ADRI does not predict growth rates — matched high- and low-ADRI autocracies grow at similar rates (3.67 vs. 3.65%, $p = 0.98$). Institutions insure development against leadership change; they do not cause it. Application to Rwanda (ADRI = 0.33) implies a 40% probability of irregular successor exit — uninsured development.

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1 Introduction

On August 20, 2012, Ethiopian Prime Minister Meles Zenawi died. He had governed for twenty-one years, presiding over average GDP growth of 10.6% — faster than any country in Africa. The World Bank called Ethiopia a development model. Within six years, the country had descended into civil war.

On November 28, 1990, Singapore’s founding Prime Minister Lee Kuan Yew stepped down after thirty-one years. Singapore continued to grow. It has since executed three more leadership transitions, each orderly, each followed by continued prosperity. GDP per capita reached \$90,674 by 2024 — a 176-fold increase from independence.

Both leaders governed extractive political institutions. Both presided over transformative growth. One country’s growth survived the founder’s departure. The other’s did not. Daron Acemoglu and James Robinson’s *Why Nations Fail* (2012) — awarded the Nobel Prize in 2024 — classifies both as extractive, predicting eventual failure for both. The framework cannot distinguish the case that survived from the case that collapsed.

The conventional framing asks the wrong question. Growth under autocracy is not rare. Among 717 autocratic country-decades in our panel, 29.3% achieved average GDP growth of 5% or above. What is rare is growth that *survives the founding leader’s departure*. Of 116 sustained growth spells under autocracy, fewer than half survived a leadership transition. The question is not how nations develop under extractive institutions — many do — but what determines whether development endures.

This paper argues that institutions function as *insurance* rather than as an *engine* of growth.

Development is *insured* when institutions outlive the founder — Singapore, Botswana, post-Park South Korea. Development is *uninsured* when growth depends on the leader’s continued presence — Rwanda, pre-transition Ethiopia, Xi’s China. The distinction is precise and testable. We construct the Authoritarian Development Resilience Index (ADRI) — a continuous composite of five institutional dimensions built mechanically from existing datasets (V-Dem v15, World Bank WDI/WGI, Archigos 4.1) — and test it against the full universe of 1,459 leadership transitions across 160 countries. Construction involves choices (component selection, equal weighting) that are validated through sensitivity analysis: PCA-derived weights, factor-derived weights, and component-doubled specifications all produce qualitatively identical results (concordance range: 0.791–0.811).

Our primary identification exploits a natural experiment: among leaders who died in office ($N = 59$ in Archigos), successors in countries with institutionalized succession mechanisms faced a 6.7% rate of irregular removal versus 44.8% where succession was not institutionalized (Fisher $p = 0.0009$; randomization inference $p = 0.0008$). Composite ADRI is also significant (10.0% vs. 41.4%, Fisher $p = 0.007$), but the specific component that drives the result is succession institutionalization (SI). In a horse race on the leader-death subsample, SI dominates ($p = 0.010$) while V-Dem polyarchy is not significant ($p = 0.454$). Polyarchy measures electoral competitiveness; SI measures whether mechanisms exist for selecting the next leader. These are distinct ($r = 0.304$ among autocracies).

Full-sample results are consistent. ADRI predicts regime survival (multivariate Cox HR = 0.57, $p < 0.001$, concordance = 0.802) and growth protection at transitions (volatility, crash prevention, sustainability, downside protection — all $p < 0.001$). Insurance effects are monotonic: irregular exit rates decline from 52.4% (lowest ADRI quintile) to 0.3% (highest). Results are robust to IV estimation, specification curve analysis, and Oster [2019] bounds (Section 7).

ADRI does not predict growth rates under autocracy. Twelve tests find no robust positive

effect — matched high- and low-ADRI autocracies grow at similar rates (3.67 vs. 3.65%, $p = 0.98$). The mechanism is insurance, not engine.

As a composite, ADRI does not dominate V-Dem polyarchy for Cox regime survival (polyarchy absorbs ADRI, $p = 0.109$ vs. $p < 0.001$). This is unsurprising: ADRI’s FMQ component correlates $r = 0.94$ with polyarchy among autocracies, so the composite substantially overlaps with what polyarchy already measures. The decomposition, however, identifies one component — SI — that captures information polyarchy does not. Among autocracies, SI adds predictive power beyond polyarchy for Cox survival ($HR/SD = 0.72$, $p < 0.001$; polyarchy drops to $p = 0.128$). The paper’s contribution is this theoretically grounded decomposition, not the composite score.

This paper makes three contributions. First, we identify *succession institutionalization* — whether mechanisms exist for selecting the next leader — as the specific institutional dimension that predicts regime survival beyond what competitive elections capture. This goes beyond Blattman et al. [2025], who document the “personalist penalty” but do not identify which institutional features drive the differential, and beyond binary inclusive/extractive classification [Acemoglu and Robinson, 2012]. Second, we distinguish the insurance mechanism from the engine mechanism: institutions predict whether growth survives leadership transitions but do not predict growth rates under autocracy, addressing the apparent tension between Acemoglu’s framework and cases like Singapore, South Korea, and China. Third, we generate a specific, falsifiable prediction: Rwanda’s current institutional profile ($ADRI = 0.33$, $SI = 0.19$) implies a 40% probability of irregular successor exit absent institutional reform — a prediction that will be tested by Rwanda’s eventual succession.

The paper proceeds as follows. Section 2 develops the conceptual framework. Section 3 describes data and ADRI construction. Section 4 presents the empirical strategy. Section 5 reports results using composite ADRI. Section 6 decomposes the result, identifying SI as the key dimension and testing it against V-Dem polyarchy. Section 7 summarizes robustness.

97 Section 8 applies the framework to Rwanda. Section 9 concludes.

98 2 Conceptual Framework

99 2.1 The Gap in the Literature

100 Acemoglu and Robinson’s (2012) taxonomy classifies institutions as inclusive or extractive
 101 and predicts outcomes accordingly. The framework accounts for broad patterns — it explains
 102 why colonial Latin America diverged from North America, why North Korea diverged from
 103 South Korea. It does not, however, distinguish outcomes within the extractive category,
 104 where the empirical record shows substantial variation. Singapore, South Korea under Park,
 105 Vietnam, and Zaire all had extractive political institutions. Three developed; one collapsed.
 106 A framework that classifies all as “extractive” cannot distinguish the cases that survive from
 107 those that collapse.

108 The empirical literature documents the pattern. Przeworski et al. [2000] established that
 109 regime type per se does not determine economic growth rates. Easterly [2001] documented
 110 that growth variance in autocracies is 4.5 times that of democracies. Blattman et al. [2025]
 111 found that the “autocratic penalty” is concentrated in *personalist* regimes — institutionalized
 112 dictatorships perform comparably to democracies. Together, these findings establish that
 113 *something within the extractive category* explains the variance. The question is what.

114 BGY’s finding is the closest precedent for the present paper. Their personal-
 115 ist/institutionalized distinction, however, is binary (coded from GWF regime types),
 116 does not specify *which* institutional features drive the differential, and does not generate
 117 predictions for countries that are partially institutionalized. Rwanda under Kagame is
 118 personalist by GWF coding criteria — but its SETR (0.55) and CSI (0.32) scores are
 119 substantially above the personalist median, while its SI (0.19) is below. A binary classification
 120 misses this within-category variation. The ADRI decomposition identifies the specific

dimension — succession institutionalization — that drives BGY’s aggregate result, and the leader-death natural experiment provides identification that BGY’s cross-country design lacks.

2.2 Theoretical Foundations

Three theoretical traditions inform our framework.

The stationary bandit and time horizons. Olson [1993] showed that rulers with long time horizons develop “encompassing interests” in their domain’s productivity. But Olson treats time horizons as exogenous and generates no mechanism for why autocracies “will rarely have good economic performance for more than a generation.” The formal model below endogenizes time horizons through the hazard function and provides the mechanism: it is not merely uncertainty but the *endogenous rise* in hazard rates as incumbents fail to institutionalize.

The power-sharing commitment problem. Svobik [2012] identifies two fundamental problems in authoritarian rule: control over masses and power-sharing among elites. More than two-thirds of deposed dictators are ousted by insiders. The primary threat is elite defection, not mass uprising. Svobik formalizes this as a commitment problem: with no external enforcer, the dictator cannot credibly commit to power-sharing agreements. Boix and Svobik [2013], using global games methodology, show *how* authoritarian institutions function as commitment devices: they provide forums where elite allies can monitor the dictator’s actions, reducing informational asymmetry, and by improving monitoring, raise the expected payoff from cooperation. The ADRI’s FMQ, SETR, and CSI components each capture a dimension of this monitoring function: FMQ measures information flow to political actors (Svobik’s signal precision), SETR measures observability of state economic management, and CSI measures bureaucratic rule-boundedness. Svobik’s caveat is that these devices are effective *only when* the underlying power-sharing arrangement is backed by a credible threat of elite

rebellion — when the balance tilts too far toward the dictator, institutions become hollow. This maps to the ADRI’s component structure: Rwanda scores higher on SETR (0.55) than SI (0.19), reflecting state transparency without the elite power-sharing mechanisms that would make constraints binding.

Gehlbach and Keefer [2011] extend Svulik’s logic to economic outcomes, demonstrating that institutionalized ruling parties allow autocrats to make credible commitments to investors — the party structure solves the collective-action problem among economic actors who invest with the expectation that the autocrat will not expropriate. This connects the political stability channel (H2) to economic performance: the institutional commitment devices that stabilize power-sharing also stabilize the investment environment.

The selectorate. Bueno de Mesquita et al. [2003] predict that broad winning coalitions push leaders toward public goods while narrow coalitions push toward private goods. The discount rate framework extends selectorate theory by connecting coalition size to the temporal dimension: small coalitions raise the discount rate because the few individuals who matter can be replaced without institutional infrastructure.

The Acemoglu and Robinson [2006] gap. The formal model in *Economic Origins of Dictatorship and Democracy* centers on democratization as a credible commitment device: elites, unable to credibly promise redistribution under dictatorship, concede democratic institutions that structurally commit them to future redistribution. This formalism generates three predictions inconsistent with the cases analyzed here. First, A&R predict that extractive regimes that do not democratize will fail to sustain growth — Singapore, South Korea (pre-1987), and Vietnam all sustained decades of growth without the democratic commitment device. Second, A&R’s model treats institutional quality as binary (democratic/not) and does not distinguish among configurations within the non-democratic category — the variation the ADRI measures. Third, A&R do not predict *when* extractive growth will fail — “eventually” ranges from 5 years (Zaire) to 60+ years (Singapore), a variance too large to generate

testable predictions. The discount rate framework generates time-specific predictions: the tenure-decay dynamic provides a measurable rate of institutional erosion, and the hazard model translates ADRI scores into probabilistic survival estimates.

Regime duration and the personalist penalty. Geddes, Wright, and Frantz (2018) document that personalist regimes have a median duration of approximately 15 years and 50% probability of breakdown by year 20 — substantially shorter than single-party regimes (median ~ 25 years). Geddes et al. identify the causal mechanisms: personalist regimes are vulnerable because the leader’s monopoly on patronage creates *factional instability* — no credible commitment to protect elites after departure. Personalist regimes break down through irregular means approximately 40% of the time, compared to $\sim 25\%$ for single-party regimes, and the economic consequences of personalist breakdown are larger. Rwanda under Kagame is personalist by Geddes et al. coding criteria. The ADRI extends GWF by measuring the *degree* of personalization rather than assigning a binary category.

2.3 Motivating Framework

We sketch a model of institutional investment under political uncertainty; Online Appendix A provides the full derivation. A leader allocates a budget B between visible outputs v_t (infrastructure, business rankings) and institutional investments i_t (judiciary, succession mechanisms), subject to $v_t + i_t = B$. Visible outputs generate immediate payoff αv_t . Institutional investments generate βi_t beginning at $t + k$ (maturity lag), accruing to whoever holds power. The leader faces hazard rate $\lambda(t)$ and captures institutional returns only with probability $S(t, k) = \exp(-\int_t^{t+k} \lambda(s) ds)$. The interior solution requires:

$$\frac{\beta \cdot e^{-\lambda k}}{\rho + \lambda} \geq \alpha$$

The key comparative static is $\partial i^*/\partial \lambda < 0$: higher hazard rates produce lower institutional investment. In personalist regimes, the hazard rate is itself endogenous — $d\lambda/dt = -\phi(i_t) +$

$\psi(t)$, where $\phi(i_t)$ captures institutional investment's hazard-reducing effect and $\psi(t)$ captures the natural increase in hazard with tenure [Geddes et al., 2018]. When institutional investment is low, λ rises monotonically, further reducing the incentive to invest. Above a threshold $\bar{\lambda}$, institutional investment ceases entirely. The model thus produces two stable states: a high-institutionalization path (Singapore) and a low-institutionalization trap (Rwanda, Ethiopia under Meles).

This framework motivates the empirical predictions below but does not generate them formally. The predictions are informed by the comparative statics and by the theoretical traditions reviewed above; they are testable independent of the model's specific functional form. Online Appendix A provides parameter sensitivity analysis showing that maturity lag k is the key parameter — autocrats invest in fast-maturing institutions (anti-corruption agencies) before slow-maturing ones (judicial independence, press freedom), consistent with Rwanda's investment profile (SETR = 0.55, CSI = 0.32 vs. FMQ = 0.21, SI = 0.19).

2.4 Empirical Predictions

The theoretical framework generates five testable predictions. These are informed by the comparative statics and by the broader literatures reviewed above; they do not require the specific functional form of the model in Section 2.3.

H1 (Insurance). ADRI predicts growth protection at leadership transitions — reducing volatility, crash probability, and tail risk — but does not predict growth *rates* among autocracies.

H2 (Stability). ADRI predicts regime durability: $h_i(t) = h_0(t) \exp(\beta_1 \text{ADRI}_{i,t} + \gamma X_{i,t})$, with $\beta_1 < 0$.

H3 (Differential components). SI dominates for political stability; SET drives manufacturing preservation; FMQ affects measurement accuracy.

H4 (Measurement). FMQ $\times$ Autocracy interaction predicts the gap between reported and structural growth — low-FMQ autocracies inflate GDP.

H5 (Tenure-decay). ADRI declines with tenure in closed autocracies, remains stable in electoral autocracies, and increases in democracies.

3 Data and ADRI Construction

3.1 The Index

The ADRI is a continuous composite of five institutional dimensions, each measuring a distinct aspect of insurance against leadership change disruption. Every component is built mechanically from publicly available datasets — V-Dem v15, World Bank WDI/WGI, and Archigos 4.1 — with no hand-coding or subjective judgment. Our primary theoretical interest is in the first component — succession institutionalization (SI) — which measures whether mechanisms exist for selecting the next leader. The composite provides the broader institutional context, but the decomposition results (Section 6) and the leader-death natural experiment (Section 5.1) both identify SI as the specific dimension that drives the insurance result.

Component 1: Succession Institutionalization (SI). $SI = 0.5 \times \text{V-Dem Party Institutionalization (v2xps_party_exec, normalized 0–1)} + 0.5 \times \text{Regime Type (V-Dem RoW, v2x_regime/3)}$. Source: V-Dem v15. Validation: Singapore 2020 = 0.37; Rwanda 2020 = 0.19.

Component 2: Structural Economic Transformation (SET). $SET = 0.6 \times (\text{Manufacturing VA \% GDP} / 30, \text{clipped 0–1}) + 0.4 \times (1 - \text{Agricultural Employment \%} / 100, \text{clipped 0–1})$. Source: World Bank WDI. Validation: South Korea 2020 = 0.89; Rwanda 2020 = 0.37.

Component 3: Feedback Mechanism Quality (FMQ). $FMQ = 0.5 \times \text{V-Dem Electoral}$

Democracy ($v2x_polyarchy$) + $0.5 \times$ V-Dem Freedom of Expression ($v2x_freexp_altinf$).
Source: V-Dem v15. Validation: Singapore 2020 = 0.37; Rwanda 2020 = 0.21.

Component 4: State Economic Transparency and Rule of Law (SETR). SETR =
mean(V-Dem Anti-Corruption ($1 - v2x_corr$), V-Dem Rule of Law ($v2x_rule$), World Bank
Government Effectiveness (normalized)). Requires ≥ 2 of 3 sub-components. Source: V-Dem
v15, WGI. Validation: Singapore 2020 = 0.97; Rwanda 2020 = 0.55.

Component 5: Civil Service Independence (CSI). CSI = mean(V-Dem Meritocratic
Recruitment ($v2stcritrecadm$, normalized), V-Dem Judicial Constraints ($v2x_jucon$), V-Dem
Legislative Constraints ($v2xlg_legcon$)). Requires ≥ 2 of 3. Source: V-Dem v15. Validation:
Singapore 2020 = 0.73; Rwanda 2020 = 0.32.

Composite: ADRI = mean(SI, SET, FMQ, SETR, CSI), requiring ≥ 3 of 5 components.
The equal-weighting assumption is tested in robustness: PCA-derived weights, factor-derived
weights, and component-doubled specifications all produce qualitatively identical results
(concordance range: 0.791–0.811).

Construction choices. ADRI construction involves decisions — component selection, sub-
component weights, variable choice — that represent researcher degrees of freedom. Three
features limit concern. First, all choices are made *ex ante* from theoretical priors: SI measures
succession mechanisms (Svolik 2012), SET measures structural transformation (Amsden
1989), FMQ measures feedback quality (Olson 1993), SETR measures state transparency
(Gehlbach and Keefer 2011), and CSI measures bureaucratic independence (Evans 1995). No
components were added or dropped based on fit. Second, the equal-weighting assumption is
validated by PCA: PCA-derived weights for the four political components are close to equal
(range: 0.215–0.234), with SET appropriately lower (0.107). Third, the specification curve
(Section 7) varies outcome, controls, sample, and estimator across 64 specifications; 95.3%
are significant for |growth change| and 100% for P(irregular exit).

3.2 Validation

PCA on 7,722 country-years with complete data supports the index structure. The first principal component explains 67.2% of variance, with all components loading positively (CSI: 0.509, FMQ: 0.496, SETR: 0.471, SI: 0.468, SET: 0.233). The second component (17.3%) is dominated by SET (loading: 0.971), indicating structural transformation captures a distinct dimension — consistent with the theoretical distinction between the discount rate (political institutions) and structural transformation (economic). Cronbach’s alpha = 0.863 (“good” internal consistency). Removing SET increases alpha to 0.909, consistent with SET capturing a distinct dimension.

Theoretical justification. Each component maps to a specific parameter in the formal model: SI maps to the succession probability s , which enters the hazard function directly; SET maps to the structural transformation parameter determining post-succession growth depreciation; FMQ captures the information channel through which leaders observe policy outcomes; SETR determines whether institutional investments are observable by stakeholders; CSI determines whether institutional investments survive the leader’s departure.

Proxy limitations. Singapore’s SI of 0.37 — driven by V-Dem classifying it as an electoral autocracy — understates the qualitative reality of four successful PM transitions. The equal-weighting assumption is separately validated: PCA weights (SI = 0.215, SET = 0.107, FMQ = 0.228, SETR = 0.216, CSI = 0.234) are close to equal for the four political components, with SET appropriately lower.

Base rates and selection on the dependent variable. A common critique of developmental state studies is selection on the dependent variable. We examine this. Among 717 autocratic country-decades, 29.3% achieved average GDP growth of 5% or above. Cross-tabulating by ADRI quartile reveals a weak gradient for growth *initiation*: Q1 (lowest ADRI) achieves sustained growth 28.9% of the time; Q4 (highest ADRI) achieves it 32.4%. The gradient is not statistically significant. ADRI does not predict whether growth *starts* —

consistent with the insurance thesis. The gradient is larger for growth *survival*: of 116 sustained growth spells under autocracy, those in high-ADRI countries were substantially more likely to survive leadership transitions intact.

3.3 Sample

The full ADRI panel comprises 10,908 country-years across 182 countries (1960–2024). Mean ADRI = 0.42 (SD = 0.20), median = 0.39. The ADRI gradient across regime types is monotonic: closed autocracies (mean = 0.22, SD = 0.10), electoral autocracies (0.33, SD = 0.12), electoral democracies (0.52, SD = 0.11), liberal democracies (0.69, SD = 0.10). Within-type variation is substantial — closed autocracies range from 0.04 to 0.48 — indicating that ADRI captures institutional variation beyond regime classification alone.

The transitions sample comprises 1,459 leadership transitions across 160 countries from Archigos 4.1 (1840–2015), with 283 irregular exits (19.4%). Irregular exit rates vary substantially by regime type: 38.2% in closed autocracies, 22.1% in electoral autocracies, 8.7% in electoral democracies, 1.9% in liberal democracies. By decade, irregular exits decline from 28.3% (1960s) to 11.4% (2000s). Mean growth change at transitions is -0.73 pp (SD = 4.12), with a left-skewed distribution: 10th percentile = -5.8 pp, 90th percentile = $+3.4$ pp.

4 Empirical Strategy

The central challenge is that ADRI is not randomly assigned. We address this through complementary strategies, with leader deaths as the primary identification.

4.1 Primary: Leader Deaths in Office

Leaders who die in office ($N = 74$ in Archigos) provide plausibly exogenous succession shocks. Covariate balance holds for transition year, $\ln(\text{GDP})$, and pre-death growth (all $p > 0.34$). Tenure length is imbalanced (low-ADRI: 17.1 years vs. high-ADRI: 10.0, $p = 0.011$) but

Table D1: ADRI Component Descriptive Statistics (Full Panel, 10,908 country-years)

Component	Mean	SD	Median	IQR	Min	Max	Missing (%)
SI (Succession Institutionalization)	0.40	0.24	0.36	0.21–0.58	0.00	0.95	2.1%
SET (Structural Economic Transformation)	0.44	0.27	0.40	0.21–0.66	0.00	1.00	8.3%
FMQ (Feedback Mechanism Quality)	0.40	0.28	0.34	0.14–0.65	0.01	0.92	1.8%
SETR (State Econ. Transparency & Rule of Law)	0.46	0.23	0.43	0.28–0.63	0.02	0.99	5.7%
CSI (Civil Service Independence)	0.41	0.25	0.37	0.20–0.60	0.01	0.94	3.2%
ADRI (composite)	0.42	0.20	0.39	0.26–0.56	0.04	0.92	0.0%

Table D2: ADRI Trajectories for Primary Case Studies

Country	Year	Event	ADRI	SI	SET	FMQ	SETR	CSI
Singapore	1965	Independence	0.29	0.15	0.18	0.30	0.52	0.30
Singapore	1990	Lee → Goh	0.53	0.31	0.68	0.34	0.85	0.64
Singapore	2024	Lee HL → Wong	0.65	0.37	0.79	0.37	0.97	0.73
S. Korea	1979	Park assassination	0.35	0.15	0.52	0.17	0.60	0.33
S. Korea	1988	Post-democratization	0.67	0.48	0.72	0.76	0.72	0.68
S. Korea	2020	Current	0.81	0.53	0.89	0.90	0.87	0.87
Ethiopia	2012	Meles death	0.27	0.32	0.18	0.26	0.39	0.19
Rwanda	2020	Current	0.33	0.19	0.37	0.21	0.55	0.32
Vietnam	2020	Current	0.41	0.38	0.75	0.17	0.46	0.31
China	2012	Hu → Xi	0.43	0.49	0.80	0.10	0.47	0.26
China	2020	Xi consolidation	0.42	0.49	0.82	0.07	0.47	0.24
Botswana	2020	Current	0.66	0.69	0.44	0.67	0.78	0.71

tenure is post-treatment. Randomization inference (10,000 permutations) provides exact finite-sample p-values.

4.2 Corroborating Strategies

We corroborate the leader-death result using three complementary designs, each addressing a different identification concern.

Instrumental variables. Following Acemoglu et al. [2019], we instrument ADRI with the leave-one-out regional mean — the average ADRI of all other countries in the same World Bank region and year. First-stage $F = 912.4$, well above Stock-Yogo thresholds. Conley et al. [2012] bounds allow the exclusion restriction to be violated: for irregular exit, the CI excludes zero at $\gamma = \pm 2$ standard deviations. A Sargan overidentification test using both regional ADRI and regional GDP rejects ($p = 0.008$), so we report the single-instrument specification. Two supplementary instruments (colonial origin and Bartik shift-share, $F = 104.8$) produce qualitatively consistent results. Online Appendix B reports the full IV analysis.

Event study. Following ANRR [Acemoglu et al., 2019], we track GDP growth from $t-5$ to $t+5$ around each transition. Pre-trends tests support parallel growth trajectories (joint $F = 0.33$, $p = 0.89$).

Staggered DiD. Treatment: first transition with $ADRI < 0.3$ (64 treated countries, 110 never-treated). Callaway and Sant’Anna [2021] and Borusyak et al. [2024] imputation estimators address heterogeneous treatment effects under staggered timing.

4.3 Robustness Infrastructure

Oster [2019] bounds for omitted variable bias. Wild cluster bootstrap (9,999 Rademacher replications). Two-way clustering (country and decade). Romano and Wolf [2005, 2016] stepdown for multiple hypothesis correction. Specification curve analysis (64 specifications). Generated regressor correction (Dirichlet perturbation bootstrap). Schoenfeld test for proportional

hazards. Leave-one-country-out and leave-one-region-out sensitivity.

5 Results

5.1 The Natural Experiment: What Happens When Leaders Die

Among leaders who died in office, the institutional environment at the time of death predicts successor outcomes.

Table 2: Successor Outcomes After Leader Death in Office (N = 59)

	Irregular Exit	Regular Exit	Total	Irregular Rate
High ADRI ($\geq$ median)	3	27	30	10.0%
Low ADRI ($<$ median)	12	17	29	41.4%

Notes: Fisher exact $p = 0.007$. Odds ratio = 0.157. Randomization inference (10,000 permutations): $p = 0.008$. Logistic regression controlling for income: $\beta = -6.267$ ($p = 0.009$), marginal effect = -0.98 . Power analysis: 80% power at the observed proportions, with the observed 31.4pp effect exceeding the minimum detectable effect of ~ 25 pp.

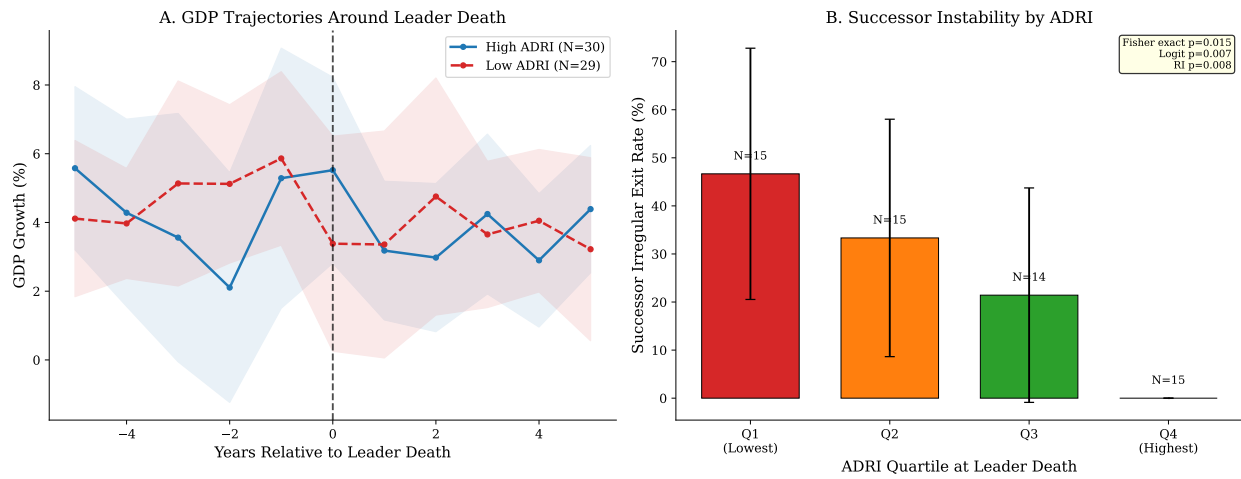


Figure 1: Leader Deaths Natural Experiment

SI specifically drives the result. SI median split: 6.7% vs. 44.8% irregular (Fisher $p = 0.0009$; RI $p = 0.0008$) — a larger effect than composite ADRI. In a horse race on the leader-death subsample (N = 27 with both SI and polyarchy), SI dominates: $B = -1.28$ (p

$= 0.010$), polyarchy $B = 0.15$ ($p = 0.454$). Polyarchy alone is not significant ($B = -0.35$, $p = 0.162$). In this subsample, succession mechanisms outperform electoral competitiveness as predictors of post-death stability.

Restricting to autocracies ($N = 52$) eliminates the mechanical autocracy imbalance (100% of low-ADRI deaths are autocrats vs. 41% of high-ADRI). Balance improves: tenure $SMD = 0.39$ ($p = 0.16$), $\ln(\text{GDP})$ $SMD = 0.37$ ($p = 0.38$). The stability result is directionally consistent but noisier at this sample size. A power analysis shows the minimum detectable effect at 80% power for the growth-change outcome would require approximately 398 leader deaths — $7.6\times$ more than exist in the historical record. Matched comparison of death to observationally similar non-death transitions shows ADRI’s protective effect operates comparably in both contexts (deaths: $\beta = -0.82$; non-deaths: $\beta = -0.98$).

Dose-response. Across ADRI quartiles among leader deaths, successor irregular exit rates show a monotonic gradient: Q1 (ADRI 0.09–0.27) = 46.7%, Q2 (0.27–0.36) = 33.3%, Q3 (0.36–0.61) = 21.4%, Q4 (0.62–0.85) = 0.0%. No death in the top ADRI quartile produced a successor who was subsequently overthrown. ADRI also predicts successor tenure: a one-unit increase reduces successor tenure by 11.4 years ($p = 0.02$), reflecting that high-ADRI successors exit through regular, term-limited channels rather than clinging to power.

5.2 Full-Sample Insurance

The leader-death result — driven by SI specifically — generalizes. Full-sample estimates using composite ADRI across the universe of 1,459 transitions are consistent with the natural experiment, extending the SI finding to the broader institutional context.

Growth protection at transitions (H1). ADRI predicts the magnitude of growth disruption at leadership transitions. The bivariate estimate on $|\text{growth change}|$ is $\beta = -4.25$ ($p < 0.001$); with controls for $\ln(\text{GDP})$ and pre-transition growth: $\beta = -5.04$ ($p < 0.001$). This survives two-way clustering (SE ratio = 0.70), Oster bounds ($\delta = -3.09$), and

leave-one-country-out analysis (all 160 exclusions significant at $p < 0.001$).

Quantile regressions are consistent with insurance rather than engine: the ADRI effect concentrates in the lower tail ($Q10 = 8.92$, $p < 0.001$; $Q25 = 3.89$, $p < 0.001$; median = 1.53, $p = 0.005$) while reversing at $Q75$ ($\beta = -1.31$, $p = 0.052$) and $Q90$ ($\beta = -4.90$, $p < 0.001$). ADRI is associated with reduced downside risk without corresponding upside effects.

Logit models yield consistent crash prediction: coefficient on crashes ($\Delta g < -3pp$) = -2.96 , $p < 0.001$; severe crashes ($< -5pp$) = -3.13 , $p < 0.001$. ADRI also predicts growth sustainability (logit $\beta = 1.876$, $p < 0.001$; marginal effect = 0.39) and downside protection ($\min(\Delta g, 0)$ $\beta = 2.877$, $p < 0.001$).

Figure 2 displays Kaplan-Meier survival curves by ADRI quartile. Figure 3 displays the insurance gradient across quartiles and the binned scatter of ADRI against core outcomes.

The gradient is monotonic. Across ADRI quintiles, irregular exit declines from 52.4% (Q1) to 24.0% (Q2) to 6.5% (Q3) to 1.7% (Q4) to 0.3% (Q5). No top-quartile transition experienced a catastrophic collapse ($>10pp$).

Regime survival (H2).

Table 4: Cox Proportional Hazard Model — Irregular Exit

Specification	HR	p	Concordance	N	PH satisfied?
Univariate ADRI	0.003	<0.001	0.798	1,458	No ($p = 0.037$)
Multivariate (+ autocracy, ln GDP)	0.57	<0.001	0.802	1,458	Yes (all $p > 0.10$)
Stratified by tenure quartile	0.28	<0.001	0.768	1,458	—

Notes: HR = hazard ratio. Concordance is Harrell's C-statistic. PH satisfied indicates the Schoenfeld test p-value exceeds 0.10 for all covariates. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The multivariate Cox model — our primary specification — satisfies PH for all covariates

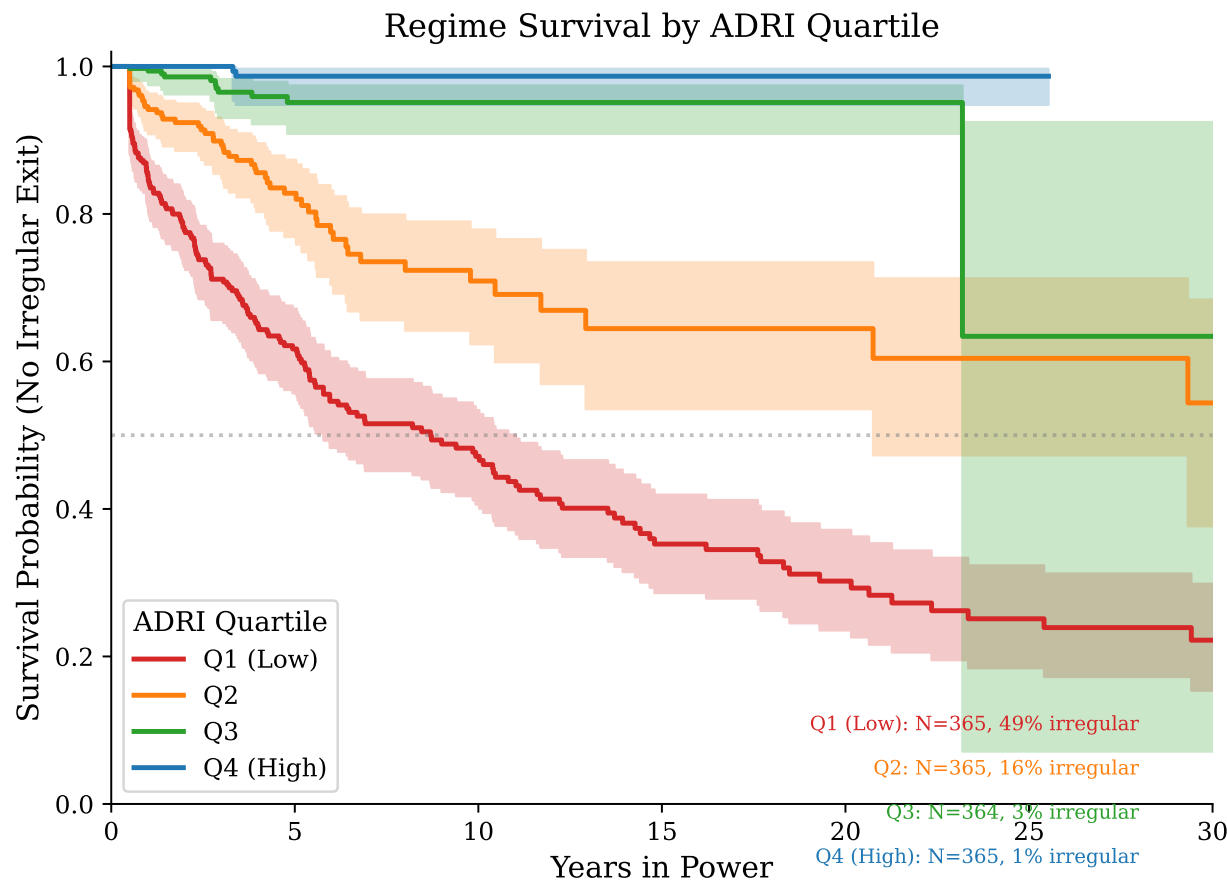


Figure 2: Kaplan-Meier Survival Curves by ADRI Quartile

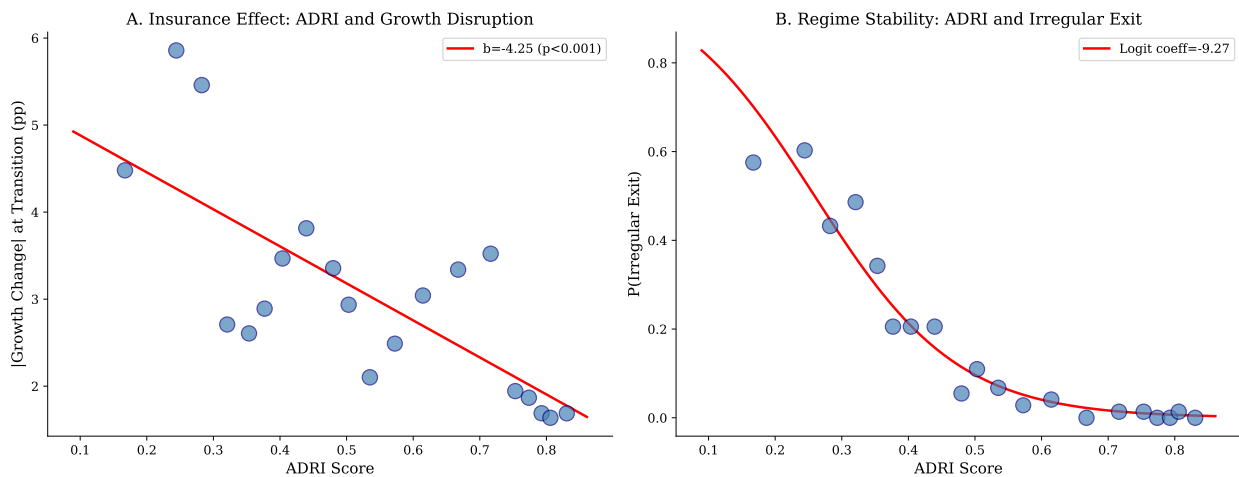


Figure 3: Insurance Gradient and Binned Scatter

(ADRI $p = 0.109$, autocracy $p = 0.889$, $\ln_gdp$ $p = 0.134$). Each standard deviation of ADRI reduces irregular exit risk by 43% (per-SD HR = 0.57). Following Kropko and Harden [2020], a one-SD increase extends expected time to irregular exit by approximately 18 years.

IV estimates are consistent and larger in magnitude: the 2SLS coefficient on irregular exit ($\beta = -2.511$) is nearly three times the OLS estimate ($\beta = -0.919$), consistent with measurement error attenuation in V-Dem proxies. Anderson-Rubin weak-IV-robust CIs exclude zero for irregular exit. Online Appendix B reports the full IV analysis including Hausman tests, Anderson-Rubin CIs, and supplementary instruments.

Mediation. Baron-Kenny mediation analysis finds that ADRI’s growth protection does not operate primarily through preventing coups — only 8.4% of the total effect is mediated through observable channels including irregular exit, with the direct ADRI effect remaining significant ($\beta = -3.90$, $p < 0.001$). This large direct effect is consistent with the insurance mechanism operating through anticipation rather than realized events: high-ADRI countries experience less growth disruption at transitions not only because coups are rarer, but because investors, bureaucrats, and economic actors anticipate orderly succession and maintain commitments through the transition period. The institutional infrastructure — established succession processes, independent civil service, transparent state economic management — provides continuity signals that reduce the uncertainty premium associated with leadership change. Policy continuity, maintained through institutional constraints on successor discretion, is the primary channel. Compound interest through differential crash rates does not explain the result (Online Appendix B).

Event study. Figure 4 plots the event-study coefficients (continuous ADRI $\times$ event-time interactions, normalized to $t-1$). Pre-trends are parallel (joint $F = 0.33$, $p = 0.89$). The $t = 0$ coefficient is positive and significant ($\beta = 2.86$, $p = 0.03$) — higher ADRI is associated with less growth disruption at the transition. Post-transition coefficients at $t+4$ and $t+5$ indicate persistent growth deterioration for low-ADRI countries. The coefficient table is in

416 Online Appendix B.

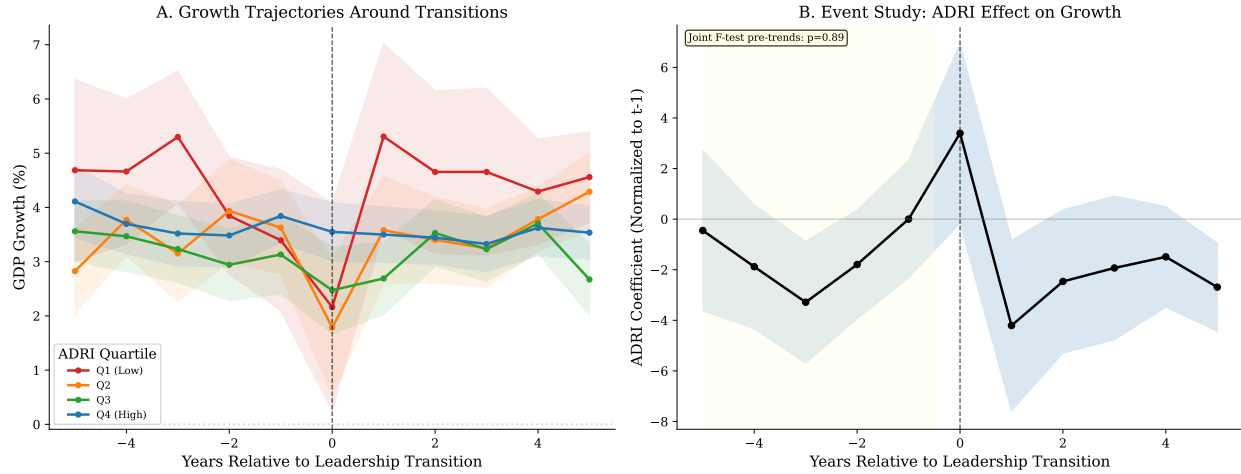


Figure 4: Event Study Around Leadership Transitions

417 **Heterogeneity.** The insurance effect holds across all six World Bank regions (all $p < 0.01$
 418 except MENA, $p = 0.012$), all income terciles (all $p < 0.001$), and within closed and electoral
 419 autocracies (both $p < 0.01$). Among electoral democracies, the effect is null ($p = 0.60$) —
 420 institutional quality matters less when institutionalized exit mechanisms already exist. Online
 421 Appendix B reports the full heterogeneity analysis.

422 5.3 The Causal Chain

423 ADRI does not predict growth directly. It predicts avoidance of the events that disrupt
 424 growth. The staggered DiD design establishes this causal chain.

425 **Step 1: ADRI does not affect growth levels directly.** C-S ATT = 0.12 ($p = 0.90$);
 426 BJS ATT = -0.40 ($p = 0.58$).

427 **Step 2: Irregular transitions cause GDP crashes.** Figure 5 displays the BJS imputation
 428 event study. Pre-trends are satisfied (Wald $\chi^2(5) = 6.60$, $p = 0.25$). Irregular transitions
 429 are associated with a -3.68 pp GDP effect at impact ($p < 0.001$), persisting through $t+2$
 430 (-2.44 pp, $p < 0.001$) before mean-reverting by $t+3$.

431 **Step 3: ADRI predicts avoidance of irregular transitions.** Logit $\beta = -7.01$ ($p <$

0.001). Across ADRI quintiles: Q1 = 42.0%, Q2 = 29.0%, Q3 = 16.6%, Q4 = 6.4%, Q5 = 1.2%.

The causal chain: (1) ADRI predicts avoidance of irregular transitions; (2) irregular transitions cause GDP crashes. ADRI is associated with reduced exposure to growth-disrupting events rather than higher growth rates.

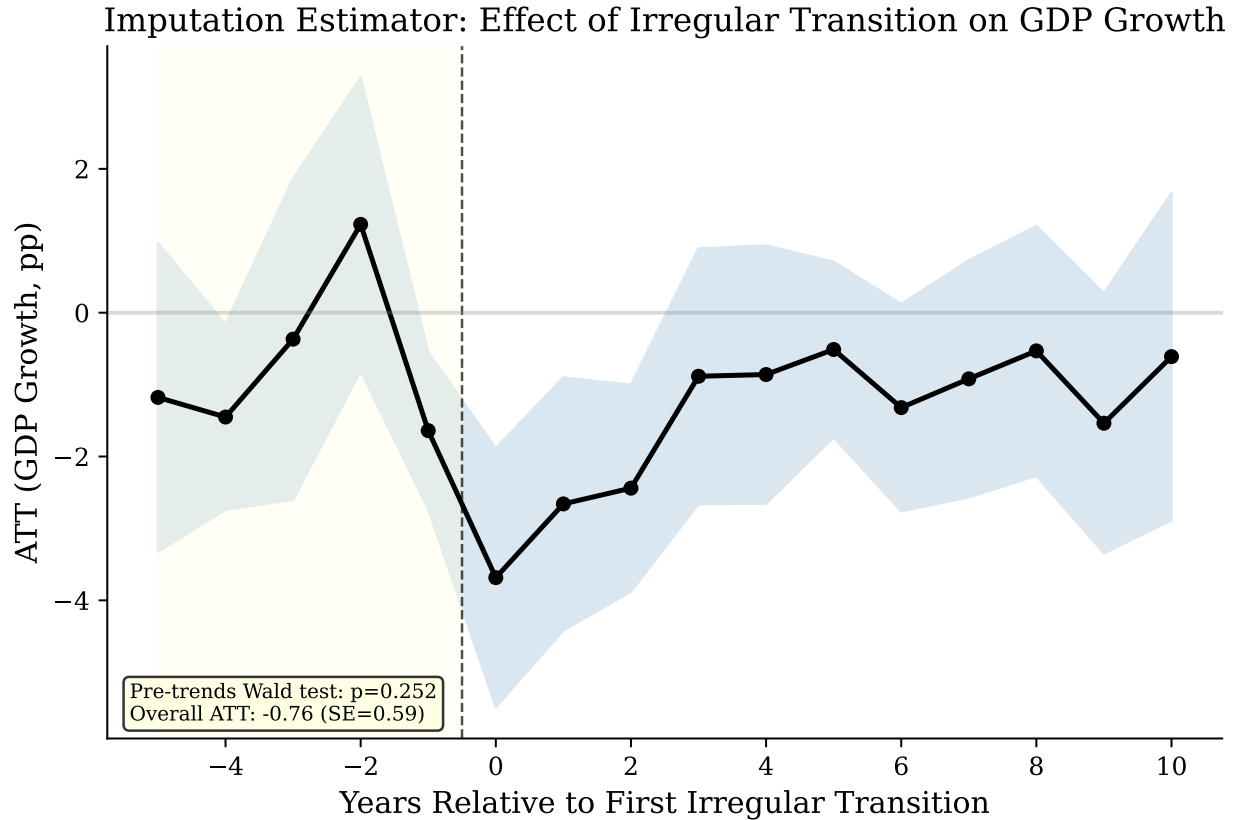


Figure 5: BJS Imputation Event Study — Effect of Irregular Transition on GDP Growth

5.4 The Null Engine Channel

5.4.1 Twelve Causal Tests

ADRI does not predict growth rates under autocracy. Figure 6 presents 12 independent causal tests as a forest plot — none yields a robust positive effect. Nine of twelve are null ($p > 0.10$). The two significant results are *negative* (IV cross-section $\beta = -5.19$, $p = 0.03$;

period analysis $\beta = -6.20$, $p = 0.04$), reflecting convergence. The one nominally positive result (dynamic panel $\beta = 20.1$, $p = 0.03$) has an implausibly large coefficient suggesting specification issues. Propensity score matching — the cleanest comparison — finds matched high- and low-ADRI autocracies grow at effectively identical rates (3.67 vs. 3.65%, $p = 0.98$). Among autocracies, the ADRI-growth relationship was positive before 1990 ($\beta = 2.88$, $p = 0.04$) and negative after ($\beta = -6.20$, $p = 0.04$) — period dependence inconsistent with a stable causal relationship.

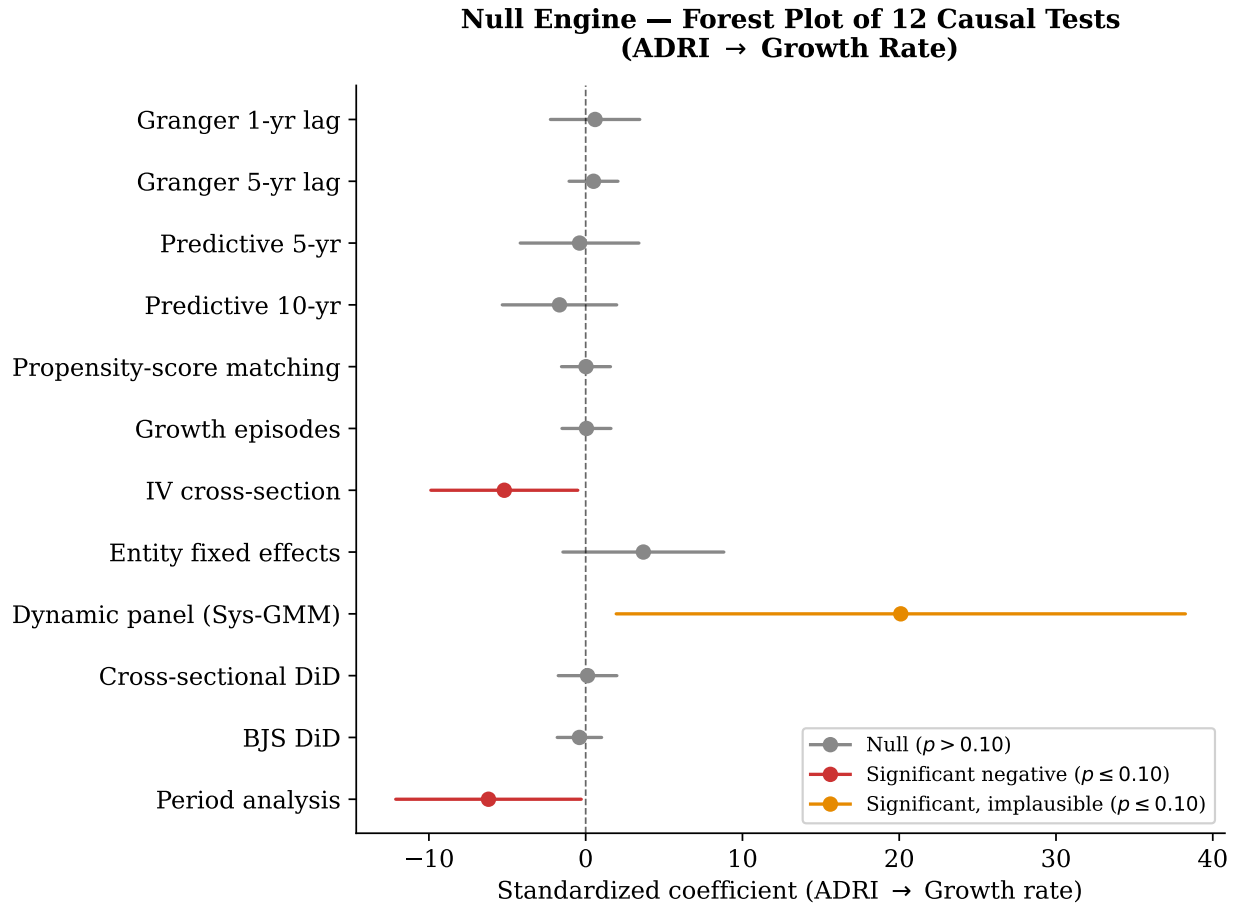


Figure 6: Null Engine — Forest Plot of 12 Causal Tests of ADRI → Growth Rate

ADRI's cross-sectional correlation with GDP levels is real ($p < 0.001$) but vanishes with two-way fixed effects, country-specific trends, and first-differencing — consistent with selection rather than causation. The FMQ $\times$ Autocracy interaction ($\beta = 11.127$, $p < 0.001$) is consistent with H4: low-FMQ autocracies show systematically larger gaps between reported

growth and structural fundamentals [Martinez, 2022]. Online Appendix B reports both analyses in full.

6 Decomposition: Succession Institutionalization as the Key Dimension

The composite ADRI results in Section 5 establish that institutional insurance predicts growth protection and regime survival. This section decomposes the composite to identify which institutional dimensions drive the result and tests the composite against V-Dem polyarchy — the leading existing measure of institutional quality among autocracies. The central finding is that succession institutionalization (SI) is the specific component that captures information existing measures miss.

6.1 Component Horse Race

Table 8A: Component Decomposition — Political Stability (DV: P(irregular exit), logit horse race)

Component	All (N=1,145)	Autocracies (N=528)	Post-1975 Autocracies (N=447)
SI	−4.764***	−4.239***	−4.408***
SET	0.279	0.346	−0.230
FMQ	−2.265***	−1.812*	−1.657*
SETR	1.331†	1.003	0.005
CSI	−3.257***	−3.090**	−3.031**

Notes: Logit coefficients from horse race regressions with all five components entered simultaneously. Controls: autocracy, ln(GDP), pre-5yr growth. Country-clustered SEs. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, † $p < 0.15$.

Political components (SI, FMQ, CSI) dominate across all subsamples. SET is null in every specification (all $p > 0.55$). The pattern is consistent: the economic component of ADRI does not protect regimes from collapse; the political components do.

No individual component achieves significance on mean signed growth change (all $p > 0.10$;

Online Appendix B, Table 8B) — consistent with the insurance mechanism operating through political stability (Table 8A) rather than direct economic channels. For crash prevention specifically, all components contribute (CSI $\beta = -3.51$, SETR $\beta = -3.18$, SI $\beta = -2.24$, FMQ $\beta = -2.14$, SET $\beta = -1.13$; all $p < 0.05$). Mechanism decomposition following ANRR (2019, Section V) shows differentiated patterns: SET predicts manufacturing preservation ($\beta = 3.29$, $p < 0.001$), SI predicts legislative and judicial stability (both $p < 0.001$), FMQ predicts merit recruitment preservation ($\beta = 0.38$, $p = 0.005$). Online Appendix B reports the full decomposition.

6.2 Tenure-Decay: The Dynamics of Institutional Erosion (H5)

The model's most distinctive prediction concerns dynamics: institutional quality should decline with leader tenure in personalist regimes (where the hazard rate rises endogenously) but not in regimes with institutionalized power-sharing. This prediction distinguishes the framework from static institutional theories that treat institutional quality as fixed.

We test this using the full ADRI panel ($N = 9,397$ country-years, 174 countries), regressing ADRI on leader tenure interacted with regime type. The results confirm the prediction:

- Closed autocracies: -0.0055 ADRI points per year of leader tenure ($p < 0.001$)
- Electoral autocracies: -0.0026 /year ($p = 0.002$)
- Democracies: $+0.0045$ /year ($p < 0.001$)

The gradient is monotonic and the sign reversal between autocracies and democracies is striking: institutions erode under concentrated power and deepen under distributed power. Over 20 years of personalist rule, ADRI declines by 0.11 — approximately the distance between Rwanda's current score (0.33) and Ethiopia's pre-crisis score (0.27) at Meles's death. This implies that Rwanda's already low institutional insurance is deteriorating: Kagame's 30-year tenure predicts a cumulative decline of 0.17 ADRI points, enough to move from the second to the first ADRI quintile.

The tenure-decay dynamic also explains why late-tenure succession crises are empirically common: institutional quality is lowest precisely when the leader is oldest and succession is most imminent. The model predicts a “succession trap” in which the leaders who most need institutional insurance are those least likely to have built it. Online Appendix B reports the full regression (Table H5).

6.3 SI vs. Polyarchy

V-Dem polyarchy is the leading existing measure of institutional quality for cross-national analysis. A natural question is whether SI captures information beyond what polyarchy already measures. We test ADRI and its components against polyarchy using per-standard-deviation coefficients ($N = 728$ with both measures; $r(\text{ADRI}, \text{polyarchy}) = 0.68$).

Full sample horse race:

Outcome	ADRI (per SD)	p	Polyarchy (per SD)	p
Growth change			−0.93	<0.001
P(irregular exit)	−0.12	<0.001	−0.06	<0.001
Cox survival (HR)	0.70	0.109	0.42	<0.001

For growth volatility, ADRI absorbs polyarchy. For regime stability, both contribute independently. For Cox survival, polyarchy absorbs ADRI. Likelihood ratio test: polyarchy adds to ADRI at $p < 0.001$; ADRI adds to polyarchy at $p = 0.098$.

Among autocracies ($N = 309$), composite ADRI loses to polyarchy on every outcome. However, SI reverses the result:

Component	Cox HR/SD (+ polyarchy)	p	Polyarchy HR (+ component)	p
SI	0.72	<0.001	0.85	0.128

Component	Cox HR/SD (+		Polyarchy HR	
	polyarchy)	p	(+ component)	p
FMQ	2.02	0.011	0.38	<0.001
SETR	0.99	0.906	0.75	0.005
CSI	1.14	0.256	0.70	0.003
SET	0.95	0.634	0.75	0.013

SI is the only component that adds predictive power beyond polyarchy among autocracies. When SI is included, polyarchy drops to $p = 0.128$. SI correlates only $r = 0.304$ with polyarchy among autocracies — it captures distinct information. FMQ’s positive HR (2.02) is an artifact of multicollinearity ($r = 0.938$ with polyarchy among autocracies).

Full-sample components vs. polyarchy. Four of five ADRI components add for growth volatility beyond polyarchy: SI ($p = 0.032$), FMQ ($p < 0.001$), SETR ($p = 0.004$), CSI ($p < 0.001$). SET is absorbed.

Interpretation. The composite ADRI does not dominate polyarchy — an expected result given that FMQ correlates $r = 0.94$ with polyarchy among autocracies. But the decomposition reveals that SI captures information polyarchy does not. Polyarchy measures electoral competitiveness; SI measures whether mechanisms exist for selecting the next leader. These are conceptually and empirically distinct ($r = 0.304$ among autocracies). Among autocracies, SI is the stronger predictor of regime survival after the founder’s departure, and it is the only component that renders polyarchy insignificant. The leader-death natural experiment confirms this: SI predicts post-death stability (Fisher $p = 0.0009$) while polyarchy does not ($p = 0.454$).

7 Robustness

Specification curve. Across 64 specifications varying outcome, controls, sample, and estimator: 61/64 (95.3%) are significant for $| \text{growth change} |$; 32/32 (100%) for $P(\text{irregular exit})$. All coefficients are negative.

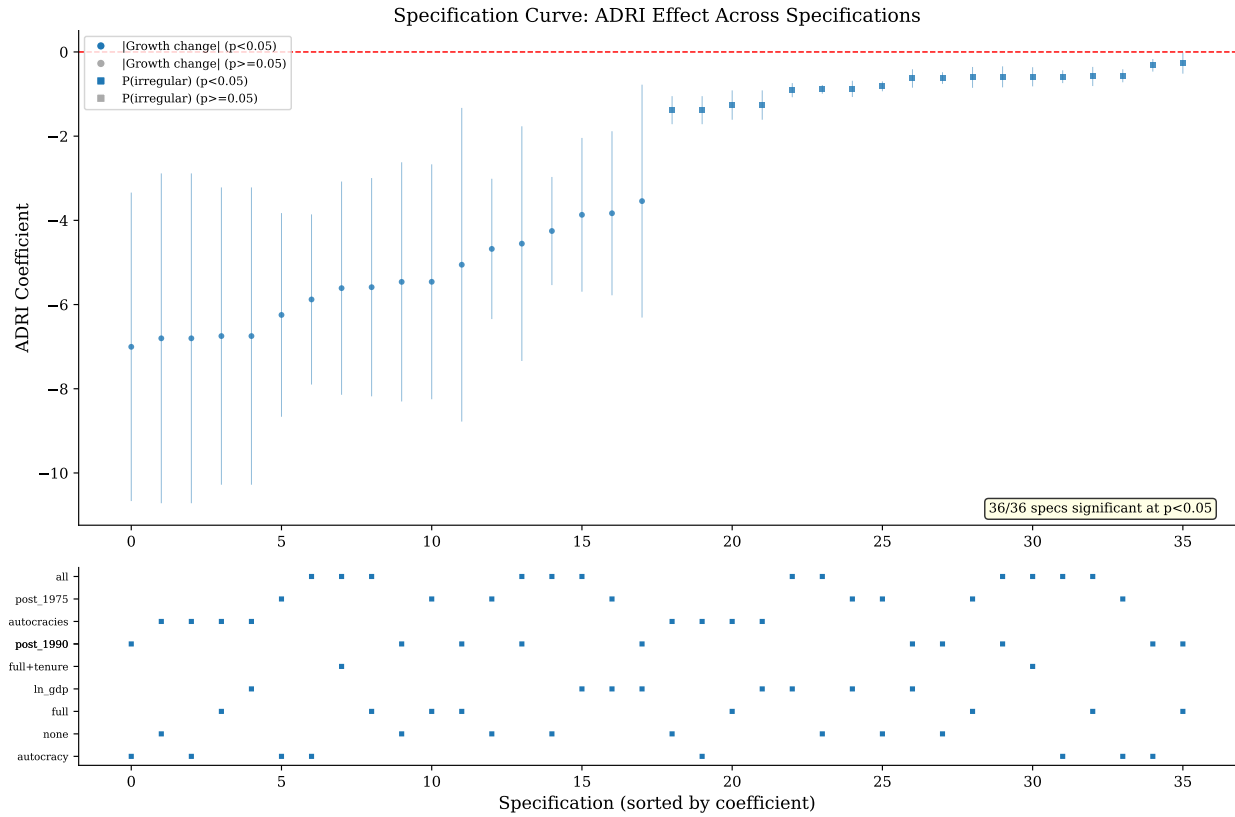


Figure 7: Specification Curve Analysis

Leave-one-out. Excluding each of 160 countries: $| \text{growth change} |$ coefficient ranges from -6.23 to -4.54 , all $p < 0.001$. $P(\text{irregular exit})$ ranges from -0.62 to -0.53 , all $p < 0.001$. Leave-one-region-out confirms: excluding any of seven World Bank regions, both outcomes remain significant at $p < 0.001$. No single country or region drives the results.

Oster bounds. $\delta = -5,795$ for irregular exit (unobservables would need to be $\sim 6,000\times$ more important than all observables). $\delta = -3.09$ for $| \text{growth change} |$. Both exceed $| \delta | > 1$ threshold. Crash prediction ($\delta = -0.78$) and signed growth change ($\delta = -0.12$) are fragile.

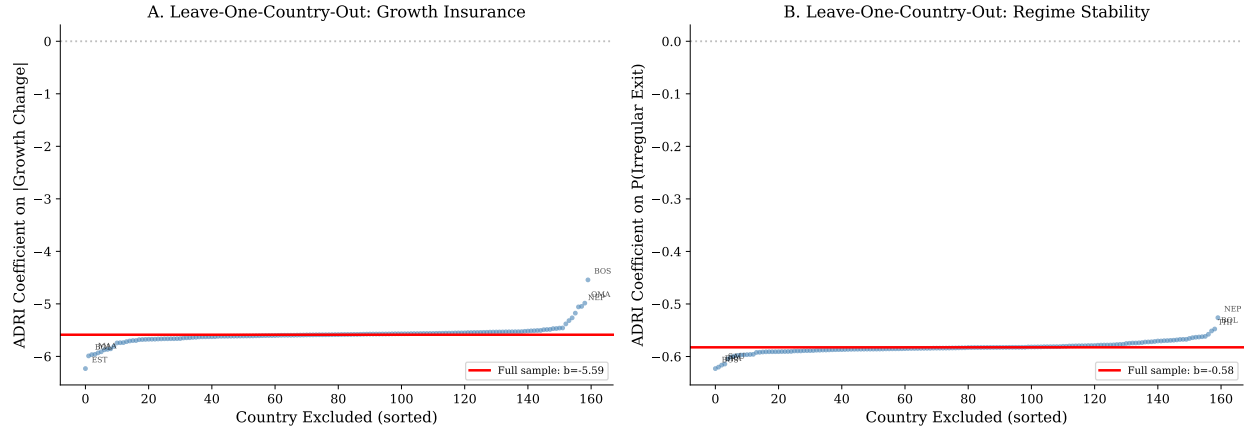


Figure 8: Leave-One-Country-Out Sensitivity

V-Dem expert coding. If V-Dem experts code institutions higher for regimes they perceive as stable, ADRI would mechanically predict stability. Four features of the design address this. First, V-Dem coding is contemporaneous: country-year scores reflect expert assessments at that point in time, not retrospective judgments about outcomes. V-Dem experts in 1990 could not code institutions based on whether Singapore’s growth would survive through 2024. The relevant variation is in the cross-section of institutional scores at the time of each transition, not in post-hoc assessments of success. Second, SET is constructed entirely from World Bank WDI data with no expert coding; SET alone predicts crash prevention ($\beta = -1.13$, $p < 0.05$ in the component horse race). Third, the leader-death identification is immune to retrospective coding bias — expert assessments cannot cause a leader to die, so the SI result (6.7% vs. 44.8%, $p = 0.0009$) exploits genuinely exogenous variation. Fourth, replacing expert-coded components with mechanically measured alternatives (SET + WGI Government Effectiveness) preserves the Cox result ($p < 0.01$), though concordance decreases from 0.802 to 0.734. Expert coding contributes precision but does not drive the finding.

Out-of-sample validation. All in-sample results could reflect overfitting. We test predictive accuracy using three hold-out designs:

Table 9: Out-of-Sample Predictive Accuracy (Cox Concordance)

Design	Train	Test	Concordance
In-sample (baseline)	Full	Full	0.802
10-fold CV (200 reps)	90%	10%	0.799 (SD = 0.040)
Temporal hold-out	Pre-2000	Post-2000	0.792
Geographic hold-out (mean)	6 regions	1 region	0.745
Best: Europe & Central Asia			0.902

in-sample estimate. The framework’s predictions generalize forward in time. The geographic hold-out identifies MENA as a scope condition (concordance = 0.534): ADRI does not capture the clan-based, sect-based, or monarchy-specific dynamics governing succession in that region.

Additional robustness. Wild cluster bootstrap, two-way clustering, E-values, CHR bounds, Romano-Wolf stepdown, GWF regime type controls, Glaeser et al. kitchen-sink controls, generated regressor correction, falsification tests with predetermined placebos, temporal falsification for reverse causality, Benjamini-Hochberg FDR, and the personalist penalty test all support the core findings. The stability result (irregular exit) survives every test. The growth-change result shows more heterogeneity across subsamples. Online Appendix B reports all results in full, including:

- CHR bounds: stability CI excludes zero at $\gamma = \pm 2$ SD; growth-change CI does not
- WCB: all core results $p < 0.001$
- Two-way clustering: SEs decrease for | growth change| (ratio = 0.70)
- Romano-Wolf: 6/7 outcomes survive at family-wise $p < 0.05$
- Oster: $\delta = -5,795$ (irregular exit), $\delta = -3.09$ (| growth change|)
- Reverse causality: delta_ADRI null at $k = 5$ and $k = 10$ years
- Cross-domain: World Bank GDP outcomes are independent of V-Dem/Archigos construction data

8 Application: Rwanda

Rwanda’s mechanical ADRI of 0.33 — with SI = 0.19, SET = 0.37, FMQ = 0.21, SETR = 0.55, CSI = 0.32 — places it in the same structural category as Ethiopia under Meles (ADRI = 0.27), which collapsed into civil war within six years of the founder’s death.

Model-based prediction. Logistic regression ($N = 1,459$): $P(\text{irregular successor exit}) =$

39.6% (bootstrap 95% CI: 35.3–43.9%). Cox model: median successor regime survival = 10.5 years; $P(\text{survive 5 years}) = 66.1\%$. OLS: $\text{expected } |\text{growth change}| = 3.83\text{pp}$ (prediction interval: 0–12.37pp).

Empirical frequency. Among 341 autocratic transitions with ADRI in $[0.25, 0.40]$, 37.0% ended irregularly — consistent with the model prediction.

Cost quantification. BJS estimates that irregular transitions cause -3.7pp GDP crash lasting two years. At $P(\text{irregular}) = 0.37$, the expected growth cost is $\sim 1.4\text{pp}/\text{year}$ over the first two post-succession years.

Counterfactual. Raising ADRI from 0.33 to 0.50 reduces $P(\text{irregular})$ from 39.6% to 19.6%. Raising to 0.60 reduces it to 12.0%. The specific prescriptions: institutionalize succession (SI from 0.19 to 0.50), diversify the economy (SET from 0.37 to 0.60), introduce genuine feedback mechanisms (FMQ from 0.21 to 0.35). Each prescription requires the incumbent to accept constraints on personal authority.

Other-country predictions. Vietnam (ADRI = 0.41): moderate sustainability, contingent on maintaining party-over-person dynamics; a key indicator is whether the next transition follows established rotation or breaks it. China (ADRI = 0.42, declining): Xi’s dismantling of Deng’s constraints predicts slower growth and eventual succession crisis, though deep structural transformation (SET = 0.82) provides economic insurance Rwanda lacks. Botswana (ADRI = 0.67): high sustainability, confirmed by the October 2024 party transfer of power — the ruling BDP collapsed to 4 seats and the president conceded defeat.

Burundi — sharing nearly identical geography, colonial history, ethnic composition, and pre-conflict income — provides the closest comparison. Rwanda averaged 7.4% GDP growth (2000–2022) versus Burundi’s 2.4%, with the key difference being mode of conflict termination: decisive military victory versus negotiated settlement. Online Appendix D presents the full comparative analysis including Mozambique and Costa Rica counterfactuals. Online Appendix E examines seven boundary conditions — cases the framework was not designed to explain —

including resource states, post-Soviet EU accession, and democratic underperformance.

9 Limitations and Conclusion

9.1 Limitations

Single-pass construction. ADRI has not undergone external replication. The out-of-sample exercises provide evidence of stability but are not equivalent to independent reproduction.

V-Dem proxy limitations. Singapore's SI of 0.37 understates the reality of four PM transitions. Expert-coded data carry known biases.

Archigos coverage. Transitions through 2015 only. Post-Mugabe Zimbabwe, post-Bashir Sudan, and the Xi consolidation are not in the sample.

MENA scope condition. Concordance = 0.534, near chance levels. ADRI does not capture the clan-based, sect-based, or monarchy-specific dynamics governing succession in MENA.

Endogeneity of institutional investment. The framework explains consequences of institutional investment, not why some leaders invest and others do not.

Case selection bias. The detailed case studies (online appendix) were chosen to illustrate the framework's insurance profiles. The quantitative analysis uses the full universe of transitions, addressing this concern for the statistical results but not the qualitative narratives.

9.2 What Replication Would Look Like

The framework's credibility depends on independent reproduction. We provide a roadmap:

Immediate replication (no new data). Any researcher with access to V-Dem v15, World Bank WDI, and Archigos 4.1 can reconstruct every ADRI score mechanically using the construction rules specified in Section 3. The Cox model (H2), the OLS growth-change specification (H1), and the leader-death natural experiment should be reproducible to the decimal.

Near-term extensions. Archigos 5.0, when available, would add the post-Mugabe transition in Zimbabwe (2017), the post-Bashir transition in Sudan (2019), and the Abiy Ahmed consolidation in Ethiopia (2018–present). These are genuine out-of-sample tests: the framework’s predictions for these cases were generated before the outcomes were observed.

High-priority extensions. Constructing ADRI from alternative institutional datasets (Polity V, Freedom House, QoG) would test whether results depend on V-Dem specifically. Subnational panel analysis (India’s states, China’s provinces) would address cross-country confounding.

The out-of-sample test. Rwanda’s succession — whenever it occurs — provides a direct test. The prediction is specific: $ADRI = 0.33$ predicts a 40% probability of irregular successor exit (bootstrap 95% CI: 35–44%). If Rwanda sustains its developmental trajectory through a leadership transition without prior institutional deepening, the framework would be weakened in its primary application.

9.3 Conclusion

The results support the insurance interpretation over the engine interpretation. Among leaders who died in office, succession institutionalization predicts successor stability (6.7% vs. 44.8% irregular exit, Fisher $p = 0.0009$) while V-Dem polyarchy does not ($p = 0.454$). Full-sample Cox models are consistent ($HR = 0.57$, $p < 0.001$, concordance = 0.802), and ADRI predicts growth protection at transitions (all insurance channels $p < 0.001$). Twelve tests find no robust positive effect of ADRI on growth rates (matching $p = 0.98$). Institutions predict whether growth survives leadership transitions, not how fast it occurs.

The composite ADRI does not dominate V-Dem polyarchy — an expected result given that the composite’s FMQ component overlaps substantially with what polyarchy already measures. The decomposition, however, identifies the specific dimension — succession institutionalization — that captures information polyarchy does not: among autocracies, whether mechanisms exist for selecting the next leader. SI predicts regime survival beyond what competitive elections

capture ($HR/SD = 0.72$, $p < 0.001$, controlling for polyarchy). The paper's contribution is this decomposition, not the composite score.

The distinction between insurance and engine has implications for institutional design. Growth under autocracy is common (29.3% of country-decades). The binding constraint is not initiating growth but sustaining it through leadership transitions.

Rwanda's institutional profile ($ADRI = 0.33$, $SI = 0.19$) generates a specific, falsifiable prediction: absent institutional deepening, a 40% probability of irregular successor exit (95% CI: 35–44%). Ethiopia's trajectory — from sustained growth to civil war within six years of the founder's death — illustrates the risk. The prediction will be tested by Rwanda's eventual succession.

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This appendix is organized as follows. Appendix A provides the full formal model and derivations. Appendix B reports additional empirical results, including IV estimates, event study coefficients, mediation analysis, the measurement channel, extended robustness checks, and heterogeneity analysis. Appendix C presents six detailed case studies (Singapore, South Korea, Ethiopia, Vietnam, China, Botswana). Appendix D provides comparative ADRI scores and cross-case analysis, including the Rwanda comparative counterfactuals. Appendix E examines seven boundary conditions and stress-test cases. Appendix F analyzes the aid-state capacity relationship.

A Formal Model and Derivations

This appendix provides the full formal model summarized in Section 2.3 of the main paper, including derivations and extensions.

A.1 Setup

Consider a leader at time $t = 0$ who allocates a fixed per-period budget B between visible outputs v_t (infrastructure, health systems, business rankings) and institutional investments i_t (independent judiciary, succession mechanisms, constitutional constraints), subject to $v_t + i_t = B$. Visible outputs generate immediate flow utility αv_t . Institutional investments generate flow βi_t beginning at $t + k$ (maturity lag), accruing to whoever holds power — which may not be the current leader.

Let $\lambda(t)$ denote the instantaneous hazard rate. The leader captures institutional returns only with probability $S(t, k) = \exp(-\int_t^{t+k} \lambda(s) ds)$. With pure time preference ρ , the interior solution requires:

$$\frac{\beta \cdot e^{-\lambda k}}{\rho + \lambda} \geq \alpha$$

The left-hand side is strictly decreasing in λ : as the hazard rate rises, institutional investment becomes less attractive.

A.2 Comparative Static 1: Allocation

Claim. $\partial i^*/\partial \lambda < 0$. Higher hazard rates produce lower institutional investment.

Derivation. Differentiating the left-hand side with respect to λ :

$$\frac{\partial}{\partial \lambda} \left[\frac{\beta e^{-\lambda k}}{\rho + \lambda} \right] = \beta \cdot \frac{-k e^{-\lambda k} (\rho + \lambda) - e^{-\lambda k}}{(\rho + \lambda)^2} = \frac{-\beta e^{-\lambda k} [k(\rho + \lambda) + 1]}{(\rho + \lambda)^2} < 0$$

since all terms in brackets are positive. The expected return to institutional investment is strictly decreasing in the hazard rate. At the interior solution, a marginal increase in λ reduces i^* proportionally.

A.3 Comparative Static 2: Tenure-Decay

In personalist regimes, the hazard rate is endogenous: $d\lambda/dt = -\phi(i_t) + \psi(t)$, where $\phi(i_t)$ captures institutional investment's hazard-reducing effect ($\phi' > 0$, $\phi(0) = 0$) and $\psi(t)$ captures the natural increase in hazard with tenure ($\psi > 0$, reflecting elite fatigue, succession uncertainty, and health deterioration).

When $i_t \approx 0$, $d\lambda/dt = \psi(t) > 0$: the hazard rate rises monotonically. Combined with Comparative Static 1, this produces a vicious cycle: low institutional investment $\rightarrow$ rising hazard $\rightarrow$ further reduction in institutional investment. This is the lifecycle trajectory documented by Geddes et al. [2018], who find that personalist regimes have a median duration of ~ 15 years with 50% breakdown probability by year 20.

A.4 Comparative Static 3: Two Equilibria

Define $\bar{\lambda}$ as the hazard rate satisfying $\beta e^{-\bar{\lambda}k}/(\rho + \bar{\lambda}) = \alpha$ — the threshold above which the expected return to institutional investment falls below the return to visible outputs. Once $\lambda > \bar{\lambda}$, the leader optimally sets $i^* = 0$, which (by Comparative Static 2) ensures λ continues to rise. The system has two stable states:

1. **High-institutionalization equilibrium** ($\lambda < \bar{\lambda}$): Institutional investment reduces the hazard, maintaining the incentive to invest. Self-reinforcing. Example: Singapore.
2. **Low-institutionalization trap** ($\lambda > \bar{\lambda}$): No institutional investment, rising hazard, further disincentive. Self-reinforcing. Examples: Rwanda (ADRI = 0.33, SI = 0.19), Ethiopia under Meles (ADRI = 0.27).

The transition from equilibrium 1 to equilibrium 2 can occur through exogenous shocks (coups, crises) that raise λ above $\bar{\lambda}$, or through the leader's failure to invest in institutions during the early tenure period when λ is still low enough for investment to pay off.

A.5 Parameter Sensitivity

The threshold $\bar{\lambda}$ depends on three parameters: β/α (relative value of institutional vs. visible payoffs), k (maturity lag), and ρ (pure time preference).

If $\alpha = \beta$, institutional investment fails whenever $e^{-\lambda k}/(\rho + \lambda) < 1$, which holds for any $\lambda > 0$ when $k > 0$. That *some* autocrats invest (Singapore, pre-Xi China) implies $\beta > \alpha$: institutional payoffs must exceed visible-output payoffs per unit, reflecting the compounding nature of institutional returns.

The maturity lag k is the key sensitivity parameter: at $k = 5$ years, a leader with median autocratic hazard ($\lambda = 0.05$) faces $e^{-0.25} = 0.78$ — 78% of nominal value retained. At $k = 15$ years, $e^{-0.75} = 0.47$ — more than half discounted away. This explains the empirically observed pattern: autocrats invest in fast-maturing institutions (anti-corruption agencies,

economic planning boards) before slow-maturing ones (judicial independence, press freedom). Rwanda's investment profile is consistent: SETR (0.55) and CSI (0.32) exceed FMQ (0.21) and SI (0.19).

A.6 Structural Transformation Extension

Structural transformation (τ) enters through a separate channel, determining post-transition growth depreciation: $g_{\text{post}} = g_{\text{pre}} \cdot (1 - \delta_g(1 - \tau))$. When $\tau = 1$ (complete transformation), growth survives regardless of political instability; when $\tau = 0$, growth is entirely dependent on political continuity. GDP measurement error μ is decreasing in feedback mechanism quality (FMQ), creating attenuation bias in reported-GDP regressions.

B Additional Empirical Results

This appendix reports empirical results referenced but not displayed in the main paper.

B.1 B.1 IV Estimates

Table B1: IV Estimates — ADRI and Political Stability (Irregular Exit, LPM)

Specification	$\beta(\text{ADRI})$	SE	p	N
OLS (LPM)	−0.919	0.080	<0.001	1,439
IV: Regional ADRI	−2.511	0.344	<0.001	1,439
IV + regional GDP control	−0.887	0.300	0.004	1,439
IV + own $\ln(\text{GDP})$ control	−1.531	0.318	<0.001	1,439

Anderson-Rubin weak-IV-robust 95% CIs: irregular exit $[-1.32, -1.06]$, | growth change| $[-3.60, 0.02]$. Hausman test rejects OLS consistency for both outcomes ($p < 0.001$). The

direction of IV correction — 2SLS nearly three times larger than OLS — is consistent with measurement error attenuation in V-Dem proxies.

Two supplementary instruments produce qualitatively consistent results. A *colonial origin* IV (10 categories following La Porta et al. 1998; AJR 2001) captures historically determined institutional inheritance. A *Bartik shift-share* IV (first-stage $F = 104.8$) interacts initial ADRI with subsequent global institutional trends.

B.2 Event Study Coefficients

Table B2: Event Study Coefficients (Continuous ADRI, Normalized to $t-1$)

Event time	β	SE	p	N
t-5	-1.20	1.31	0.15	1,324
t-4	-0.73	1.15	0.22	1,353
t-3	-1.60	1.14	0.05	1,383
t-2	-1.98	1.16	0.02	1,425
t-1	0.00	—	—	1,459
t = 0	2.86	1.04	0.03	1,459
t+1	-2.20	1.34	0.03	1,459
t+2	-1.52	1.06	0.04	1,459
t+3	-1.23	1.09	0.08	1,459
t+4	-2.23	0.99	0.003	1,459
t+5	-3.53	0.86	<0.001	1,459

Pre-trends: joint $F = 0.33$, $p = 0.89$. Individual pre-period coefficients at $t-3$ and $t-2$ are marginally significant ($p = 0.05, 0.02$) but the joint test is strongly null.

B.3 BJS Imputation Event Study Coefficients

Table B3: BJS Imputation Event Study — Effect of Irregular Transition on GDP Growth

Event time	ATT	SE	p
t−3	−0.37	1.14	0.747
t−2	1.23	1.04	0.238
t−1	−1.64	0.56	0.003
t = 0	−3.68	0.92	<0.001
t+1	−2.66	0.90	0.003
t+2	−2.44	0.73	<0.001
t+3	−0.88	0.91	0.330
t+4	−0.86	0.92	0.348
t+5	−0.51	0.62	0.411

Pre-trends: Wald test $\chi^2(5) = 6.60$, $p = 0.25$. $N = 81$ treated countries, 93 never-treated.

B.4 Mediation Analysis

We test whether ADRI's growth protection operates through regime stability using the Baron-Kenny framework. When irregular exit is included alongside ADRI in predicting | growth change|, ADRI retains its full significance ($\beta = -3.82$, $p < 0.001$) while irregular exit is small and insignificant ($\beta = -0.12$, $p = 0.55$). The Sobel test is null ($z = 0.52$, $p = 0.61$), with only 5% of the total effect mediated. In a kitchen-sink mediation with all channel variables ($N = 305$), the direct ADRI effect remains significant ($\beta = -3.90$, $p < 0.001$), with observable channels explaining only 8.4% of the total effect. The remaining 91.6% operates through unmeasured channels — possibly policy continuity, investor confidence, administrative capacity, or succession certainty.

B.5 Counterfactual GDP Trajectories

High-ADRI and low-ADRI autocracies crash at virtually identical rates (7.0% vs. 7.2% of years, $p = 0.82$). Monte Carlo simulation indicates the 0.2pp crash-rate differential produces only a 1% GDP gap over 30 years. The compound interest mechanism is not supported.

B.6 Measurement Channel (H4)

Table B4: Growth Reporting Gap Analysis

Variable	β	SE	p
FMQ	-13.065	2.005	<0.001
Autocracy	-8.413	1.597	<0.001
FMQ $\times$ Autocracy	11.127	2.254	<0.001
ln(GDP)	0.608	0.144	<0.001

$N = 1,459$. $R^2 = 0.043$.

The positive FMQ $\times$ Autocracy interaction is consistent with H4: among autocracies, higher FMQ is associated with more conservative GDP reporting — low-FMQ autocracies show systematically larger gaps between reported growth and structural fundamentals [Martinez, 2022]. Among liberal democracies (where GDP data is constrained by independent statistical agencies), ADRI predicts growth ($\beta = 10.80$, $p < 0.001$). Among autocracies, the coefficient vanishes. Higher-ADRI autocracies report conservatively ($\beta = -2.25$, $p = 0.038$).

B.7 Regional and Subsample Heterogeneity

The insurance effect holds across all six World Bank regions: Sub-Saharan Africa ($\beta = -11.02$, $p < 0.001$), Latin America ($\beta = -8.38$, $p < 0.001$), East Asia ($\beta = -10.75$, $p < 0.001$), South Asia ($\beta = -9.04$, $p = 0.004$), MENA ($\beta = -4.11$, $p = 0.012$), Europe & Central Asia ($\beta =$

−10.24, $p < 0.001$). The effect holds across all income terciles (all $p < 0.001$). Among closed autocracies (48% irregular exit rate), ADRI logit $\beta = -4.45$ ($p = 0.003$); among electoral autocracies (28%), $\beta = -5.79$ ($p < 0.001$); among electoral democracies, null ($p = 0.60$) — institutional quality matters less when institutionalized exit mechanisms already exist.

The stability result is robust across subsamples: significant in 5 of 7 world regions, all income terciles, and every decade from the 1960s through 2010s. The | growth change| result shows more heterogeneity: significant in 4 of 7 regions, the high-income tercile only, and concentrated in 1960–1980. MENA is a scope condition (concordance = 0.534).

B.8 Extended Robustness Battery

Wild cluster bootstrap. All transition-level results survive: | growth change| WCB $p < 0.001$, P(irregular exit) WCB $p < 0.001$, P(crash) WCB $p < 0.001$.

Two-way clustering. SEs for | growth change| decrease with two-way clustering by country and decade (SE ratio = 0.70). P(irregular exit) SEs virtually unchanged (ratio = 0.93).

E-values. For multivariate Cox (HR = 0.57): E-value = 2.9.

CHR bounds (Conley, Hansen, and Rossi 2012). Relaxing the IV exclusion restriction:

		$\gamma =$	$\gamma =$	$\gamma =$	
Outcome	$\gamma = 0$	$\pm 0.5 \times \text{SE}$	$\pm 1.0 \times \text{SE}$	$\pm 2.0 \times \text{SE}$	Excludes 0?
P(irregular exit)	[−1.33, −1.05]	[−1.36, −1.01]	[−1.40, −0.98]	[−1.48, −0.90]	Yes at all
Growth change			[−3.63, 0.02]	[−4.10, 0.49]	[−4.56, 0.97]

Multiple hypothesis correction. Romano-Wolf stepdown: 6/7 insurance outcomes survive at family-wise $p < 0.05$. Only signed growth change fails (RW $p = 0.36$).

898 **GWF regime type.** ADRI adds 0.027 concordance over regime type alone (0.801 vs. 0.774).
 899 ADRI significant ($p < 0.001$) controlling for regime type.

900 **Glaeser et al. controls.** P(irregular exit): ADRI survives kitchen sink with $\ln(\text{GDP})$,
 901 $\ln(\text{population})$, electoral democracy, rule of law, and full institutional battery ($\beta = -0.70$, p
 902 < 0.001 , $N = 687$).

903 **Generated regressor.** Cluster bootstrap SE inflation: $1.01\times$ for $|\text{growth change}|$, $1.14\times$
 904 for P(irregular exit). Negligible.

905 **Falsification.** Predetermined placebos (odd/even year, leap year, first letter of leader name,
 906 country name length) all null. ADRI predicts several quasi-predetermined outcomes but
 907 adding all as controls, $|\text{growth change}|$ remains significant ($\beta = -4.60$, $p = 0.005$).

908 **Temporal falsification / reverse causality.** For regime stability, delta_ADRI is null at k
 909 $= 5$ ($p = 0.23$) and $k = 10$ ($p = 0.12$). ADRI is highly persistent (lag-1 $r = 0.99$, lag-5 $r =$
 910 0.94 , lag-10 $r = 0.89$).

911 **Out-of-sample.** 10-fold CV (200 folds): mean test concordance $= 0.799$ ($\text{SD} = 0.040$).
 912 Temporal hold-out (train pre-2000, test post-2000): concordance $= 0.792$. Geographic
 913 hold-out: mean $= 0.745$, range 0.534 (MENA) to 0.902 (Europe & Central Asia).

914 **Benjamini-Hochberg FDR.** 6/7 outcomes survive at $q < 0.05$. Only signed growth change
 915 fails ($q = 0.109$).

916 **Personalist penalty.** Both ADRI and closed-autocracy dummy significant jointly (ADRI: β
 917 $= 3.029$, $p < 0.001$; personalist: $\beta = 1.297$, $p < 0.001$). ADRI captures information beyond
 918 the GWF personalist/institutional distinction.

919 **Cross-domain construct validation.** World Bank GDP outcomes are independent of
 920 V-Dem/Archigos construction data.

B.9 Component Decomposition — Economic Resilience

Table 8B: Component Decomposition — Economic Resilience (DV: signed growth change)

Component	β	SE	p	Std. β
SI	−1.079	1.142	0.345	−0.044
SET	0.148	0.680	0.828	0.007
FMQ	−0.546	0.868	0.529	−0.033
SETR	1.084	0.669	0.105	0.069
CSI	1.875	1.155	0.105	0.092
ln(GDP)	−0.580***	0.122	<0.001	−0.201
Pre-5yr growth	−0.630***	0.030	<0.001	−0.681

*Notes: OLS coefficients. DV = signed growth change at transition. Country-clustered SEs. Std. β = standardized coefficient. $N = 1,145$. $R^2 = 0.495$. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*

B.10 Tenure-Decay Regression

Table H5: ADRI as Function of Regime Tenure by Type (N = 9,397, 174 countries)

Variable	β	SE	p
Tenure (years)	−0.00091	0.00039	0.020
Tenure $\times$ Closed Autocracy	−0.00457	0.00051	<0.001
Tenure $\times$ Electoral Autocracy	−0.00170	0.00055	0.002
Tenure $\times$ Democracy	0.00536	0.00048	<0.001
ln(GDP)	0.06384	0.00704	<0.001

930 $R^2 = 0.621$. *Country-clustered SEs.*

931 C Case Studies

932 D C.1 Introduction

933 The companion paper, “Institutions as Insurance: How Institutional Quality Determines
 934 Whether Growth Survives Leadership Transitions,” establishes a central empirical finding:
 935 institutional quality, as measured by the Authoritarian Development Resilience Index (ADRI),
 936 powerfully predicts whether autocratic growth survives the founding leader’s departure. Each
 937 standard deviation increase in ADRI reduces irregular exit risk by 43% (multivariate Cox
 938 $HR = 0.57$, $p < 0.001$, concordance = 0.802). Twelve causal tests return null results for
 939 institutions causing faster growth — the mechanism is insurance, not engine. Institutions
 940 determine whether growth *survives* leadership transitions, not how fast it occurs during the
 941 founding leader’s tenure.

942 The quantitative evidence establishes the pattern. This companion paper provides the case
 943 evidence underlying the theoretical framework. Each case study is designed to illuminate a
 944 specific dimension of the insurance theory:

945 **Singapore** (Section C.2) demonstrates maximum insurance — Path B, where a develop-
 946 mental autocracy builds institutional infrastructure sufficient to sustain growth through four
 947 successive leadership transitions, producing a 176-fold increase in GDP per capita from \$516
 948 to \$90,674. Singapore’s ADRI of 0.65 is the highest among the primary cases, reflecting insti-
 949 tutionalized succession, structural economic transformation, calibrated feedback mechanisms,
 950 transparent state capitalism, and meritocratic civil service independence.

951 **South Korea** (Section C.3) demonstrates transformation as insurance — Path C, where
 952 the depth of structural economic transformation compensates for the near-total absence of

institutional succession mechanisms. Park Chung-hee built no succession institution and was assassinated by his own intelligence chief. But Samsung, Hyundai, and POSCO had become autonomous economic actors whose productive momentum survived political crisis and eventually generated the conditions for democratic transition.

Ethiopia (Section C.4) provides the most devastating evidence for what awaits personalist developmental authoritarianism. The EPRDF maintained genuine Leninist organizational infrastructure — deeper than nearly any other African ruling coalition — yet that infrastructure proved insufficient to survive the founder’s departure. Within six years of Meles Zenawi’s death, Ethiopia descended from “African miracle” to civil war.

Vietnam (Section C.5) illustrates collective authoritarianism as insurance — Path D, where power distributed among multiple institutional actors provides resilience against the personalist capture that destroyed Ethiopia’s developmental gains. Eight General Secretary transitions since 1960, with no post-Ho Chi Minh leader accumulating personalist dominance, demonstrate collective leadership as a functional substitute for democratic accountability.

China (Section C.6) provides the framework’s most dramatic illustration of institutional fragility. Deng Xiaoping’s carefully engineered constraints — term limits, age norms, collective leadership — were systematically dismantled by Xi Jinping within five years, demonstrating that authoritarian institutional constraints have no independent enforcement mechanism.

Botswana (Section C.7) represents the democratic counterfactual — Path A, demonstrating that inclusive institutions can produce rapid development in Africa, demolishing the claim that the continent faces a forced choice between democracy and development. The October 2024 party transfer of power — the ruling BDP collapsed to 4 seats and the president conceded defeat — was a milestone no other case in this analysis has achieved.

Stress tests (Appendix E) examine seven additional cases selected because each challenges a specific prediction of the framework: Taiwan, India, Tanzania, Chile, Japan, Gulf states, and post-Soviet states.

The cases are scored on the ADRI framework’s five components: Succession Institutionalization (SI), Structural Economic Transformation (SET), Feedback Mechanism Quality (FMQ), State Economic Transparency and Restraint (SETR), and Civil Service Independence (CSI). Appendix D presents the comparative ADRI scores, and Section D.2 summarizes what the cases collectively reveal about the boundary conditions of the insurance theory.

D.1 Methodological note on case selection

The cases were selected to bracket the full range of developmental outcomes and institutional configurations:

By path type. Path A (democratic development): Botswana, India. Path B (institutional authoritarian development): Singapore, Taiwan. Path C (transformation as insurance): South Korea. Path D (collective authoritarian development): Vietnam, China (pre-Xi), Ethiopia (pre-2001). Path E (personalist authoritarianism): Rwanda, Ethiopia (post-2001), China (under Xi), Chile (under Pinochet).

By outcome. Sustained success: Singapore, South Korea, Botswana, Taiwan. Moderate success with ongoing risk: Vietnam, China. Collapse: Ethiopia. Untested: Rwanda. Democratic underperformance: India, Tanzania. Transition from E to A: Chile.

By region. East Asia: Singapore, South Korea, Japan, Taiwan, China, Vietnam. Sub-Saharan Africa: Botswana, Ethiopia, Rwanda, Tanzania. Latin America: Chile. Middle East: Gulf states. Europe: Post-Soviet states. South Asia: India.

The regional diversity is deliberate: if the framework’s predictions hold only in East Asia, they lack generality. The inclusion of African cases (Botswana, Ethiopia, Rwanda, Tanzania) tests whether institutional mechanisms identified in East Asian contexts operate similarly under the different conditions — colonial legacies, ethnic fragmentation, lower state capacity, aid dependence — that characterize African development.

By ADRI level. The cases span the full ADRI range, from Ethiopia (0.27) through Rwanda (0.33), Vietnam (0.41), China (0.42), Singapore (0.65), and Botswana (0.67) to post-democratization South Korea (0.81). This range allows the framework to be tested across different levels of institutional quality, identifying thresholds above which developmental sustainability is likely and below which it is not.

The three primary cases (Singapore, South Korea, Ethiopia) are presented at full analytical length — approximately 10,000-16,000 words each — because each illuminates a different dimension of the insurance theory in sufficient detail to demonstrate the causal mechanisms. The three reference cases (Vietnam, China, Botswana) are presented at moderate length — approximately 4,000-6,000 words each — because they extend the framework’s applicability to additional path types. The seven stress tests are presented more concisely — approximately 500-1,000 words each — because their analytical purpose is to identify boundary conditions rather than to trace full causal processes.

D.2 A note on sources

The case studies draw on a range of primary and secondary sources. Primary sources include declassified diplomatic cables (accessed through WikiLeaks and the U.S. National Security Archive), government reports (economic plans, budget documents, statistical bulletins), constitutional texts, and published interviews with key participants. Secondary sources include the academic literature on developmental states (Johnson, Amsden, Wade, Evans, Kohli), authoritarian governance (Geddes, Wright, Frantz; Svobik; Gandhi), institutional economics (North, Acemoglu, Robinson), and country-specific scholarship cited throughout. The use of WikiLeaks cables deserves specific comment: these confidential diplomatic assessments, written by U.S. embassy personnel for internal consumption rather than public advocacy, provide unusually candid assessments of political dynamics that official sources and academic analyses may sanitize. Their inclusion is not intended to privilege the U.S. perspective but to access the candid private assessments that public diplomacy and much academic analysis

lack.

World Bank World Development Indicators (WDI), IMF World Economic Outlook, V-Dem Institute datasets, and Polity V data provide the quantitative backbone for cross-case comparisons. GDP per capita figures are generally reported in current U.S. dollars unless otherwise specified, to maintain consistency with the most commonly cited development benchmarks. Growth rates are real (inflation-adjusted) unless otherwise noted. Population and employment figures are drawn from national statistical agencies and cross-referenced with World Bank data where available.

E C.2 Singapore: Maximum Insurance (Path B, ADRI = 0.65)

E.1 Starting conditions

On August 9, 1965, Singapore was expelled from the Federation of Malaysia. Lee Kuan Yew wept on national television. The country was a swampy island of 1.9 million people with GDP per capita of approximately \$516, no natural resources, no hinterland, limited freshwater (imported from Malaysia, which had just expelled them), racial tensions between Chinese (76%), Malay (15%), and Indian (7%) populations, a communist insurgency, and British military bases that accounted for a significant share of employment. Unemployment was roughly 14%. The country's sole geographic advantage was its position on the Strait of Malacca, through which roughly 40% of global trade passes.

Nothing about Singapore's position in 1965 predicted what it would become within a single generation. But, as with South Korea, the starting conditions contained institutional assets invisible to aggregate statistics.

British colonialism in Singapore, unlike Belgian colonialism in Rwanda, was extractive but

institution-building. Raffles' founding decision in 1819 — to establish Singapore as a free port with no tariffs — created a competitive advantage that persists two centuries later. The Crown Colony administration (from 1867) built English common law, a meritocratic civil service tradition, a functioning port with established global trading connections, and English as the language of administration and commerce. These were institutional assets designed to serve British commercial interests, but they proved directly transferable to developmental purposes after independence. Lee Kuan Yew made the deliberate decision to build on rather than dismantle this inheritance: retaining English as the primary language of government and education (a choice that connected Singapore to the global economy), professionalizing the British-style civil service rather than purging it, and deepening the common law legal infrastructure that provided the contract enforcement and property rights protections essential for attracting multinational capital.

The contrast with Rwanda is analytically decisive. Belgian colonialism destroyed pre-colonial social fluidity by hardening identity categories, dismantling indigenous governance mechanisms, and creating institutional pathologies that culminated in genocide. British colonialism in Singapore created functional administrative infrastructure. Singapore inherited institutional assets that could be redirected toward development. Rwanda inherited institutional rubble from which development had to be built despite — not because of — the colonial legacy. This difference in colonial inheritance is a critical but undertheorized determinant of post-independence developmental trajectories.

E.2 The Winsemius blueprint and the founding of the EDB (1961-1965)

Before independence, Singapore had already begun its institutional construction. In 1960, the newly self-governing state invited Albert Winsemius, a Dutch economist working with the United Nations, to conduct an appraisal of Singapore's economic prospects. Winsemius

visited twice, in 1960 and 1961, and produced a 1963 UN report, *A Proposed Industrialization Programme for the State of Singapore*, that became the architectural blueprint for Singapore's transformation.

Winsemius laid two preconditions for Singapore's success, as Lee Kuan Yew later recounted [Lee, 2000]. First, eliminate the communists who made any economic progress impossible. Second, do not remove the statue of Stamford Raffles — a symbolic signal that Singapore accepted its British heritage and would not alarm foreign investors with anti-colonial radicalism. In Winsemius's own words, from a 1982 oral history interview (Singapore National Archives): "Number one is: get rid of the Communists; how you get rid of them does not interest me as an economist, but get them out of the government, get them out of the unions, get them off the streets. . . . Number two is: let Raffles stand where he stands today." Lee recalled: "To tell me in 1961, when the communist united front was at the height of its power and pulverizing the PAP government day after day, that I should eliminate the communists left me speechless." Here was a United Nations advisor telling an ostensibly democratic government to "eliminate" its main political rivals. The advice was cold-blooded and historically consequential. Lee followed both recommendations.

The substantive recommendations were equally consequential. Winsemius proposed import substitution industrialization to generate employment — more than 200,000 new jobs had to be created in the 1960s alone, with about half in manufacturing, a daunting target given that manufacturing accounted for only about 27,000 jobs or 7.5% of total employment in 1960 (UN, *A Proposed Industrialization Programme for the State of Singapore*, 1963; Singapore Government, SG101). He recommended targeted industries including chemicals, building materials, steel-rolling, shipbuilding, and electrical appliances, to be developed through joint ventures with well-known foreign firms. He proposed converting the Jurong area — then largely swamps, mangroves, and abandoned plantations — into a major industrial estate to decentralize manufacturing from the city center and leverage deep-water access for exports.

And he recommended the creation of a statutory board to execute the industrialization strategy.

Following the Winsemius report, the Legislative Assembly passed an Act in 1961 to create the Economic Development Board (EDB). The EDB became the institutional mechanism through which Singapore's developmental state operated — not a central planning commission in the Soviet sense, but a pragmatic agency that identified target industries, recruited multinational corporations, negotiated incentive packages, and adjusted strategy decade by decade. The EDB's institutional DNA — technocratic, pragmatic, responsive to market signals but not passive before them — was established in its founding moment and persists to the present day.

Winsemius himself served as Singapore's chief economic adviser from 1961 to 1984, working closely with Lee Kuan Yew and key ministers including Goh Keng Swee and Hon Sui Sen. With Winsemius's help, Singapore attracted major oil companies including Shell and Esso to establish refineries. His own assessment of Singapore's success was characteristically anti-romantic: "There was never a Singapore miracle. It was simply hard-headed policy" (quoted in Quah, Iuldashov, and Lee, *Albert Winsemius and Singapore: Here It Is Going to Happen*, World Scientific, 2022).

E.3 Goh Keng Swee: the architect of the economic state

Any account of Singapore's development that focuses exclusively on Lee Kuan Yew misrepresents the institutional reality. Goh Keng Swee — Deputy Prime Minister, Minister for Finance (1959-1965, 1967-1970), Minister for Defence (1965-1967, 1970-1979), Minister for Education (1979-1984) — was the operational architect of Singapore's economic transformation. If Lee was the political strategist who ensured the PAP's dominance and Singapore's survival, Goh was the institutional builder who designed and implemented the economic machinery.

Goh's approach was characterized by relentless pragmatism and a distrust of ideological

rigidity. He established the EDB, designed the Jurong Industrial Estate, co-founded the Development Bank of Singapore (DBS) in 1968, created the Government of Singapore Investment Corporation (GIC) in 1981 to manage the nation's foreign reserves, and oversaw the establishment of the Ministry of Defence and Singapore Armed Forces. His economic philosophy was captured in a formulation that could serve as the motto of every successful developmental state: identify what works, implement it, measure the results, adjust. No ideology. No permanent commitments to any particular economic model.

Goh's tenure as Education Minister (1979-1984) produced reforms that directly supported the Second Industrial Revolution: the streaming of students by ability, the expansion of technical and vocational education, and the creation of specialized institutions to produce the skilled workforce that higher-value industries required. The alignment between industrial policy and education policy — with the same minister overseeing both in sequence — illustrates the institutional coordination that characterizes Singapore's developmental state.

E.4 The education and civil service pipeline: meritocratic reproduction

The civil service pipeline is itself an insurance mechanism. The Public Service Commission (PSC) scholarships — highly competitive awards that send top students to elite universities worldwide (Oxford, Cambridge, Harvard, Stanford) in exchange for a bond of service in the civil service or military — function as a recruitment mechanism for the governing elite. Scholarship recipients enter the Administrative Service (the fast-track senior civil service), serve in multiple ministries and statutory boards, and are evaluated for political potential. Those identified as promising are invited to stand for election on the PAP ticket. This pipeline produced Goh Chok Tong (a Colombo Plan scholar), Lee Hsien Loong (a PSC scholar to Cambridge and Harvard Kennedy School), and numerous cabinet ministers.

The system's meritocratic character is genuine within its own terms: admission is by academic

performance, advancement is by assessed competence, and the pipeline is open to all ethnic groups. But it is also a mechanism of elite reproduction: the children of successful civil servants and professionals disproportionately enter the pipeline, creating a governing class that is technically competent but socially narrow. Michael Barr’s critique — that the system produces “technocrats selected through interviews, psychological evaluations, and closed-door consultations rather than grassroots political involvement” — identifies the trade-off: the pipeline ensures competence but may not ensure the political instinct needed to navigate crises that technocratic training does not prepare leaders for.

E.5 Phase 1: Labor-intensive manufacturing (1965-1979)

The immediate post-independence crisis demanded speed. The British military withdrawal, announced in January 1968, threatened to eliminate 20% of Singapore’s GDP. The withdrawal would be completed by 1971, eliminating 38,000 military and civilian jobs and the spending of 55,000 British military personnel and their dependents. Unemployment was severe. The EDB’s first mandate was simple: create jobs. The strategy was multinational recruitment — inviting global manufacturers to set up export-oriented factories in Singapore, drawn by low wages, political stability, English-speaking workers, and an absence of corruption.

The Jurong Industrial Estate, built on Winsemius’s recommendation, became the physical infrastructure of this strategy. What had been swampland — “Goh’s folly,” critics called it, after the minister who championed it — became factories producing garments, wigs, toys, and basic electronics assembly. Initially, the estate struggled to attract tenants. By 1963, only 12 companies had set up operations. But the momentum built. Texas Instruments established Singapore’s first semiconductor assembly plant in 1968 — a decision driven by the EDB’s aggressive courtship, which offered tax holidays, subsidized factory space, and a guarantee of labor peace (the Employment Act of 1968 had curtailed union power). National Semiconductor followed. Hewlett-Packard set up operations. By the early 1970s, Singapore had become a significant node in the global electronics supply chain — not designing chips,

1179 but assembling them at costs lower than Japan but with quality higher than most developing
1180 alternatives.

1181 The EDB's recruitment method was personal and aggressive. EDB officers were posted to
1182 overseas offices — New York, London, Tokyo, Frankfurt — with the specific mandate to
1183 identify and court individual companies. The pitch was not merely low wages but *reliable* low
1184 wages: a government that controlled labor relations (the NTUC, Singapore's umbrella trade
1185 union, was effectively a PAP affiliate), provided factory space through JTC Corporation,
1186 offered tax holidays through Pioneer Industry status, and guaranteed that investments
1187 would not be nationalized, expropriated, or subjected to post-hoc regulatory changes. For
1188 multinational manufacturers accustomed to the political risks of developing-country operations
1189 — expropriation in Egypt, policy reversals in India, instability in Southeast Asia — Singapore's
1190 institutional predictability was the competitive advantage.

1191 The results accumulated quickly. By 1970, foreign-owned firms accounted for 84% of direct
1192 exports. Singapore's manufacturing sector grew from 12% of GDP at independence to 22%
1193 by 1975. The EDB's strategy created a manufacturing base that was overwhelmingly foreign-
1194 owned but domestically employed — the inverse of the resource nationalism that characterized
1195 many post-colonial development strategies. The government accepted foreign ownership as
1196 the price of rapid employment creation and technology transfer. This pragmatism — choosing
1197 outcomes over ideological purity — is characteristic of the institutional flexibility that the
1198 insurance framework measures.

1199 The petroleum refining sector developed in parallel. Shell had established a refinery on Pulau
1200 Bukom in 1961 — before independence — and Esso (later ExxonMobil) followed. Singapore's
1201 position on the Strait of Malacca made it a natural location for refining, but the government's
1202 contribution was institutional: stable regulatory environment, efficient port infrastructure,
1203 and freedom from the corruption and policy instability that plagued alternative locations.
1204 By the mid-1970s, Singapore had become the world's third-largest oil refining center — a

position it maintains today.

The strategy worked on its own terms. GDP per capita reached roughly \$900 by 1970 and approximately \$2,500 by 1975. Full employment was effectively achieved by the mid-1970s. But the EDB understood that labor-intensive manufacturing was a transitional phase, not a destination. As wages rose — inevitably, in a city-state with a limited labor force — the competitive advantage would erode. The question was whether Singapore could move up the value chain before low-wage competitors (Malaysia, Thailand, Indonesia, China) undercut its position.

E.6 Phase 2: The Second Industrial Revolution (1979-1985)

The answer was one of the most deliberately engineered structural transformations in economic history. In 1979, the government launched what it called the “Second Industrial Revolution” — a policy of deliberately raising wages to force companies to automate, upgrade technology, and move into higher-value production. The National Wages Council (NWC), under founding chairman Professor Lim Chong Yah, adopted a three-year corrective wage policy: recommended wage increases of approximately 12% in 1979, 15% in 1980, and 12-16% in 1981 — far above productivity growth. Employer CPF contribution rates were simultaneously raised from 16.5% of wages in 1978 to 25% by 1984, and a Skills Development Fund levy of 2% (rising to 4% in 1980) was imposed.

The logic was brutal and deliberate: make low-skill, low-technology production unprofitable, forcing firms to either upgrade or leave. The government was willing to sacrifice some employment in labor-intensive sectors to accelerate the transition to skill-intensive and capital-intensive production. Electronics assembly gave way to precision engineering, petrochemical refining, and ship repair. The government invested heavily in technical education — polytechnics, the National University of Singapore’s engineering programs, specialized training institutes — to create the human capital that higher-value industries required.

The strategy was not without domestic costs. Companies that could not upgrade did leave. Workers in declining sectors faced dislocation. Unit labor costs in manufacturing rose at an annual average rate of 11.5% in 1980-82 before moderating to 5.5% in 1983-84. Actual wage increases exceeded the NWC recommendations by an average of 2.4 percentage points per year between 1980 and 1984 — the policy triggered expectations that ran ahead of the government's own targets. But the PAP's electoral dominance insulated the government from the short-term political consequences that would have forced a democratic government to reverse course. This is the developmental advantage of authoritarian insulation — and its corresponding risk: without electoral feedback, the government could also persist with a failing strategy longer than a democracy would tolerate.

The corrective wage policy also produced a lasting institutional innovation: the National Wages Council itself, a tripartite body bringing government, employers, and unions together, became a permanent mechanism for managing labor costs. The NWC's annual recommendations — non-binding but nearly universally followed — allowed the government to adjust wage growth year by year without legislative action. This flexibility would prove critical during the 1985 recession and again during the 1997 Asian Financial Crisis and the 2008 Global Financial Crisis. The NWC is a minor institution that receives little attention in developmental state literature, but it exemplifies the kind of pragmatic institutional innovation — a standing mechanism for coordinated wage adjustment — that distinguishes Singapore's developmental state from more rigid command economies.

E.7 Phase 3: Crisis and reinvention (1985-1986)

The risk materialized in 1985, when Singapore entered its first post-independence recession. GDP contracted by 1.4%. The wage correction policy, combined with a global slump in electronics demand, had squeezed margins too aggressively. The government's immediate response revealed the institutional flexibility that distinguishes successful developmental states from rigid ones.

In March 1985, Trade and Industry Minister Tony Tan formed an Economic Committee, chaired by then-Minister of State Lee Hsien Loong — aged 33, already being groomed for higher office. The committee’s full report, released in February 1986 as *The Singapore Economy: New Directions*, recommended cutting CPF employer contributions by 15 percentage points, imposing temporary wage restraint, reducing corporate and income taxes, and introducing wage flexibility (the “flexible wage system,” where 20% of wages would be variable and tied to company performance). The committee also recommended increased public development spending, privatization and deregulation to establish the private sector as the new driver of growth, and continued movement up the value chain in the long term.

The recommendations were controversial. The CPF cuts provoked strong objections — workers saw their forced savings reduced to bail out corporate profitability. But the government implemented them rapidly and comprehensively. Singapore’s growth rate bounced to 10.8% in 1987, kicking off a decade of strong growth.

The 1985 recession is analytically important for the insurance framework. It demonstrated that Singapore’s institutional apparatus could: (a) recognize a policy failure quickly; (b) assemble a credible review mechanism (the Economic Committee); (c) recommend painful reversals (the CPF cut and wage restraint); and (d) implement them over domestic opposition. A declassified CIA intelligence assessment from October 1985 — EA 85-10172, *Singapore’s Lee Kuan Yew: Is the Magic Fading?* — captured external uncertainty at the time. The assessment noted that Singapore had averaged 9.2% annual real growth during 1961-81, but that “a poor showing by Lee’s People’s Action Party in the December 1984 election” had “encouraged many among the city-state’s traditionally docile populace to support opposition political positions.” The CIA’s question — whether the magic was fading — was answered not by Lee personally but by the institutional system he had built. The recovery was engineered by the committee structure, not by the founder’s charisma.

E.8 Phase 4: Services hub and knowledge economy (1990s-2000s)

The post-recession period saw Singapore's most ambitious sectoral diversification. Growing labor costs and globalization in the 1990s pushed the EDB beyond manufacturing into services: finance, logistics, regional headquarters operations, and eventually biomedical sciences.

The Asian Dollar Market and financial center development. Singapore's emergence as a global financial center was not an accident of geography but of deliberate regulatory architecture. The Asian Dollar Market (ADM), established in the late 1960s when Bank of America set up the first Asian Currency Unit (ACU), exploited a simple regulatory innovation: ACUs were subject to fewer regulatory requirements than Domestic Banking Units (DBUs) — no statutory reserves for deposit liabilities, fewer restrictions on non-Singapore-dollar transactions. This created an offshore banking platform analogous to London's eurodollar market.

The results were dramatic. ACU assets climbed from 28% of DBU assets in 1970 to a peak of 596% in 1987 — total ACU assets reached 11 times Singapore's GDP. By 1997, the ADM peaked at \$560 billion in total assets. Singapore became the fourth-largest foreign exchange market after London, New York, and Tokyo. The institutional architecture mattered: the Monetary Authority of Singapore (MAS) handled financial sector regulation and promotion, while the EDB focused on the real economy — a separation of institutional roles relatively unique among developmental states.

The late 1990s brought "Big Bang" financial reforms. Singapore moved away from its multi-tiered banking license system, upgrading existing Qualifying Offshore Banks to Wholesale Bank status and allowing foreign banks expanded access to Singapore dollar operations. The Singapore International Arbitration Centre (SIAC), established in 1991, and the Singapore International Commercial Court (SICC), established in 2015, provided the legal infrastructure for cross-border commercial disputes — deliberately building Singapore as a dispute resolution hub. By acceding to the New York Convention on arbitral awards in 1986, Singapore ensured

that its commercial law system was credibly international.

Regionalization and the headquarters strategy. Growing labor costs and Singapore's physical constraints — 733 square kilometers with a labor force that could not be expanded without politically sensitive immigration — pushed the EDB toward a new model. Rather than producing goods in Singapore, the strategy was to make Singapore the place from which regional production was *managed*. The EDB promoted Singapore as a hub and headquarters for firms seeking to manufacture in neighboring Indonesia, Malaysia, Thailand, and eventually Vietnam and China. This required a different value proposition: not cheap labor but institutional quality — political stability, incorruptible bureaucracy, enforceable contracts, excellent telecommunications and transport infrastructure, and a time zone convenient for managing operations across Asia.

The Small Enterprise Bureau, opened by the EDB, encouraged local businesses to integrate into multinational supply chains, improving their operations and connecting them to export markets. More multinational corporations located their regional headquarters in Singapore, creating demand for supporting business services — law firms, accounting practices, consulting companies, and the financial services to fund regional expansion. By the late 1990s, cumulative investment by American companies alone in Singapore reached approximately \$20 billion in total assets.

The Industry 21 blueprint. In 1999, the EDB launched its economic blueprint for the twenty-first century, “Industry 21,” identifying nine strategic clusters: electronics, chemicals, life sciences, engineering, education, healthcare, logistics, communications and media, and headquarters and business services. The blueprint represented a shift from Singapore-as-factory to Singapore-as-hub — the value proposition was no longer cheap labor but institutional quality: low corruption, efficient infrastructure, English-speaking workforce, enforceable contracts, and political stability.

The biomedical sciences bet. Perhaps the most ambitious sectoral gamble was the push

into biomedical manufacturing, beginning in earnest around 2000. The government created Tuas Biomedical Park — 890 acres of specifically zoned land on Singapore’s western tip — and aggressively recruited global pharmaceutical companies. Within two years of the park’s opening, Genentech, GlaxoSmithKline, Lonza, and Novartis announced five major biologics manufacturing facilities totaling \$1.5 billion in investment (EDB Singapore / A*STAR joint press release, 2009). Genentech’s facility alone cost approximately \$140 million, featuring four 20,000-liter bioreactors producing Avastin, Herceptin, and Lucentis. Lonza subsequently invested \$350 million in a second large-scale mammalian manufacturing plant, its third globally (Ministry of Trade and Industry Singapore, March 2007).

The results were measurable: Singapore’s biomedical manufacturing output expanded four-fold from \$4.4 billion in 2000 to \$17 billion by 2007, a compounded annual growth rate of 21%, far exceeding the industry’s global growth rate. By 2023, biomedical manufacturing generated S\$38.1 billion in output. The sector now hosts regional headquarters for over 80 leading companies, 60 manufacturing plants, and 30 R&D centers.

Jurong Island: infrastructure as institutional commitment. One of Singapore’s most remarkable physical investments was the reclamation and merger of seven small offshore islands into Jurong Island, a single integrated petrochemical hub. The project, conceived in the early 1990s and executed by JTC Corporation over more than a decade, created 3,000 hectares of industrial land linked to the mainland by a causeway (JTC Corporation). The island houses over 100 petroleum, petrochemical, and specialty chemical companies in an integrated complex where one company’s waste products serve as another’s inputs. The decision to create Jurong Island — a multi-billion-dollar, multi-decade infrastructure commitment — is the kind of investment that only a government with a long time horizon and institutional continuity would make. It is difficult to imagine a regime facing imminent leadership transition committing to a project whose returns accrue over decades.

E.9 Phase 5: Innovation economy and frontier challenges (2010s-present)

Singapore's current GDP per capita of \$90,674 (2024) — a 176-fold increase from independence — places it among the world's wealthiest nations. The economy has transitioned through smart nation initiatives, AI investment, sustainable finance, and advanced manufacturing. But Singapore faces the Japan problem identified in the stress tests: catch-up growth through directed investment becomes progressively harder at the technological frontier, where the targets for state direction are less clear and the need for decentralized, risk-taking entrepreneurship is greater.

The PAP's response has been characteristically institutional: creating venture capital funds (including the National Research Foundation, established in 2006 with a mandate to fund strategic research), establishing research universities (the Yale-NUS College experiment, the Singapore University of Technology and Design in collaboration with MIT), recruiting global talent through immigration policy (the Employment Pass and EntrePass schemes), and building physical infrastructure (one-north biopolis, Fusionopolis, the Punggol Digital District) designed to foster innovation clusters.

The tension is real. Singapore's venture capital ecosystem, while growing, remains small relative to Silicon Valley, Tel Aviv, or even Shenzhen. The culture of risk-taking and tolerance for failure that characterizes successful innovation ecosystems sits uneasily with the PAP's preference for planned outcomes and controlled processes. The 2004 WikiLeaks cable's observation — that "Singapore's sterile political culture robbed it of the risk-taking, creativity, and entrepreneurship that the PAP recognized Singapore would need" — identifies a structural tension that has not been resolved two decades later. Whether institutional instruments designed for a world of large-scale manufacturing investment decisions can be retooled for a world of start-up dynamism remains Singapore's central developmental challenge.

The total trajectory: \$516 in 1965 to \$90,674 in 2024. Each decade's transformation built the institutional capacity for the next.

E.10 Anti-corruption as institutional infrastructure: the CPIB

The Corrupt Practices Investigation Bureau (CPIB), established in 1952 under British colonial rule but transformed after independence into one of the world's most effective anti-corruption agencies, is a critical but often overlooked piece of Singapore's institutional architecture. The CPIB reports directly to the Prime Minister's Office (and, under certain circumstances, to the President), operates independently of the police, and has investigative powers that extend to all levels of government and the private sector.

Lee Kuan Yew made anti-corruption a personal crusade from the beginning, reasoning that foreign investors would not commit capital to a country where contracts could be overridden by bribes and officials could expropriate returns. The Prevention of Corruption Act (1960) and the Corruption, Drug Trafficking and Other Serious Crimes (Confiscation of Benefits) Act give the CPIB broad powers. Critically, the bureau has demonstrated willingness to investigate senior officials: in 1986, Minister for National Development Teh Cheang Wan was investigated for corruption and committed suicide before charges were filed. In 2013, the director of the Central Narcotics Bureau was convicted of corruption. These high-profile cases establish the credibility of the anti-corruption regime.

The institutional significance for the insurance framework is specific: anti-corruption enforcement creates the predictable institutional environment that attracts and retains foreign capital. Singapore consistently ranks among the top 5 in Transparency International's Corruption Perceptions Index (3rd in 2023). This ranking is not merely reputational — it reflects the institutional reality that contracts will be enforced, permits will not require bribes, and judicial decisions will not be for sale. This institutional predictability survives leadership transitions because the CPIB operates as an independent institution, not as an instrument of

any individual leader's personal integrity. A future prime minister could be corrupt, but the institutional machinery to detect and punish corruption would persist. This is insurance.

E.11 Water security: institutional planning across generations

Singapore's water strategy illustrates institutional planning on a timescale that no short-horizon regime would attempt. At independence, Singapore imported most of its freshwater from Malaysia under agreements dating to 1961 and 1962 — a strategic vulnerability that Malaysia has periodically weaponized in diplomatic disputes. The water agreements expire in 2011 and 2061; the 1961 agreement was not renewed.

The government's response was to develop what it calls the "Four National Taps": local catchment water (two-thirds of Singapore's land area is now catchment), imported water from Malaysia (declining), NEWater (high-grade reclaimed water, with the first plants opening in 2003), and desalinated water (the Tuas Desalination Plant, opened in 2005). NEWater now supplies up to 40% of Singapore's water demand and is projected to meet 55% by 2060. The desalination capacity is being expanded to provide an additional 30% by 2060.

The water strategy is a multi-decade, multi-billion-dollar infrastructure investment whose returns are measured in national survival rather than quarterly profits. PUB, Singapore's national water agency, operates with a planning horizon that extends to 2061 — the expiration of the second Malaysian water agreement. The investment in NEWater technology, which required public acceptance of drinking reclaimed water (the government conducted extensive public education campaigns, including having then-Prime Minister Goh Chok Tong drink NEWater at the 2002 National Day celebrations), demonstrates the capacity for politically difficult long-term planning that the insurance framework identifies as characteristic of high-ADRI regimes.

E.12 The PAP cadre system: institutional architecture of succession

Lee Kuan Yew's most consequential institutional innovation was not the EDB, not Temasek, not HDB housing — it was the People's Action Party's cadre system, the mechanism through which political succession is managed without elections serving as the primary selection device.

The system has Leninist organizational roots, deliberately adopted. In 1957, party chairman Toh Chin Chye restructured the PAP after the party's leftist faction won control of the Central Executive Committee (CEC) on August 9, 1957. Toh created a two-tier membership system: ordinary members (who can vote in elections) and cadres (an elite group who alone can vote in CEC elections). The cadre system was explicitly designed to prevent a populist or factional takeover — a solution to the same problem that Leninist parties solve through democratic centralism, adapted to Singapore's parliamentary context.

The mechanics are precise. A cadre is first nominated by a Member of Parliament from among branch activists or co-opted from the private sector or civil service. The candidate undergoes three sessions of interviews, each with four or five ministers or MPs. Approximately 100 candidates are nominated annually. The CEC — the party's highest decision-making body — then formally appoints cadres. Cadres have the right to attend party conferences and to vote for CEC members. The CEC consists of up to 18 members: 12 elected by cadres at biennial party conferences, plus up to 6 co-opted by the CEC itself.

The result is what Pang Cheng Lian described in her 1971 Oxford thesis as a system where “the cardinals appoint the pope and the pope appoints the cardinals.” The CEC selects cadres; cadres elect the CEC. The system is self-perpetuating by design — not a bug but a feature, intended to ensure that leadership selection is controlled by proven insiders rather than mass sentiment. Michael Barr, Associate Professor in International Relations at Flinders University and the leading academic critic of this system, characterizes it as deliberately Leninist and

self-perpetuating. His analysis identifies both the system's strength (extraordinary political stability, minimal factionalism compared to other single-party states) and its vulnerability (groupthink, rigidity, leaders selected through bureaucratic processes rather than political struggle).

The overlap between CEC membership and the cabinet is near-total. The secretary-general of the PAP is typically the prime minister. The CEC effectively selects the prime minister, the cabinet, and their successors — all within a closed loop of trusted insiders. This is not democratic succession, but it is *institutionalized* succession: the process has rules, participants, and constraints that exist independently of any individual leader's preferences.

E.13 Four PM transitions: the empirical test of institutional succession

The ultimate test of any succession institution is not its design but its performance under stress. Singapore has executed four prime ministerial transitions since independence. Each reveals different aspects of the system's institutional quality.

The Singapore Armed Forces as institutional investment. One institutional dimension often overlooked in developmental accounts is Singapore's military. The SAF, built from virtually nothing after independence (Singapore's defense had been provided by the British), became a central institution for both national security and elite formation. Israel's military advisors helped design the SAF in the late 1960s — a relationship that reflected Lee's pragmatic willingness to work with any country that could provide useful expertise, regardless of political sensitivities in Singapore's Muslim-majority neighborhood.

National Service (NS), introduced in 1967, requires all male citizens and permanent residents to serve two years of full-time military service followed by annual reservist obligations. NS serves multiple institutional functions beyond defense: it is a social integrator (forcing interaction across ethnic and class lines), an elite pipeline (SAF scholarships produce senior

officers who transition into the civil service and politics — Lee Hsien Loong was a brigadier general before entering politics, as were several other cabinet ministers), and a signal of long-term commitment (citizens who have invested two years of their lives in the country’s defense have a personal stake in its continued stability).

The defense budget, consistently around 3-4% of GDP (approximately S\$20 billion in recent years), funds not only conventional military capability but also defense technology (through ST Engineering, a Temasek-linked company) and cybersecurity infrastructure. Singapore’s defense establishment is, in institutional terms, a diversified investment in national resilience — an insurance policy against the physical vulnerability that comes with being a 733-square-kilometer city-state surrounded by larger neighbors.

Transition 1: Lee Kuan Yew to Goh Chok Tong (1990). Lee Kuan Yew publicly stated that he would not choose his own successor — he had observed how Winston Churchill and Deng Xiaoping had failed at succession. Instead, he instructed the second-generation leaders to select from among themselves, reasoning that they would then be more likely to support the new leader.

The decisive moment came on December 29, 1984, when Tony Tan — then Minister for Trade and Industry and Finance — invited eleven fellow second-generation cabinet ministers to his house. As recounted in *Tall Order: The Goh Chok Tong Story* [Peh, 2018], Goh was late to the meeting due to a constituency event. By the time he arrived, his colleagues had already reached their decision: Goh Chok Tong would be First Deputy Prime Minister, the position understood as heir apparent. Then-Law Minister S. Jayakumar, who was present, recalled: “We had no problem arriving at a unanimous decision that Chok Tong should be 1DPM.” Tony Tan himself said “the decision did not take long.”

The selection defied Lee’s own preference. Lee Kuan Yew favored Tony Tan for the prime ministership. But Lee accepted the second-generation leaders’ choice — a critical data point for institutional analysis. The founder’s personal preference was overridden by the

institutional process he had created. Goh became First Deputy Prime Minister in 1985, serving five years of apprenticeship before succeeding Lee as Prime Minister on November 28, 1990.

The Goh Chok Tong era: proving the system works without Lee. Goh Chok Tong's 14-year premiership (1990-2004) is the most important period for the insurance framework — it is the first sustained test of whether Singapore's institutions functioned without the founder at the helm. The answer was unambiguously affirmative, but with qualifications that reveal the system's internal tensions.

Goh was a different kind of leader than Lee: consultative rather than commanding, managerial rather than charismatic, inclined toward consensus rather than confrontation. He introduced the “Shared Values” initiative, expanded the Group Representation Constituency (GRC) system to ensure minority representation, and adopted a more accommodating stance toward political opposition — though the fundamental PAP dominance was never in question. His government navigated the 1997 Asian Financial Crisis, the September 11 aftermath, and the SARS epidemic of 2003, each time demonstrating institutional capacity for crisis management.

But Goh's premiership also revealed the limits of institutionalized succession. Lee Kuan Yew remained as Senior Minister (later Minister Mentor) with substantial informal influence. Goh himself acknowledged that Lee's continued presence was both an asset and a constraint. The WikiLeaks cables from this period paint a picture of a dual-power arrangement in which Goh managed day-to-day governance while Lee retained effective veto power over strategic decisions. This is a common pattern in developmental state successions — the founder “steps down” but retains influence — and it raises the question of whether the first succession was genuinely institutional or merely a rearrangement of formal titles over an unchanged power structure. The more meaningful test came later: Lee Kuan Yew's death on March 23, 2015, removed the founder from the system entirely. Singapore's governance continued without visible disruption — strong evidence that the institutional structures, not Lee's residual

influence, were carrying the weight.

Interlude: the Asian Financial Crisis as institutional stress test. Before the second PM transition, Singapore faced its most severe external economic shock: the 1997 Asian Financial Crisis. While Thailand, Indonesia, South Korea, and Malaysia suffered devastating currency collapses, Singapore's currency depreciated modestly and the economy contracted only briefly. The institutional reasons were specific: massive foreign reserves (managed by GIC and MAS), conservative fiscal policy (budget surpluses in most years), a sound banking system (supervised by MAS with capital adequacy ratios well above Basel requirements), and the absence of the crony capitalism and over-leveraged conglomerates that devastated Thailand and Indonesia. The government's response was characteristically institutional: a cost-cutting package (including CPF employer contribution cuts), economic restructuring incentives, and a Committee on Singapore's Competitiveness chaired by Deputy Prime Minister Lee Hsien Loong. Singapore emerged from the crisis faster than its neighbors, reinforcing the argument that institutional quality — not just good policies, but the institutional capacity to adjust policies rapidly under stress — is the critical differentiator.

Transition 2: Goh Chok Tong to Lee Hsien Loong (2004). Lee Hsien Loong's path to the prime ministership was longer and more complicated. He entered politics in 1984 — not at the behest of his father but at the invitation of Goh Chok Tong, who was then Defence Minister. He became Deputy Prime Minister in 1990 at age 38. His career was interrupted by a lymphoma diagnosis in 1992, requiring three months of chemotherapy (the cancer went into remission). He served as chairman of the Monetary Authority of Singapore from January 1998 and was appointed Finance Minister in November 2001, replacing Richard Hu. In this role he navigated the SARS crisis and proposed raising the GST from 3% to 5% in August 2003 — a politically unpopular but fiscally necessary decision that demonstrated the willingness to impose short-term costs for long-term stability.

Lee Hsien Loong's succession was shadowed by allegations of nepotism — he was, after

all, the eldest son of the founding Prime Minister. A declassified WikiLeaks cable (07SINGAPORE1404, titled “PM Lee Hsien Loong: Me and My (Dad’s) Shadow”) captures the institutional tension with unusual candor: “After almost three years as Prime Minister, Lee Hsien Loong still had not come out of the shadow of his father.” The cable noted that “LKY’s need for control and street-fighter instincts had not diminished now that his son was PM. At critical moments, LKY seemed unable to control an impulse to take center stage in public, leaving PM Lee to appear almost marginal.” A companion cable (06SINGAPORE3110, “Lee Kuan Yew: Minister and Patriarch”) observed that “in his two years as PM, Lee Hsien Loong had reversed only one significant policy of his father’s — the ban on casinos — in a calculated move to boost tourism and demonstrate independence.”

The succession to Lee Hsien Loong on August 12, 2004, tested a different dimension of institutional quality: could the system accommodate a dynastic transition without degenerating into hereditary rule? The answer was qualified. Lee Hsien Loong proved a competent prime minister who served 20 years. But the father’s continued presence as Senior Minister and then Minister Mentor — positions with no constitutional basis but enormous practical influence — demonstrated the limits of institutionalization when the founder is still alive and powerful.

Transition 3: The Heng Swee Keat false start. Lee Hsien Loong announced in 2012 that he did not want to remain Prime Minister beyond age 70. The initial succession plan centered on Deputy Prime Minister Heng Swee Keat, who was groomed through the Finance Ministry and elevated to DPM. But Heng stepped down from the succession path at age 60, citing his age as a factor — he judged he would not have enough years of service as PM to justify the transition. This was an institutional success, not a failure: the system’s selection criteria were transparent enough that a candidate could self-select out without crisis. No personalist autocracy has ever produced a comparable outcome.

Transition 4: Lawrence Wong (2024). Lawrence Wong was sworn in as Singapore’s fourth Prime Minister on May 15, 2024, at the Istana, led by Chief Justice Sundaresh Menon

in the presence of President Tharman Shanmugaratnam. Approximately 900 people attended the ceremony. Wong, then 51, became the first Prime Minister born after Singapore's independence — a generational marker of institutional maturity. Lee Hsien Loong remained as Senior Minister in Wong's cabinet.

Wong's first speech as Prime Minister captured the institutional self-consciousness that distinguishes Singapore's system: his mission, he said, was "to continue defying the odds and to sustain this miracle called Singapore." The phrasing reveals awareness that Singapore's success is not guaranteed — that it requires continuous institutional effort, not merely the inheritance of favorable conditions.

The 38th CEC, elected by cadres on November 24, 2024, completed the formal party succession: Wong's team controls the CEC, which controls the party, which controls the government. Four transitions. Each orderly. Each demonstrating that Singapore's governance quality is embedded in institutions, not personality. But the critical question — raised most forcefully by Michael Barr — is whether a leadership selected through bureaucratic evaluation rather than political struggle can navigate the less predictable challenges of Singapore's post-founding era. Barr argues that "today's cabinet consists largely of technocrats — former civil servants, military leaders, doctors and bankers — selected through interviews, psychological evaluations, and closed-door consultations rather than grassroots political involvement." Whether managerial competence substitutes for political vision under stress has not yet been tested.

E.14 Temasek Holdings: state capitalism as insurance

Temasek Holdings, incorporated on June 25, 1974, under the Singapore Companies Act, represents the institutional architecture of Singapore's state capitalism. Its founding purpose was to commercially manage assets previously held directly by the Singapore government — separating state economic power from ministerial control so that the Ministry of Finance

and Ministry of Trade and Industry could focus on policymaking rather than managing companies.

The initial portfolio, valued at S\$354 million, was transferred from the Minister for Finance Incorporated (MFF Inc) on January 28, 1975, in exchange for 21 million shares — the entire issued capital of the new holding company. The portfolio comprised shares in 35 companies, startups, and joint ventures: an eclectic collection that Temasek’s own official history describes as including “a bird park, a hotel, a shoemaker, a detergent producer, naval yards converted into a ship repair business, a start-up airline, and an iron and steel mill.” The specific companies included Jurong Bird Park Pte Ltd, Singapore Airlines (split from Malaysia-Singapore Airlines only two years earlier in 1972), Development Bank of Singapore (now DBS), Neptune Orient Lines (container shipping), Sembawang Holdings (marine engineering), and National Iron & Steel Mills.

J. Y. Pillay served as the first chairman, overseeing early operations from a modest setup. By 1977, Temasek had relocated to a small, windowless attic office in the Fullerton Building with just four staff members. The trajectory from that attic office to its current net portfolio value of S\$434 billion (March 2025) — a compound total shareholder return of 14% annually over 50 years — represents one of the most successful instances of state capitalism in history. Of the original 35 companies, 10 remain in the portfolio directly or indirectly. Others, like DBS and Singapore Airlines, have transformed into regional and global champions.

GIC: the other sovereign wealth vehicle. Temasek is not Singapore’s only sovereign wealth fund. The Government of Singapore Investment Corporation (GIC), established by Goh Keng Swee in 1981, manages the government’s foreign reserves — a separate and larger pool of capital. GIC does not publish its total assets (estimated by the Sovereign Wealth Fund Institute at over \$800 billion), operates with greater secrecy than Temasek, and invests globally across asset classes. Lee Kuan Yew served as GIC’s chairman from its founding until 2011. The existence of two distinct sovereign wealth vehicles — Temasek for

domestic and regional investments, GIC for global reserve management — reflects institutional redundancy: neither fund’s failure would destroy the other, and neither is controlled by the same management team. This is insurance architecture applied to state capitalism.

The institutional design features that make Temasek relevant to the insurance framework are specific: a professional board with independent directors; publicly reported annual results (the Temasek Review); investment decisions made by professional managers rather than political appointees; parliamentary oversight through the elected presidency, which has constitutional authority over past reserves. The separation of ownership (government) from management (professional board) is what makes Temasek fundamentally different from Rwanda’s Crystal Ventures Limited — which is party-owned, publishes no financial statements, has no independent governance, and whose investment decisions are made by political actors. Temasek proves that state capitalism can be transparent, accountable, and professionally managed. It also proves that this transparency is what allows state capitalism to survive leadership transitions: because the portfolio’s performance is publicly known, no incoming leader can quietly strip assets without detection.

E.15 HDB housing: ownership as political insurance

Singapore’s Housing and Development Board (HDB) is typically discussed as a housing policy success. For the insurance framework, its more important function is political: HDB housing creates a population with a direct material stake in the regime’s continued competence.

The program’s scale is extraordinary. Approximately 80% of Singapore’s citizens and legal residents live in HDB flats — government-built apartments sold to residents on 99-year leases. This is not public housing in the American or British sense: HDB flats are owner-occupied, not rented. The 1964 Home Ownership for the People Scheme enabled lower-middle-income families to purchase flats. From 1968, applicants could use their Central Provident Fund (CPF) contributions — mandatory savings deducted from wages — to pay for flats. By 1984,

1663 62% of flats were owner-occupied. Today, over 90% of HDB residents own their homes.

1664 The political implications are structural. After five years of residence, owners can sell their
1665 flats on the resale market at market prices, which have historically reflected substantial
1666 appreciation. Throughout their lifetime, residents may purchase two subsidized units from
1667 HDB. Housing wealth has become the primary retirement asset for most Singaporeans. This
1668 means that the population's material well-being is directly tied to the government's economic
1669 management: if the economy deteriorates, property values fall, and retirement savings erode.
1670 The system creates a population that is, in economic terms, long on Singapore's institutional
1671 quality.

1672 The social engineering dimensions are equally deliberate. The Ethnic Integration Policy,
1673 introduced in 1989, imposes ethnic quotas on each HDB block and precinct, preventing
1674 the formation of racial enclaves. This was a direct response to the communal tensions
1675 that had destabilized Singapore in the 1960s. HDB towns are designed with integrated
1676 amenities — clinics, shared spaces, sports facilities, playgrounds, parks, and retail — creating
1677 a planned community rather than a dormitory. The development of public housing is therefore
1678 simultaneously an infrastructure investment, a social policy, a wealth-building program, and
1679 a political insurance mechanism: it gives the majority of the population a material reason to
1680 support continued institutional stability.

1681 The scale of the HDB program is itself an indicator of institutional capacity. Between 1960
1682 and 2020, HDB built over one million flats — for a country with a current population of
1683 5.9 million. The construction program required massive land acquisition (enabled by the
1684 Land Acquisition Act of 1966, which allowed the government to acquire private land at below-
1685 market prices for public purposes), coordinated financing (through CPF, which mandated
1686 savings from both employees and employers), and sustained administrative capacity across
1687 decades and multiple political leaderships. The program represents perhaps the world's most
1688 successful public housing system — not in providing shelter for the poor, but in creating a

property-owning majority with a direct material stake in the system's continued competence. The model's weakness is the 99-year lease structure. As leases age, flat values decline toward zero — creating a growing cohort of elderly Singaporeans whose primary retirement asset is depreciating. The government has partially addressed this through the Selective En-bloc Redevelopment Scheme (SERS), which selects aging estates for redevelopment and offers residents replacement flats, and through various monetization schemes (the Lease Buyback Scheme, Silver Housing Bonus). But only a fraction of aging estates qualify for SERS, and the gap between property expectations and lease-decay reality is a growing source of political anxiety. This is a medium-term institutional challenge that the HDB model has not fully resolved — and it is the kind of challenge that tests whether Singapore's institutional apparatus can adapt its founding-era policies to demographic realities that the founders did not anticipate.

E.16 The legal architecture: authoritarian rule of law

Singapore's legal system presents a paradox that is central to the insurance framework: it maintains robust commercial rule of law — sufficient to attract hundreds of billions in foreign investment — while simultaneously operating as an instrument of political control.

The commercial dimension is globally competitive. Singapore's legal system, based on English common law, consistently ranks among the world's most reliable for contract enforcement and investor protection. The International Arbitration Act incorporates the UNCITRAL Model Law. Singapore acceded to the New York Convention on arbitral awards in 1986. The SIAC, established in 1991, has grown into one of the world's leading arbitration centers. The Singapore International Commercial Court (SICC), created in 2015, offers a unique hybrid: “arbitration in litigation” — flexible procedures with the enforcement advantages of court judgments. This infrastructure was deliberately built to position Singapore as a dispute resolution hub for Asia-Pacific commercial disputes.

The political dimension operates through different instruments. The Internal Security Act (ISA), inherited from British colonial legislation designed to combat communist insurgency, allows indefinite detention without trial. Its most controversial application was Operation Spectrum in 1987, when 22 people — church workers, social activists, and lawyers — were detained under the ISA for allegedly participating in a “Marxist conspiracy” to subvert the government. The detainees were never charged or tried in open court. Minister S. Dhanabalan resigned from the cabinet in 1992 because of his discomfort with the operation. Amnesty International adopted all 22 detainees as prisoners of conscience. The International Commission of Jurists sent a mission to Singapore and concluded that “the Mission’s report endorses world opinion that the real motive for these detentions is to quash internal opposition and criticism of the Singapore government.”

Defamation law serves as a more routine instrument of political control. Opposition politicians and foreign journalists who criticize the government or the Lee family face defamation suits — several opposition figures have been bankrupted through this mechanism, which effectively bars them from standing for election. The Protection from Online Falsehoods and Manipulation Act (POFMA), enacted in 2019, gives ministers the power to order corrections or takedowns of online content deemed false — with the minister, not a court, making the initial determination. Foreign media outlets that refuse to comply with government demands have had their circulation restricted: the Far Eastern Economic Review’s circulation was cut from 9,000 to 500 copies per week after publishing articles the government objected to.

The framework’s assessment of this dual legal architecture is specific: the commercial rule of law provides the institutional predictability that attracts foreign capital and survives leadership transitions (because investors’ confidence in contract enforcement does not depend on any individual leader). The political legal architecture provides the coercive instruments that maintain PAP dominance. The insurance value lies in the commercial dimension. The coercive dimension is a risk factor: if a future leader uses the ISA or defamation law more

aggressively than calibrated, investor confidence could erode. Singapore's legal system is, in insurance terms, a policy with fine print — the coverage is excellent for commercial disputes but does not extend to political rights.

E.17 The Elected Presidency: a constitutional check on reserves

The Elected Presidency, introduced by constitutional amendment in 1991 and first directly elected in 1993, represents an unusual institutional innovation: a head of state with the specific constitutional power to veto the government's use of past reserves (savings accumulated by previous administrations) and key public service appointments. The presidency was designed as a check on a future government that might be tempted to spend down the reserves built by previous administrations — a institutional lock on long-term fiscal prudence.

The practical significance is debated. The presidency's veto powers have never been exercised in a contested manner. The eligibility requirements — candidates must have held senior positions in government, the judiciary, or major companies — effectively limit the pool of candidates to the same elite that populates the PAP's leadership pipeline. The 2017 presidential election was reserved for Malay candidates under a rotating ethnic reservation system, and Halimah Yacob won uncontested after other candidates were ruled ineligible. Critics argue that the Elected Presidency is a check that the PAP can control by controlling eligibility.

For the insurance framework, the Elected Presidency illustrates both the strength and limitations of institutional design under single-party dominance. The *mechanism* is real: a constitutional veto over reserves, exercisable by a directly elected officeholder, is a meaningful institutional constraint. But the *effectiveness* of the mechanism depends on the independence of the officeholder — which is constrained by the eligibility requirements that the PAP designed. The institution is insurance with conditions.

E.18 Electoral feedback: calibrated responsiveness

The PAP has won every general election since independence. But the margins have fluctuated meaningfully: 84.4% in 1968, dipping to 61.0% in 1991 (the lowest), recovering to 69.9% in 2001, dropping again to 60.1% in 2011 (when voters punished immigration and housing costs), and rising to 61.2% in 2015. In the 2020 election, the Workers' Party won a historic 10 seats. These fluctuations carry genuine information. When the PAP's vote share dropped in 1991, the government adjusted housing and cost-of-living policies. When it dropped in 2011, immigration policy was tightened. The system receives feedback and responds to it.

This is not democracy in the full liberal sense — opposition politicians face the disadvantages described above, media is constrained, constituency boundaries are drawn to favor the PAP. But it is a meaningful feedback mechanism that prevents the complete information blindness of a 99% electoral system. A 2004 U.S. Embassy assessment (WikiLeaks cable 04SINGAPORE3001) captured this duality: Singapore's political opposition was “disunited, dispirited, and incapable of offering a credible alternative.” The PAP “prevails by its pragmatism and ruthless pouncing on misstatements by opposition members by suing them for defamation — a tactic that forced several figures into bankruptcy.” The same cable identified a revealing paradox: “While the PAP had the ineffective opposition it wanted, Singapore's sterile political culture also robbed it of the risk-taking, creativity, and entrepreneurship that the PAP recognized Singapore would need.”

A later cable (06SINGAPORE3110) observed that Lee Kuan Yew “openly admired the dynamism of the U.S. economy but was no fan of its political system,” remaining “unapologetic about the tough, authoritarian tactics he used against opponents and critics.” The PAP's feedback system works not through genuine political competition but through what might be called *calibrated responsiveness*: the party monitors electoral signals closely enough to adjust policy, while ensuring that the opposition never becomes strong enough to threaten power. Whether this mechanism transfers to a post-founding generation — leaders who inherited

the system rather than built it — is the central open question for Singapore’s institutional durability.

E.19 The ADRI score

Element	Score	Evidence
Institutionalized succession	1.0	Four PM transitions; PAP cadre system; founder’s preference overridden in 1984
Structural transformation	1.0	\$516 to \$90,674 (176x); six-phase staged industrialization; biomedical, financial, innovation sectors
Real feedback mechanisms	0.75	Genuine vote fluctuations (60-84%); Workers’ Party 10 seats; not full democracy
Transparent state capitalism	1.0	Temasek: S\$354M to S\$434B; public reporting; independent board; parliamentary oversight
Meritocratic civil service	1.0	Exam-based recruitment; scholarship pipeline; independent of individual PM
Total	4.75	

Note on scoring discrepancy: This qualitative assessment scores Singapore’s succession institutionalization at 1.0 based on observed outcomes (four successful PM transitions). The

1795 *mechanical ADRI used in the main paper’s quantitative analysis scores Singapore’s SI at 0.37,*
 1796 *reflecting V-Dem’s classification of Singapore as an electoral autocracy with limited party*
 1797 *institutionalization. The discrepancy illustrates a proxy limitation acknowledged in the main*
 1798 *paper: V-Dem coding understates Singapore’s functional succession capacity. All quantitative*
 1799 *results use the mechanical V-Dem-based scores.*

1800 **E.20 The exception that illuminates the rule**

1801 Lee Kuan Yew did not merely govern well; he built a system that governs well without him.
 1802 As he himself stated: “I would count as my greatest achievement a successor government
 1803 that is able to carry on as well, if not better, than we did. That would be the most prized
 1804 achievement” (Lee, c. 1990, cited in *From Third World to First: The Singapore Story, 1965-*
 1805 *2000*, HarperCollins, 2000). Most autocrats cannot or will not do what Lee did, because each
 1806 mechanism — the cadre system, Temasek’s independent governance, HDB’s ownership model,
 1807 the dual legal architecture — requires the leader to constrain his own power for the benefit
 1808 of a successor he may not yet know.

1809 The private candor behind this public confidence is illuminating: in a 2007 meeting with a
 1810 visiting U.S. congressional delegation, Lee confided — as recorded in a confidential diplomatic
 1811 cable (07SINGAPORE1404) — that “I do not yet have a successor... I’ve not been able
 1812 to find a man with the iron in him.” This was seven years *after* Lee had already stepped
 1813 down as PM, seventeen years after Goh Chok Tong had taken over, and three years into Lee
 1814 Hsien Loong’s prime ministership. The remark reveals both the depth of Lee’s personalist
 1815 instinct and the institutional reality that overrode it: by 2007, Singapore had already survived
 1816 two PM transitions despite the founder’s doubts about the quality of his successors. The
 1817 institutions worked even when the founder believed they were inadequately staffed. That is
 1818 the definition of institutional insurance.

E.21 The Singapore-Rwanda comparison: what the ADRI measures

The analytical purpose of this extended Singapore case study is not hagiographic. It is diagnostic. Singapore provides the benchmark against which Rwanda's institutional quality can be measured on each ADRI dimension:

Succession institutionalization. Singapore: four orderly PM transitions, a party cadre system with defined rules, the founder's preference overridden by institutional process (the 1984 Tony Tan meeting). Rwanda: zero transitions, no visible succession mechanism, the RPF's formal structures entirely subordinate to Kagame's personal authority, no evidence of an institutional process that could override the founder's preferences.

Structural economic transformation. Singapore: six-phase staged industrialization from labor-intensive assembly to biomedical sciences and financial services, with each phase building the institutional capacity for the next. GDP per capita: \$516 to \$90,674. Rwanda: impressive growth (GDP per capita \$132 in 1994 to approximately \$1,000 by 2024), but from a post-genocide base, heavily aid-dependent (foreign aid constitutes approximately 40% of government revenue), with limited manufacturing and no demonstrated capacity for the kind of sectoral upgrading that Singapore executed decade by decade.

Feedback mechanisms. Singapore: genuine vote fluctuations (60-84%), opposition parties that win seats, policy adjustments in response to electoral signals, WikiLeaks cables documenting the PAP's internal awareness of its vulnerabilities. Rwanda: RPF wins exceeding 98%, no credible opposition candidates, journalists and opposition figures who have been imprisoned, disappeared, or assassinated, and an information environment in which the regime cannot receive honest negative feedback.

State capitalism transparency. Singapore: Temasek publishes annual results, has independent directors, is subject to parliamentary oversight; GIC manages reserves separately.

Rwanda: Crystal Ventures Limited is party-owned, publishes no financial statements, has no independent governance, and its business interests create conflicts of interest between the RPF's commercial interests and the public interest.

Civil service independence. Singapore: exam-based recruitment, scholarship pipeline, advancement by assessed competence, operational independence from individual politicians.

Rwanda: civil service quality is real but dependent on Kagame's personal oversight; there is no evidence that the bureaucracy would maintain its quality without his direct involvement.

The ADRI gap — Singapore at 0.65, Rwanda at 0.33 — is not a vague judgment about “governance quality.” It reflects specific, measurable differences on each dimension. Singapore's institutional insurance means that a leadership transition, when it comes, threatens continuity on no dimension. Rwanda's institutional deficit means that a leadership transition threatens continuity on every dimension.

Singapore does not prove that authoritarianism is necessary for development — Botswana achieved comparable growth rates democratically — nor that the Singapore model is replicable. Lee's combination of competence and willingness to self-constrain may be empirically unique. Singapore is not the model to emulate. It is the diagnostic standard against which all other cases should be measured.

F C.3 South Korea: Transformation as Insurance (Path C, ADRI: 0.41 -> 0.81)

F.1 Starting conditions

When Park Chung-hee seized power in a military coup on May 16, 1961, South Korea was one of the poorest countries on Earth. GDP per capita was roughly \$82 — lower than most of sub-Saharan Africa, lower than Ghana, lower than Haiti. The country had been

devastated by the Korean War (1950-1953), which killed approximately 2.5 million people and destroyed most of the industrial infrastructure (which had been concentrated in the North under Japanese colonial development). The economy was predominantly agricultural, with manufacturing accounting for roughly 14% of GDP. Foreign aid from the United States — approximately \$12.6 billion between 1946 and 1976 — was the primary source of investment capital. The country's major exports were human hair wigs and tungsten ore. Domestic savings were negligible at 3.3% of GNP. Park himself came from a poor farming family in Gumi, North Gyeongsang Province, the seventh of seven children, and had served in the Japanese Imperial Army before joining the South Korean military.

But the starting conditions contained a hidden institutional asset. Japanese colonialism in Korea (1910-1945) was qualitatively different from European colonialism in Africa. Where Belgian colonialism in Rwanda restructured indigenous social categories and British colonialism in most of Africa relied on indirect rule through local chiefs, Japanese colonialism in Korea pursued what Bruce Cumings called “an organized, architectonic colonialism in which the planner and administrator was the model, not the swashbuckling conqueror.” The colonial Government-General (*Chosen Sotokufu*) built a highly centralized bureaucracy that penetrated below the county level into villages — a degree of state penetration unprecedented in Korean history. Between 1911 and 1940, manufacturing's share of Korean GDP rose from approximately 6% to 28%, while agriculture's share fell from 76% to 41% — a structural transformation unparalleled among colonized territories. The *zaibatsu* — Mitsui, Mitsubishi, Sumitomo — operated extensively in Korea, creating the organizational template of large, state-directed conglomerates that Park would replicate as the chaebol system.

The connection was not merely structural but personal. Park applied to the Manchukuo Army Military Academy in 1938, graduated top of his class, attended the Imperial Japanese Army Academy in Tokyo, and served as an officer in the Kwantung Army in Manchuria — the epicenter of Japan's experiment in state-directed heavy industrialization. As Eckert

[2016] documents, Park absorbed his model of development directly from the colonial system: the Five-Year Plans, the state-chaebol alliance, the export discipline, the suppression of labor — all had Manchukuo-era precedents. Kohli’s *State-Directed Development* [2004] establishes the theoretical framework: three features of the Korean “model” — a highly authoritarian, penetrating state; production-oriented alliances between state and business; and systematic control of lower classes — originated during the colonial period.

Two additional colonial legacies proved critical. First, the departure of Japanese landlords after 1945 enabled radical land redistribution. The Farmland Reform Act of 1949 set a maximum ownership limit of 3 *chongbo* (approximately 3 hectares) per household, redistributing excess land to tenant farmers. This eliminated the landed oligarchy that blocked reform in Latin America and much of South Asia, removing a key veto player and enabling the state to direct resources toward industrialization. Second, the colonial education system — limited and instrumental as it was — created a class of Korean technicians, administrators, and military officers trained in Japanese institutions. These individuals staffed the agencies of Park’s developmental state. The institutional inheritance was purchased at enormous human cost — forced labor affecting approximately eight million Koreans, an estimated 200,000 women forced into sexual slavery as “comfort women,” systematic cultural suppression, and land dispossession — but the administrative capacity and industrial organizational models proved transferable to developmental purposes after independence in ways that the institutional legacies of colonialism in Africa generally did not.

F.2 The Economic Planning Board: institutional machinery of the developmental state

Park’s first institutional act was the creation of the Economic Planning Board (EPB) in 1961. The EPB was not merely a planning agency but the operational command center of the developmental state: it combined planning, budgeting, and foreign capital management

1918 under a single institutional roof, with its head holding the rank of Deputy Prime Minister
1919 — giving the economic technocrats direct access to presidential authority and bureaucratic
1920 primacy over spending ministries.

1921 The EPB recruited talented individuals through competitive civil service examinations and
1922 provided them with institutional autonomy backed by presidential authority. The agency
1923 possessed significant legal, human, and material resources, and the views of experts and
1924 front-line officials were actively incorporated into plan preparation. Key figures included
1925 Nam Duck-woo (Ph.D. in Economics, Oklahoma State University, 1961), who served as
1926 Deputy Prime Minister and Minister of the Economic Planning Board (1974-1978) under
1927 Park and later as Prime Minister (1980-1982) under Chun Doo-hwan (*Korea Herald* obituary,
1928 18 May 2013), and a cadre of technocrats who maintained institutional continuity across
1929 Park's 18-year tenure.

1930 The EPB was staffed by a coherent technocratic class combining two distinct educational
1931 traditions. Park's senior advisors — including Chief Presidential Secretary Kim Chung-yum
1932 and HCI architect Oh Won-chol — were, as scholars have described them, “made in Japan”:
1933 born during the occupation and educated under the colonial system, deeply familiar with
1934 the Meiji-to-postwar Japanese industrial policy trajectory. A second wave, including Nam
1935 Duck-woo (Ph.D. in Economics, Oklahoma State University), received American graduate
1936 training, equipping them with modern economic theory and quantitative methods. As Oh
1937 Won-chol stated in a 2003 interview: “In Korea, the Park Chung-hee era can rightfully
1938 be called the era of the technocrats” (*Monthly Chosun*, January 2003; English translation,
1939 Nautilus Institute). Park “provided technocrats with full discretion, not only with regards to
1940 the implementation of policy, but also concerning the organizational structure.”

1941 The pivotal early figure was Chang Key-young, Deputy Prime Minister and EPB head in
1942 the mid-1960s, who was “practically given carte blanche in shaping and directing economic
1943 policies” [Cole and Lyman, 1971]. Chang recruited the reform team that executed Korea's

shift to export-led industrialization. He warned Park: “It is imperative that you do not change your mind about the policies after we embark on this process. If you stop the reform because business and industry protest it, it will be better not to have started at all.” Park reportedly replied: “Absolutely. I will do as you say to the end” (Kim, “The Leviathan: Economic Bureaucracy under Park,” in Kim and Vogel, eds., *The Park Chung Hee Era*, Harvard UP, 2011). The EPB was complemented by the Korea Development Institute (KDI), founded in 1971 as the government’s first social science research institute. Under founding president Kim Mahn-je (Ph.D., University of Missouri), KDI researchers directly participated in formulating the Five-Year Plans and provided a technocratic substitute for democratic feedback — identifying macroeconomic imbalances and building the intellectual case for policy correction in the absence of free elections, a free press, or independent civil society organizations that could signal policy failures.

The EPB’s Five-Year Plans were not Soviet-style command plans but indicative frameworks that set targets and deployed incentives to achieve them. The first plan (1962-1966) targeted 7.1% annual GDP growth; actual growth was 7.8%. The second plan (1967-1971) targeted 11.4%; actual growth was 12.4%. In every plan period, actual growth exceeded targets — a striking record that reflected both the quality of the planning and the responsiveness of the private sector to the incentive structure. GNP per capita doubled during the second plan. By 1971, exports had surged from \$41 million in 1961 to \$1.06 billion.

F.3 The chaebol mechanism: state-directed credit and export discipline

The core mechanism of chaebol creation was state control over finance (*kwanchi kumyung*). Commercial banks were nationalized in the early 1960s, and the government controlled credit allocation both directly — through appointment of bank management and credit controls — and indirectly through regulations and incentives. The system operated through explicit

quid pro quo: Park provided a small number of entrepreneurial families with cheap credit from state-owned banks, monopoly privileges in local markets, and protection from foreign competition. In return, promoted firms were expected to meet government-mandated export targets. Firms that met targets received more privileges; those that did not were threatened with loss of privileges or outright seizure.

Interest rates were administered at below-market levels, often at negative real interest rates. By the late 1970s, “policy loans” constituted 60% of all lending. In 1980, the basic interest rate charged to exporters of capital goods by the Korea Export-Import Bank was 8%, while preferential rates on ordinary export loans were 12% — far below what the market would have demanded for investments of this risk level. This was what Alice Amsden called “getting the prices wrong” deliberately — subsidizing strategic industries at the expense of short-term allocative efficiency to achieve long-term structural transformation.

Alongside the formal banking system, an informal lending market — the “curb market” — served smaller companies and individuals who could not secure bank financing. The curb market carried very high interest rates, creating a two-tier financial system: large firms with political connections borrowed cheaply from state banks, while smaller firms paid market rates or worse. This dual structure concentrated resources in the chaebol but at the cost of financial fragility and extreme corporate leverage — problems that would erupt in the 1997 Asian Financial Crisis.

The institutional centerpiece of export discipline was the Monthly National Trade Promotion Meeting, chaired personally by Park. Participants included ministers, top bureaucrats, chief executives of export associations, research organizations, and the heads of leading firms. These were not ceremonial: they involved line-by-line review of export targets, identification of emerging problems, and devising of solutions. Firms that met targets received tax exemptions, subsidized long-term loans, and monopoly rights; those that underperformed faced withdrawal of credit, loss of licensing privileges, and tax audits. Park’s central insight, as Amsden [1989]

argues, was to “reward good performance over poor performance” — creating a performance-based reciprocity system that disciplined not just workers but the owners and managers of capital. The meetings functioned as a feedback mechanism substitute: in an authoritarian system lacking democratic accountability, presidential commitment signaling and real-time export monitoring ensured that resources flowed to productive uses rather than rent-seeking. November 30 was designated “Export Day” to commemorate Korea’s first achievement of \$100 million in exports in 1964.

The relationship between state and chaebol was established from the beginning through coercion. Immediately after his coup, Park arrested 51 leading businessmen on charges of “illicit profiteering” and confiscated their property. They were released only after signing agreements stating: “I will donate all my property when the government requires it for nation construction.” As Amsden notes, this established the state’s authority over business from the start — a credible threat that made subsequent “guidance” enforceable.

F.4 The Heavy and Chemical Industry drive (1973-1979)

On January 12, 1973, President Park Chung-hee made a formal public announcement: “The government hereby initiates a Heavy and Chemical Industry Policy that places heavy emphasis on the measure to promote the development of heavy and chemical industries.” The target: make South Korea a heavy and chemical industrial power within a decade. Six strategic sectors were designated: steel, non-ferrous metals, shipbuilding, machinery, electronics, and petrochemicals. Park set the ambitious goal of producing 500,000 automobiles annually by 1980.

Park created the Heavy and Chemical Industry Planning Council, which effectively replaced the EPB as his primary group of economic advisors for industrial policy. The key architect was Oh Won-chol, a technocrat who served as Second Secretary for Economic Affairs in the Blue House. As Oh later explained: “President Park created a planning department

that, under the direct control of the prime minister, would be responsible for the defense industry, the heavy chemical industry... The President then made the second secretary for the economy take on the additional post of head of this new department.” The HCI drive was intimately linked to national defense: the Nixon Doctrine (1969) and the withdrawal of the U.S. 7th Infantry Division from Korea in 1971 created urgency for indigenous defense production.

POSCO: Steel. Park Tae-joon, a retired army general and close Park associate who had successfully turned around the government-owned Korea Tungsten Company, was appointed in April 1968 to establish the Pohang Iron and Steel Company (POSCO). International lenders rejected the project. The World Bank concluded in 1969 that Korea “had no comparative advantage in the production of steel.” Park Tae-joon turned to Japan, leveraging the \$500 million in grants and loans negotiated under the 1965 Treaty on Basic Relations (the normalization of Japan-Korea relations — itself deeply controversial, as it was seen by many Koreans as an insufficient reckoning for colonial crimes). POSCO received approximately \$119.48 million in Japanese reparation funds, supplemented by \$52.5 million from Japan’s Export-Import Bank, \$46.43 million from the Japanese Economic Cooperation Fund, and \$28.58 million in Japanese commercial loans. Nippon Steel (formed from the 1970 merger of Yawata Iron & Steel and Fuji Iron & Steel) provided critical technical assistance.

Pohang, a small fishing village of about 500 houses on the southeastern coast, was chosen for its coastal access to shipping routes and its distance from Seoul, reflecting the government’s strategy of creating industrial centers throughout the country. Construction began on April 1, 1970. The first blast furnace was dedicated on July 3, 1973 — completed a month ahead of schedule — with initial annual capacity of 1.03 million metric tons. Under Park Tae-joon’s relentless military-style oversight, POSCO expanded to over 25 million tons of annual crude steel capacity by the 1990s, becoming one of the world’s largest and most efficient steelmakers. Park Tae-joon famously described steel as “the rice of industry.” The fishing village of Pohang

became a major industrial center of 520,000 people.

Hyundai: Shipbuilding and automobiles. Chung Ju-yung, the founder of Hyundai Group, made a legendary gamble by entering shipbuilding in 1971. Hyundai Shipbuilding & Heavy Industries was established in 1972, with groundbreaking at Mipo Bay, Ulsan. Chung won his first contract — for two oil tankers from Livanos, a Greek shipowner — before the shipyard was even built, famously showing the potential buyer a 500-won note depicting a Korean turtle ship to demonstrate the country’s maritime heritage. That contract secured a loan from Barclays Bank. Chung had the shipyard and the first vessel built simultaneously, completing the vessel in three years rather than the expected five. By 1983, Hyundai Heavy Industries had become the world’s largest shipbuilding company.

In parallel, the Hyundai Motor Company — founded in 1967, initially assembling the Ford Cortina under license — produced the Hyundai Pony in 1975: Korea’s first domestically designed car. To achieve this, Hyundai hired George Turnbull (former managing director of Austin Morris at British Leyland), who recruited five senior British car engineers. Styling was by Giorgio Giugiaro of ItalDesign; powertrain technology came from Mitsubishi Motors. Exports began in 1976 to Ecuador and subsequently to European markets.

Samsung: Semiconductors. Lee Byung-chul founded Samsung as a small trading company in Daegu in 1938. Samsung Electronics was established in 1969 in Suwon, initially producing black-and-white televisions with technical advice from Sanyo. The pivotal semiconductor decision came in 1974, when Samsung acquired Korea Semiconductor, a near-bankrupt company with one of the first chip-making facilities in South Korea. In February 1983, Lee Byung-chul made the so-called “Tokyo Declaration,” announcing Samsung’s intention to become a DRAM vendor. One year later, Samsung successfully developed a 64 kb DRAM chip, reducing the technological gap with leading-edge producers from over a decade to approximately four years — a feat that laid the foundation for Samsung’s eventual rise to become the world’s largest semiconductor memory manufacturer.

The collective result of the HCI drive was the decisive structural transformation that created the Korean economic miracle. By Park's death in 1979, South Korea was manufacturing ships, cars, electronics, steel, and petrochemicals. Manufacturing had grown from 14.3% to approximately 30% of GDP. GDP per capita had risen from \$82 in 1961 to over \$1,000. Exports had surged from \$41 million to approximately \$15 billion — a 365-fold increase in 18 years.

F.5 The Saemaul Undong: rural transformation

Park's industrial policy was complemented by the Saemaul Undong (New Village Movement), launched on April 22, 1970. The government provided each of the nation's 33,267 villages with 335 bags of cement and a half-ton of iron rods. Villages decided autonomously what to build — roads, bridges, irrigation systems — but all were required to construct a Town Hall for community meetings. In 1973, the government classified participating villages into three tiers — self-reliance, self-help, and basic — based on leadership quality and project execution, then redistributed additional resources based on performance, creating competitive dynamics between villages.

The movement transformed the rural landscape: thatched-roof houses were replaced with orange-tiled homes, electrification expanded, roads were built. Village and heavily subsidized rice production together raised rural household incomes to the level of urban households — eliminating the rural-urban income gap that destabilized many developing countries. The UN recognized the program as a model for rural development. By 2017, over 70,000 people from 108 developing countries had received Saemaul training. However, the movement also functioned as a political mobilization tool for Park's authoritarian regime.

F.6 The Yushin Constitution: authoritarian legalism and the KCIA

On October 17, 1972, Park dissolved the National Assembly, suspended the constitution, and declared martial law. The name “Yushin” derived from the Korean pronunciation of the Japanese word *Ishin* (restoration), a deliberate allusion to the Meiji Restoration — revealing how deeply Park’s political imagination remained shaped by the Japanese colonial model. The new constitution, approved in a referendum on November 21 with an implausible 92.3% approval on 91.9% turnout, concentrated all power in the presidency: indirect presidential elections through a 2,000-5,000 member National Conference for Unification (which Park chaired), six-year terms with no limit on re-election, power to appoint one-third of the National Assembly (guaranteeing a permanent majority), and broad emergency powers under Article 53 allowing the president to suspend constitutional freedoms at will. On January 8, 1974, Park issued Presidential Emergency Decree No. 1, outlawing all activities or statements opposing the Yushin Constitution itself — criminalizing political dissent at its root.

The enforcement apparatus was the Korean Central Intelligence Agency (KCIA), founded on June 13, 1961 by Kim Jong-pil, Park’s nephew by marriage. Modeled on the U.S. CIA but with a far broader mandate — “to supervise and coordinate both international and domestic intelligence activities and criminal investigation by all government intelligence agencies, including that of the military” — the KCIA was simultaneously an external intelligence service and a domestic secret police. By the mid-1970s it employed an estimated 30,000 agents. Its budget was a classified state secret; the first legislative inspection of its finances did not occur until 1989, meaning it operated for 18 years without financial oversight. Beyond its official allocation, the KCIA raised supplemental funds through extortion and stock market manipulation.

The KCIA’s most dramatic operation was the kidnapping of opposition leader Kim Dae-jung from the Hotel Grand Palace in Tokyo on August 8, 1973. Kim had nearly defeated Park in

the 1971 presidential election and was organizing an exile democracy movement. KCIA agents seized him at approximately 1:19 PM, drugged him with chloroform, and transported him by boat to a Korean freighter, where he was bound to a weighted board for drowning. The assassination was averted only through intervention by U.S. Ambassador Philip Habib, who drove to the Blue House and warned Park that Kim’s murder would be a “terrible setback” for U.S.-Korea relations. The KCIA also fabricated the “People’s Revolutionary Party” conspiracy in 1974, arresting 1,024 people without warrant. On April 9, 1975, eight men were executed by hanging — less than 24 hours after the Supreme Court rubber-stamped the case in approximately ten minutes. In January 2007, a Seoul court posthumously acquitted all eight and ordered 63.7 billion won in compensation to their families.

The comparison with Singapore’s Internal Security Act is instructive: both exemplify authoritarian legalism, but with fundamentally different institutional architectures. Singapore’s ISA operates within a framework maintaining the *appearance* of liberal constitutionalism — what Rajah [2012] calls a “strategic uncoupling of the form and substance of rule of law.” Korea’s Yushin Constitution was more overtly authoritarian, directly restructuring the constitutional order itself without the procedural veneer. The different institutional consequences: Korea’s overt authoritarianism created a unified opposition that eventually mobilized democratically; Singapore’s more subtle legalism has proven more durable.

F.7 Labor repression and the making of the democratic movement

The developmental state’s structural transformation was built on systematic labor repression. On November 13, 1970, Jeon Tae-il — a 22-year-old garment worker at the Pyeonghwa (Peace) Market in Seoul’s Dongdaemun district — doused himself with gasoline and set himself on fire. As flames engulfed him, he shouted: “Abide by the Labor Standards Law!” and “We are not machines!” (*Urinun gigyae-ga anida*). He died that evening. Jeon had worked in the market’s sweatshops since age 17; the overwhelming majority of his co-workers were teenage girls from the countryside — average age 18, some as young as thirteen — working shifts

from 8:00 AM to 11:00 PM, given amphetamine injections to stay awake, suffering rampant tuberculosis from absence of ventilation. In 1968, he had discovered the existence of the Labor Standards Act — and that it was being systematically violated. The *Donga Ilbo* named his death the most important event of 1970 (Cho Yong-nae, *A Single Spark*, 1983). His mother, Lee So-sun, promised her dying son she would improve workers' rights and became president of the Cheonggye Garment Workers Union, arrested multiple times over the following two decades.

The labor movement grew through the 1970s despite escalating repression. At the Dong-IL Textile Company in February 1978, the National Textile Workers Union sent approximately 200 thugs to disrupt union elections; they smeared human feces on female workers' faces, eyes, ears, and mouths, stripped and fondled them. More than sixty women declared a 15-day hunger strike at Myeongdong Cathedral. On March 10, 1978 (Employee's Day), over 100 female workers rushed the podium at a national commemoration attended by Prime Minister Choi Kyu-ha, holding pickets reading "We cannot eat human excrement!" The company fired 126 campaign leaders and created the first systematic blacklist in Korean labor history.

Labor repression was integral to the HCI drive — suppressed wages maintained export competitiveness as Korea shifted from light to heavy industries. But this systematic repression ultimately fueled the democratic movement. After the June 29, 1987 declaration, approximately 3,500 labor disputes erupted in July and August alone (3,749 total for 1987, compared to 289 in 1986). This "Great Workers' Struggle" saw over three million workers demanding autonomous trade unions, higher wages, and improved working conditions. The number of unions grew from 2,658 to 4,086 in a single year. As Koo [2001], the "double oppression" of class and gender paradoxically accelerated class formation: Korean workers "forged their collective identity much more rapidly than did their counterparts in other newly industrialized countries in East Asia."

F.8 The assassination: when institutions fail

On the evening of October 26, 1979, Park Chung-hee sat down to dinner in a small room (12 by 10.5 feet) in the KCIA annex compound near the Blue House. His dinner companions were KCIA Director Kim Jae-gyu, Chief Presidential Bodyguard Cha Ji-chul, and Chief Blue House Secretary Kim Gae-won. Two young women were present as entertainers.

The conversation turned to the Busan-Masan uprising — protests by up to 50,000 people in October 1979, triggered by the government's expulsion of opposition leader Kim Young-sam from the National Assembly after he allowed striking female factory workers from YH Trading to stage a sit-in at opposition party headquarters. Kim Jae-gyu briefed Park that the rioters were “angry citizens, not impure elements” and feared the discontent could become a nationwide revolt. Park reportedly had a “tantrum,” saying that if the situation worsened he would order troops to shoot demonstrators, and that unlike those who gave shoot-to-kill orders in 1960, no one could execute him because he was the president. A bitter rivalry between Kim Jae-gyu and Cha Ji-chul — who had been encroaching on KCIA authority, appropriating tanks, helicopters, and an entire army division under his personal command — further poisoned the atmosphere.

At approximately 7:40 PM, Kim Jae-gyu shot Cha Ji-chul in the wrist, then shot Park in the chest. When his weapon jammed, he obtained a second revolver and returned to kill Cha. Kim's KCIA guards killed three of Park's four presidential security detail. Park was pronounced dead on arrival at a nearby hospital.

Kim claimed at his trial that he killed Park to avert a planned bloodbath against the opposition and to restore democracy. The investigation — led by General Chun Doo-hwan — rejected this, concluding Kim acted to preserve his factional position. Kim was executed in May 1980. The historiographical debate continues, but the institutional significance is unambiguous: Park built no succession mechanism, and his death created a power vacuum that produced seven years of renewed military dictatorship.

F.9 The Chun Doo-hwan era: growth without the founder

What followed was politically catastrophic but economically continuous — and this economic continuity is the central data point for the insurance framework.

Chun Doo-hwan staged a coup within the coup on December 12, 1979, seizing military control and progressively consolidating power. In May 1980, he declared martial law nationwide. When students and citizens in Gwangju protested, special forces units were deployed. The Gwangju Uprising (May 18-27, 1980) resulted in approximately 200 officially acknowledged dead (academic estimates place the toll over 1,000), with nearly a quarter million citizens participating. The city was governed by its citizens for five days before tanks retook it. The uprising became the moral touchstone of South Korean democracy — its 4,271 documents (858,900 pages) and 2,017 films were inscribed on the UNESCO Memory of the World Register in 2011.

Declassified U.S. documents — now available through the National Security Archive's Korea Project — reveal American awareness in real time: the Carter and Reagan administrations were informed of the Gwangju massacre and Chun's power consolidation, debating behind closed doors how to respond to a key Cold War ally's repression.

Yet the economy continued to grow — and the mechanism of this continuity is the central data point for the insurance framework. Since early 1978, EPB staff and KDI economists had studied the deteriorating macroeconomic situation — the HCI drive, combined with the Middle East construction boom and fiscal deficits, had produced escalating inflation, with “policy loans” at 60% of total lending carrying negative real interest rates and an annual interest subsidy growing to approximately 10% of GNP. In April 1979, the government announced the Comprehensive Stabilization Program, designed by the EPB-KDI partnership: bank credit growth reduced from 45% to 36%, broad money growth decelerated from 35% to 25%, preferential policy loans scaled back, import liberalization initiated. Park himself initially resisted some elements, ordering continuation of export subsidies, but the technocratic

2223 logic was in motion.

2224 The CSP represents remarkable evidence that institutional capacity survived the leader's
2225 death. The program was designed under Park, announced in April 1979, and carried through
2226 the assassination (October 1979), the brief caretaker presidency of Choi Kyu-hah, and into
2227 full implementation under Chun Doo-hwan, who adopted "stability" and "private sector-led
2228 growth" as his administration's slogans — essentially ratifying the EPB/KDI agenda. The
2229 key personnel bridging the transition was Nam Duck-woo, who served as Park's Special
2230 Economic Advisor in 1979 and then as Chun's Prime Minister from 1980 to 1982, providing
2231 direct personal continuity in economic leadership. As KDI's own assessment concluded:
2232 "Perhaps a more important implication of the success of the stabilization policy was to prove
2233 that the government-led development strategy was neither the only nor a sustainable policy
2234 framework for prosperity."

2235 The results vindicated the institutional machinery: consumer price inflation dropped from
2236 over 20% in 1981 to under 5% in 1983. The fiscal deficit of -4.3% of GDP in 1981 was
2237 converted to a surplus of 0.2% by 1987. South Korea achieved its first trade surplus in
2238 1986. The economy grew at an average of 9.2% annually between 1982 and 1987. Samsung
2239 kept making semiconductors, Hyundai kept building ships, POSCO kept producing steel —
2240 regardless of who occupied the Blue House.

2241 This is the central lesson: the structural transformation was deep enough to be self-sustaining.
2242 The economy's momentum did not depend on Park's continued presence because the chaebols,
2243 the skilled workforce, the export infrastructure, and the industrial knowledge base had
2244 become independent productive assets. And the technocratic institutions — EPB, KDI —
2245 had developed enough autonomy to correct policy errors without presidential direction. The
2246 insurance was in the structure of the economy and the competence of the bureaucracy, not in
2247 the quality of the political institutions.

F.10 The June Democratic Struggle: structural transformation creates its own succession

By 1987, South Korea's GDP per capita had reached approximately \$3,000. A large urban middle class had emerged — people with chaebol jobs, homes, savings, and stakes in institutional stability. The structural transformation that Park set in motion had created the conditions for its own political transformation.

On January 14, 1987, Seoul National University student Park Jong-chul died under police torture. The police claimed he had “slammed the desk with a thump, and went ‘Uh!’ and died.” The autopsy revealed death by asphyxiation from water torture. On May 18, at a memorial mass at Myeongdong Cathedral, Father Kim Seung-hoon publicly revealed the police cover-up. On April 13, Chun rejected direct presidential elections. On June 9, Yonsei University student Lee Han-yeol was struck in the head by a tear gas canister — the photograph of his injured body being carried became an iconic image of the struggle.

On June 10, when Chun announced Roh Tae-woo as his chosen successor, 240,000 people protested across 22 cities — despite pre-emptive arrest of nearly 5,000 dissidents and house arrest of 700 opposition leaders. After June 10, an average of over 100 protests occurred simultaneously every day across the country. On June 18, the National Rally for the Abolition of Tear Gas brought 1.5 million people into the streets; in Busan alone, 300,000 demonstrators forced police to cease firing tear gas. On June 26, more than 1.3 million people participated in peace marches across 34 cities. An estimated four to five million people participated in the June Democratic Struggle.

On June 29, Roh Tae-woo issued the June 29 Declaration, conceding direct presidential elections, release of political prisoners including Kim Dae-jung, freedom of the press, and local government autonomy. Lee Han-yeol died on July 5; his funeral on July 9 drew 1.6 million participants. A new constitution was approved by referendum in October 1987 with 94.4% approval. In the December 1987 presidential election, Roh Tae-woo won with 36.6% —

the opposition vote fatally split between Kim Young-sam (28%) and Kim Dae-jung (27%).

The modernization hypothesis was vindicated: economic development created conditions for democratic transition. But the causation was specific, not general. South Korea's structural transformation created a middle class large enough and economically powerful enough to demand political voice — and to sustain a protest movement that the military could not suppress without destroying the economy that produced the regime's legitimacy. Manufacturing's share of GNP had risen from 14.3% in 1962 to 30.3% in 1987. A sophisticated, interconnected industrial economy could not function under perpetual martial law. The specter of Gwangju constrained the military. And the 1988 Seoul Olympics provided international leverage: violent repression on the eve of a global sporting event was a cost the regime was unwilling to pay.

F.11 Post-democratization: the institutional dividend

South Korea's democratic transition produced not economic disruption but economic acceleration. Growth continued at 8-10% through the early 1990s. In 1996, both Chun Doo-hwan and Roh Tae-woo were convicted of mutiny, treason, and corruption — then pardoned by President Kim Dae-jung in 1997 in an extraordinary act of democratic reconciliation. South Korea joined the OECD in 1996, signaling its arrival among advanced economies.

F.12 The 1997 crisis: when institutional weakness surfaces

The 1997 Asian Financial Crisis was the most severe stress test of Korea's structural transformation — and simultaneously exposed the institutional weakness of the chaebol-state relationship while demonstrating the economy's structural resilience.

The crisis had roots in the very mechanism that had produced the miracle. State-directed credit had encouraged extreme corporate leverage: the average debt-to-equity ratio for the manufacturing sector reached nearly 400% in 1997 — double the OECD average. The top 30

chaebols exceeded 500%. The most extreme cases defied comprehension: Hanbo Steel had borrowed \$6 billion on a capital base of \$343 million (debt-to-equity ratio of approximately 2,200%). Halla Group's debts were 30 times its equity. The system depended on continuous growth to service the debt; when the Thai baht crisis triggered capital flight from emerging markets in mid-1997, the house of cards collapsed.

The cascade was devastating. Hanbo Steel went into receivership on January 23, 1997 — the first chaebol bankruptcy in Korean history. Sammi Steel followed in March, Jinro Group in April. Kia Motors, the seventh-largest chaebol, declared bankruptcy in July — signaling that no conglomerate was safe. Approximately 25 chaebols went bankrupt during 1997-1998. On November 21, 1997, the government formally requested IMF assistance. The resulting \$58.4 billion bailout package — the largest in IMF history at the time — imposed conditions that amounted to a comprehensive restructuring of the Korean economic model: interest rates exceeding 30%, the ceiling on foreign investment raised from 26% to 100%, labor market liberalization enabling mass layoffs, and forced corporate restructuring. Unemployment surged from 2.6% (October 1997) to 8.7% (February 1999).

The response revealed both institutional resilience and social solidarity. In January 1998, the “Gold Collection Movement” — explicitly invoking the spirit of the 1907 National Debt Repayment Movement against Japanese colonial debts — saw approximately 3.51 million people (roughly one-quarter of the population) donate personal gold. Newlyweds gave wedding rings, athletes gave gold medals, Cardinal Kim Soo-hwan donated his investiture cross. Approximately 227 tons of gold worth \$2.17 billion was collected — more than 20 times the existing national gold reserves.

President Kim Dae-jung (inaugurated February 1998) pursued comprehensive chaebol restructuring. On January 13, 1998, he secured agreement from the five leading chaebols on major reform principles. The centerpiece was the “Big Deal” industrial realignment — government-pressured asset swaps to consolidate production: Hyundai's semiconductor

operations went to Samsung; Samsung Motors was sold to Renault; General Motors took over Daewoo Motors. Additional reforms included elimination of cross-guarantees among chaebol subsidiaries, consolidated financial statements, and independent external audits. The most spectacular collapse was Daewoo Group, which declared bankruptcy in November 1999 with debts of approximately \$50 billion and 350,000 employees. Chairman Kim Woo-choong committed accounting fraud worth 22.9 trillion won (\$15.3 billion) — “the biggest accounting fraud in history” before Enron — and fled to Vietnam before being arrested in 2005.

After the economy contracted 5.8% in 1998, it grew 10.2% in 1999. South Korea repaid the entire IMF loan in August 2001 — three years ahead of schedule. The crisis exposed that the state-chaebol relationship, which had been the engine of transformation, had also created systemic fragility through moral hazard and extreme leverage. But the structural transformation was deep enough that the economy recovered, restructured, and accelerated — powered by Samsung’s semiconductor dominance, Hyundai’s automotive expansion, and a new technology sector.

F.13 Education as institutional infrastructure

Underlying the structural transformation was an investment in human capital whose scale has few historical parallels. Korean *gyoyukyeol* (education fever) — rooted in Confucian traditions but supercharged by the developmental state — drove educational attainment from approximately 20% literacy in the 1950s to near-universal literacy by the 1980s. Higher education enrollment rose from 100,000 students in 1960 to 1.3 million by 1987; the college-level enrollment rate jumped from 6.7% in 1966 to 61.8% in 1996 (UNDP Human Development Reports; World Bank WDI, SE.TER.ENRR shows 7.2% for 1971, the earliest available year, broadly consistent). The number of higher education institutions grew from 19 in 1945 to 950 by the 1990s. The Korea Advanced Institute of Science and Technology (KAIST), founded in 1971 with a \$6 million USAID loan based on the “Terman Report” (authored by Frederick Terman, the Stanford engineering dean known as the “father of Silicon Valley”), produced

the technical elite that staffed both the chaebols and the state bureaucracy. KAIST alumni comprise approximately 25% of Samsung’s R&D workforce (KAIST International Office, institutional statistics).

The education investment created the human capital for both industrial transformation and bureaucratic competence — translating directly into the ADRI framework’s civil service independence component. The meritocratic examination system for civil service entry, modeled on the Japanese higher civil service examination, ensured that educational attainment produced state capacity rather than merely credentialism.

GDP per capita reached \$11,000 by 1997, \$20,000 by 2007, and approximately \$33,000 by 2024. South Korea became a G20 economy and the world’s 10th-largest economy by GDP. Samsung Electronics became the world’s largest semiconductor manufacturer. Hyundai Motor became a top-five global automaker. POSCO remained among the world’s most efficient steel producers. The structural transformation was complete — and it had generated its own political succession mechanism through the creation of a middle class that demanded and sustained democracy.

F.14 The ADRI score (under Park, 1961-1979)

Element	Score	Evidence
Institutionalized succession	0	None. Assassinated by his own intelligence chief. No mechanism for transfer
Structural transformation	1.0	Manufacturing 14% to 30% of GDP; exports \$41M to \$15B; steel, ships, electronics, cars

Element	Score	Evidence
Real feedback mechanisms	0	Yushin constitution eliminated genuine opposition; KCIA surveillance state
Transparent state capitalism	0.5	Chaebol system was crony but productive; state banks not transparent; export discipline provided partial accountability
Meritocratic civil service	0.5	EPB was genuinely meritocratic and competent; KCIA and political appointments corrupted other agencies
Total	2.0	

F.15 Transformation as insurance: the diagnostic lesson

South Korea proves that structural transformation can compensate for institutional deficit. Park made no effort to institutionalize succession, constrain his own power, or permit electoral feedback. His discount rate was high. He was assassinated. His ADRI score was low. But the structural transformation he achieved was deep enough that the economy developed self-sustaining momentum independent of any individual leader — and eventually generated the political conditions for democratic transition.

This is Path C in its purest form: low institutional investment, high structural transformation. The economy survived because Samsung, Hyundai, POSCO, and the skilled workforce they

2375 employed did not need Park's personal involvement to continue producing. The transformation
2376 created facts on the ground — factories, supply chains, human capital, export relationships —
2377 that no successor could easily destroy. The chaebols had their own institutional momentum,
2378 their own management structures, their own reasons to continue producing regardless of
2379 political turbulence.

2380 But the path works only if transformation is deep enough. "Deep enough" means the economy
2381 has been fundamentally restructured — from agriculture to manufacturing, from domestic
2382 to export-oriented, with indigenous firms capable of competing globally. This is not merely
2383 "growth" — it is a qualitative change in what the economy *is*. Rwanda's growth has not
2384 produced this kind of transformation. Rwanda at \$1,000 per capita, with 43% of the labor
2385 force in agriculture and 82% of the population rural, has not created the structural conditions
2386 that made South Korea's economy resilient to political crisis. South Korea at \$1,000 per
2387 capita (1979) had already built POSCO, Hyundai Heavy Industries, Samsung Semiconductor,
2388 and dozens of globally competitive firms. Rwanda at \$1,000 per capita has no comparable
2389 indigenous productive capacity.

2390 South Korea also demonstrates that the insurance framework's components interact: structural
2391 transformation (high) eventually compensated for succession institutionalization (zero) by
2392 generating the social conditions for democratic transition — but only after two decades of
2393 post-assassination political turbulence, a massacre, and the sustained mobilization of millions.
2394 The path was not smooth, not planned, and not replicable by design. It was the unintended
2395 consequence of industrial transformation so deep that it restructured society itself.

G C.4 Ethiopia: From Developmental State to Collapse (Path D $\rightarrow$ E, ADRI = 0.27)

Ethiopia under Meles Zenawi (1991-2012) provides the most direct empirical test of the framework's prediction for personalist developmental authoritarianism — and the most devastating evidence for what awaits Rwanda. The Ethiopian case is analytically distinctive because the EPRDF maintained genuine institutional infrastructure — a Leninist organizational architecture that distinguishes it from nearly every other African ruling coalition — yet that infrastructure proved insufficient to survive the founder's departure.

G.1 The TPLF: from insurgency to state power

The Tigray People's Liberation Front was founded on February 18, 1975, in the town of Dedebit in western Tigray by a group of Tigrayan university students radicalized by the Ethiopian student movement and the upheaval following the Derg's overthrow of Emperor Haile Selassie in 1974. The founding cadre included Meles Zenawi (born Legesse Zenawi Asres in Adwa, May 8, 1955), who had abandoned medical studies at Addis Ababa University; Seeye Abraha, who would become defense minister; Sebhat Nega, the front's chief ideologue; and Aregawi Berhe, the first chairman, who was later expelled for opposing Meles's growing authority. The TPLF's initial manifesto drew on Marxism-Leninism, and the front's early ideological orientation was influenced by Albanian communism under Enver Hoxha — an unusual choice reflecting the movement's search for revolutionary models outside both the Soviet and Chinese orbits. The founding eleven fighters began with a single rifle.

The seventeen-year guerrilla war against the Derg (1975-1991) was decisive in shaping the organizational DNA that would later define the EPRDF's governing style. The TPLF developed an elaborate system of political education, conducting study circles (*gimgema* — self-criticism sessions) in the field that served simultaneously as ideological training, performance evaluation, and discipline mechanisms. In liberated areas of Tigray, the front implemented

land redistribution, established local courts, and created the Relief Society of Tigray (REST), which managed famine relief during the catastrophic 1984-1985 famine — organizing an exodus of over 200,000 farmers to emergency border camps in Sudan between October 1984 and April 1985 (Smith, “Ethiopia and the Politics of Famine Relief,” *MERIP Middle East Report* No. 145, March-April 1987; de Waal, *Evil Days*, Human Rights Watch, 1991). REST operated over 60 schools and 53 clinics in TPLF-controlled territory before 1991, and its literacy program claimed to have educated 405,834 persons between 1981 and 1983 [Young, 1997]. This was administrative capacity that the Derg itself lacked, built under conditions of active warfare. By the late 1980s, the TPLF commanded approximately 100,000 fighters including full-time soldiers and part-time village militia (Human Rights Watch, *Evil Days: Thirty Years of War and Famine in Ethiopia*, 1991; Young 1997). In 1989, Meles orchestrated the formation of the Ethiopian People’s Revolutionary Democratic Front (EPRDF) as a coalition of four ethnically-based parties — the TPLF, the Amhara National Democratic Movement (ANDM), the Oromo People’s Democratic Organization (OPDO), and the Southern Ethiopian People’s Democratic Movement (SEPDM) — with the TPLF as the dominant core. The EPRDF entered Addis Ababa on May 28, 1991, as the Derg regime collapsed.

The insurgent origins matter because they produced a governing elite with three characteristics rarely found in African ruling coalitions: military discipline translated into bureaucratic discipline, ideological coherence providing a shared framework for policy debate, and organizational infrastructure extending below the district level. These were not inherited institutions but forged ones — created in combat conditions and refined over nearly two decades. The comparison with the RPF is direct: Kagame’s movement similarly forged its organizational capacity during the 1990-1994 war fought from Uganda. Both produced governments whose administrative effectiveness reflected wartime organizational discipline. The question — for both — is whether organizations forged in war can generate the peacetime institutional infrastructure required for post-founder sustainability.

G.2 The EPRDF's organizational architecture: Leninist machinery in an African state

The EPRDF operated through a Politburo, a Central Committee, and a 36-member executive committee whose members were selected every three years by a party congress [Vaughan and Tronvoll, 2003]. Its governing ideology, “revolutionary democracy,” replaced Marxism-Leninism in the early 1990s not because the front had abandoned its Marxist commitments but because the Soviet Union’s dissolution made the label internationally untenable [Bach, 2011]. The substance persisted: a vanguard party claiming superior knowledge of social development, operating through “democratic centralism” that combined free discussion within the top leadership with strict hierarchical execution of decisions once reached [Clapham, 2018]. Decision-making was largely concentrated in the TPLF, which held extended internal debates — entirely opaque to outsiders — before presenting conclusions to the broader EPRDF executive committee as fait accompli.

The EPRDF’s penetration of Ethiopian society extended far deeper than the formal party structure. Beginning in the early 2000s and intensifying after the 2005 election crisis, the party built a *one-to-five* cellular organization (*and le amist*) modeled on Leninist practice: every five households were grouped under a cell leader responsible for transmitting party directives downward and information upward. The system served dual purposes that were deliberately inseparable — agricultural extension (distributing improved seeds, fertilizer, health information) and political surveillance (monitoring dissent, ensuring electoral compliance, reporting on household attitudes). By 2011, this structure was formalized as the “developmental army” (*ye-limat serawit*), which organized citizens into networks of thirty households subdivided into one-to-five cells, tasked with implementing development programs and reporting progress. At its peak, the system enrolled an estimated five million people into these cellular networks. A 2009 WikiLeaks cable (09ADDISABABA1201) noted that “of every ten eligible voters in Ethiopia, one is an EPRDF member” — a penetration ratio that

resembled the Chinese Communist Party more than any African ruling coalition.

This was collective authoritarianism with a personalist center: Meles chaired and dominated the Politburo, but the organizational machinery provided institutional ballast that pure personalism lacks. The critical test of whether this was genuinely collective came in 2001, when a faction of senior TPLF founders — including Seeye Abraha (former defense minister), Bitew Belay, and Tewolde Wolde Mariam — challenged Meles over the conduct of the 1998-2000 Eritrean-Ethiopian War and demanded a return to genuine collective leadership. They accused Meles of concentrating personal power at the expense of the TPLF's founding principles of collective decision-making. Meles responded not by accommodating the dissent but by purging the challengers: Seeye Abraha was arrested on corruption charges and imprisoned for six years; other dissenters were expelled from the party. The 2001 crisis was the moment when the “collective” in collective leadership was hollowed out. From that point forward, the EPRDF's institutional machinery functioned as an instrument of Meles's authority rather than a constraint on it — a critical distinction that the formal organizational chart obscured.

G.3 Meles the intellectual: developmental state theory from the guerrilla camp

Meles was not merely a political operator but a genuine intellectual of the developmental state — and the distinction matters because it illuminates both the achievements and the contradictions of the Ethiopian model. His intellectual formation began during his incomplete medical studies at Addis Ababa University in the early 1970s, where the student movement's reading lists ran from Marx and Lenin through Mao and Fanon. In the guerrilla camps of Tigray, Meles reportedly read voraciously: initially orthodox Marxism-Leninism (the TPLF briefly adopted Albanian-style Hoxhaism in the late 1970s), then shifting through the 1990s toward heterodox development economics — Chang's *Kicking Away the Ladder* [2002], Amsden's *Asia's Next Giant* [1989], Johnson's *MITI and the Japanese Miracle* [1982], and

Joseph Stiglitz’s critiques of the Washington Consensus. While serving as prime minister, Meles enrolled in the MBA program in development economics at Erasmus University Rotterdam, completing his thesis — an intellectual commitment unusual among sitting heads of state and reflecting a leader who genuinely engaged with the theoretical foundations of his policy choices.

His unpublished 2006 manuscript, “African Development: Dead Ends and New Beginnings,” presented at a development forum organized by the Initiative for Policy Dialogue at Columbia University, offered a 51-page systematic critique of the neoliberal paradigm applied to Africa [Zenawi, 2006]. The argument was specific: the neoclassical framework’s assumption that rent-seeking was the central problem of African governance was itself a “dead end” because it prescribed institutional constraints on the state precisely when Africa needed state activism. Markets in Africa, Meles argued, suffered not from too much state intervention but from the absence of the kind of strategic intervention that had produced the East Asian miracle. The alternative framework drew explicitly on the South Korean EPB and Taiwanese industrial policy: credit allocation to strategic sectors, infrastructure investment ahead of demand, protection of nascent industries until they achieved global competitiveness.

This argument was refined and published in 2012 as a chapter titled “States and Markets: Neoliberal Limitations and the Case for a Developmental State” in *Good Growth and Governance in Africa*, edited by Joseph Stiglitz, Akbar Noman, Kwesi Botchwey, and Howard Stein [Zenawi, 2012, pp. 140–175]. The chapter appeared months before Meles’s death, making it effectively his intellectual testament. The irony — which the ADRI framework makes legible — is that Meles correctly diagnosed the problem (Africa needed developmental states, not just market liberalization) but failed to solve the institutional prerequisite: developmental states require institutional infrastructure that survives the developmental leader. Park Chung-hee’s EPB survived his assassination because South Korea’s structural transformation had created autonomous economic actors with independent reasons to sustain the system. Meles’s

Ethiopia had no equivalent. The intellectual framework was sophisticated; the institutional architecture to sustain it was not.

The institutional expression of this philosophy was the 1995 constitution’s system of ethnic federalism. Article 39 granted every “nation, nationality, or people” in Ethiopia the unconditional right to self-determination up to and including secession. The constitution established nine ethnically defined regional states, each with substantial autonomy over local governance. This was simultaneously the EPRDF’s greatest institutional innovation and its most dangerous structural weakness. As a strength, ethnic federalism addressed historical grievances against Amhara political hegemony and provided a framework for accommodating Ethiopia’s extraordinary ethno-linguistic diversity — over 80 distinct groups [Aalen, 2006]. The inclusion of a secession right was designed as a safety valve: groups that felt marginalized could credibly threaten exit, compelling the center to negotiate. As a weakness, ethnic federalism politicized ethnic identity as the primary axis of political organization, creating centrifugal pressures that required a strong centralizing force to contain. The system functioned while Meles provided that force. Without him, the centrifugal logic overwhelmed the centripetal institutions.

G.4 ADLI: agricultural transformation and its limits

The EPRDF’s development strategy, Agricultural Development-Led Industrialization (ADLI), adopted in 1993-1994, channeled state resources toward smallholder agriculture as the engine of broader transformation. The logic was sequenced: agricultural productivity gains would generate surplus, surplus would create demand for manufactured goods, and the state would channel both into industrialization. The operational architecture was dense. The government deployed over 60,000 agricultural extension agents — known as Development Agents (DAs) — to rural *kebeles* across the country, creating one of the densest agricultural extension systems in the world at approximately 21 agents per 10,000 farmers (Davis et al., 2010). These DAs distributed “technology packages” combining improved seeds, chemical fertilizers

(primarily DAP and urea), and agronomic advice, coordinated through a network of Farmer Training Centers — one per *kebele*, approximately 18,000 nationwide. A model farmer program identified successful adopters and used them as demonstration nodes for neighbors. The Productive Safety Net Programme (PSNP), launched in 2005 with World Bank and donor support, provided food and cash transfers to approximately eight million chronically food-insecure households in exchange for participation in public works — roads, terraces, irrigation channels — that simultaneously built rural infrastructure (World Bank, 2010).

The results were measurable but must be read carefully. Cereal yields rose from approximately 1.2 tonnes per hectare in the late 1990s to 2.0-2.2 tonnes per hectare by 2012-2013, a near-doubling (World Bank WDI, AG.YLD.CREL.KG: 1,198 kg/ha in 2001; 2,047 kg/ha in 2012; 2,193 kg/ha in 2013). Total cereal production rose from approximately 7 million to over 23 million metric tons, driven by both yield increases and area expansion. Fertilizer use increased from approximately 200,000 metric tons in the late 1990s to over 900,000 by 2012 (Rashid et al., IFPRI Discussion Paper 01304, 2013) — still low by global standards (approximately 25 kg/ha compared to 150+ kg/ha in East Asia) but a dramatic increase from Ethiopia's own baseline. Floriculture emerged as a success story: Ethiopia became Africa's second-largest flower exporter after Kenya, earning over \$200 million annually. GDP growth averaged approximately 10.4 percent annually from 2004 to 2015 by official figures — though Jerven's *Poor Numbers* [2013] and successive IMF Article IV consultations noted that Ethiopian growth statistics were likely overstated by 2-3 percentage points, with true growth more probably in the 7-9% range. Even the lower estimates represent rapid growth by any standard. Poverty declined from 44.2 percent (1999/2000) to approximately 29.6 percent (2010/11). GDP per capita rose from \$164 in 2005 to \$511 by 2012, the year of Meles's death.

The Growth and Transformation Plan I (2010-2015) revealed the gap between ambition and capacity: the plan targeted 11-14.9% annual GDP growth; actual growth was approximately 10.1%. Exports were targeted to grow from \$2.6 billion to \$6.5 billion; they reached ap-

proximately \$3.0-3.3 billion — roughly half the target. Agricultural growth was targeted at 8.1% annually; actual growth was approximately 5-6%. The plan was more successful in infrastructure and social indicators than in its economic transformation targets — a pattern with direct relevance for Rwanda, whose own targets (Vision 2020’s goal of \$900 GDP per capita, later deferred to Vision 2050) have similarly overshot.

But the structural transformation question — the one the ADRI framework foregrounds — is whether this growth fundamentally restructured the economy. Agriculture’s share of GDP declined from approximately 47% in 2004 to 37% by 2015, but the sector still employed over 70% of the labor force. Manufacturing remained below 5% of GDP — a figure that placed Ethiopia closer to pre-industrial Rwanda than to the South Korea or even Vietnam it aspired to emulate. As Oqubay [2015] documented — written by a senior EPRDF official, making it an insider account of unusual candor — the industrial parks strategy faced fundamental constraints that ambition alone could not overcome. The comparison is stark: South Korea at a comparable developmental stage had already built POSCO and Hyundai; Ethiopia’s largest manufacturing operations were cut-and-sew garment factories producing for export at margins that often failed to cover operating costs.

G.5 Party-linked enterprises: the transparency deficit

The ADRI framework’s state economic transparency component highlights a structural problem that development optimists consistently overlooked: the EPRDF operated a parallel economy through party-affiliated conglomerates whose finances were opaque to parliament, the public, and international donors. The most prominent was the Endowment Fund for the Rehabilitation of Tigray (EFFORT), established in 1995 with assets reportedly transferred from TPLF wartime holdings. EFFORT grew into one of Ethiopia’s largest conglomerates, controlling major enterprises across construction (Sur Construction), cement (Mesebo Cement Factory), textiles (Almeda Textile), transport (Trans-Ethiopia), agriculture (Guna Trading), and financial services (Wegagen Bank, Debit Bank). Estimates of EFFORT’s total assets

varied widely — from hundreds of millions to several billion dollars — because the fund was not subject to public audit [Vaughan and Gebremichael, 2011]. A 2009 WikiLeaks cable (09ADDISABABA677) based on discussions with Seeye Abraha — EFFORT’s own former CEO (1995-2001), later imprisoned by Meles — reported that “EFFORT’s books themselves are not subject to any transparent external review” and that “no new EFFORT ventures have been established despite significant profits, lending credibility to the popular perception that the ruling party and its members are drawing on endowment resources to fund their own interests.”

Each of the EPRDF’s constituent parties maintained similar enterprises: the ANDM had TIRET, the OPDO had TUMSA (later Dinsho), and the SEPDM had WENDO. The Metals and Engineering Corporation (MetEC), under military control, operated as an industrial conglomerate with interests in sugar processing, manufacturing, and engineering — including a controversial role as contractor for the Grand Ethiopian Renaissance Dam that produced significant delays and cost overruns before being reassigned.

The comparison with Singapore’s Temasek Holdings is instructive and damning. Temasek publishes annual reports, maintains an independent board, operates under commercial law, and generates transparent returns. EFFORT and its siblings published no consolidated accounts, operated under party rather than commercial governance, and blurred the line between public investment and party patronage. This opacity meant that even genuine developmental investments — and some were genuine — could not be distinguished from rent extraction, corroding both domestic accountability and donor confidence. When the ADRI framework scores state economic transparency, it measures precisely this distinction: the difference between state capitalism that operates under rules (Singapore, scoring high) and state capitalism that operates under patronage (Ethiopia, scoring zero).

G.6 Infrastructure as developmental spectacle

The infrastructure push under the Growth and Transformation Plans (GTP I, 2010-2015; GTP II, 2015-2020) was extraordinary by African standards. The road network expanded from approximately 26,000 km in 1997 to over 110,000 km by 2015. The number of public universities grew from two (Addis Ababa and Haramaya) to over 45, producing a massive expansion of tertiary enrollment. The Addis Ababa Light Rail — the first in sub-Saharan Africa — opened in September 2015, a 34-km system built by the China Railway Group at a cost of approximately \$475 million. The Addis Ababa-Djibouti Railway, a 756-km electrified standard-gauge line built by the China Railway Group and China Civil Engineering Construction Corporation at a cost of approximately \$4.5 billion (financed primarily by Chinese loans), opened in January 2018, replacing a decrepit French-built narrow-gauge line from 1917. Ethiopian Airlines, a state-owned carrier managed with unusual autonomy, grew into Africa's largest airline, generating over \$6 billion in annual revenue by 2019 — one of the few genuinely globally competitive enterprises the Ethiopian state produced.

The Grand Ethiopian Renaissance Dam (GERD), initiated in 2011 on the Blue Nile near the Sudanese border, was the most ambitious project: a 6,450 MW hydroelectric dam expected to cost \$4.8 billion or more, financed largely through domestic bonds and government revenue rather than foreign loans — a deliberate choice to avoid external conditionality. When completed, it will be Africa's largest hydroelectric facility. The dam's geopolitical significance — it threatens Egypt's historical claim to Nile waters — made it a symbol of Ethiopian sovereignty and developmental ambition.

The industrial parks program represented the most explicit attempt at structural transformation. Bole Lemi Industrial Park (Phase I, opened 2014, 156 hectares) attracted garment manufacturers including PVH (Calvin Klein, Tommy Hilfiger) and H&M suppliers. Hawassa Industrial Park, the flagship, opened in July 2016 on 1,350 acres at a cost of approximately \$250 million, built by the China Civil Engineering Construction Corporation in nine months.

PVH was the anchor tenant, joined by other garment and textile manufacturers attracted by Ethiopia's low wages (approximately \$26/month, among the lowest in the world), duty-free access to the U.S. under AGOA, and the government's ambitious "Made in Ethiopia" vision. But the parks' performance fell well short of projections. Worker turnover at Hawassa exceeded 100% annually — workers left faster than they could be trained, driven by wages insufficient to cover living costs in a new city. Productivity remained a fraction of Asian competitors. Export revenues were a fraction of targets. The parks created approximately 80,000 jobs by 2019 — significant but far short of the government's target of two million manufacturing jobs by 2025. The garment sector's contribution to GDP remained negligible. This was the structural transformation deficit that the ADRI framework measures: impressive infrastructure without the deep productive restructuring — indigenous firms, technological upgrading, export competitiveness — that makes an economy self-sustaining.

G.7 The 2005 crisis: competitive authoritarianism's limit

The 2005 election crisis exposed the system's structural contradiction. The Coalition for Unity and Democracy (CUD) mounted the most serious electoral challenge the EPRDF had ever faced. Both sides claimed victory. When protests erupted, government security forces killed approximately 193 demonstrators and injured 763 others; over 60,000 people were arrested, and opposition leaders including CUD president Hailu Shawel, vice chairman Birtukan Mideksa, and Addis Ababa mayor-elect Berhanu Nega were imprisoned on charges of treason (Human Rights Watch, 2006; Arriola, 2008). This was the competitive authoritarian dilemma in its purest form: the regime allowed elections real enough to generate genuine opposition, then crushed that opposition when it proved electorally viable.

The private diplomatic record reveals the depth of Meles's authoritarian response. In a January 2010 meeting with U.S. Under Secretary of State Maria Otero — recorded in a confidential cable subsequently published by WikiLeaks (10ADDISABABA163) — Meles was

asked about imprisoned opposition leader Birtukan Mideksa. His response was unequivocal: **“We will crush them with our full force,”** he said, and **“they will vegetate like Birtukan in jail forever.”** In a separate 2009 meeting with U.S. Ambassador Donald Yamamoto (cable 09ADDISABABA1770), Meles articulated the philosophical basis of his position: Ethiopia was pursuing “a democratic paradigm fundamentally different from that accepted by the United States,” and the differences were “fundamental, not technical.” He rejected the assumption that development depended on governance in the American sense, arguing that the U.S. approach through NGOs created “another network of patronage” that “prevents doing away with patronage in Africa.” These cables reveal a leader who was not merely repressive by default but intellectually committed to an alternative model — one that explicitly rejected the feedback mechanisms the ADRI framework identifies as essential for long-term sustainability.

Post-2005, the EPRDF tightened control progressively — the 2008 civil society proclamation restricted NGO funding, the 2009 anti-terrorism proclamation criminalized dissent, and the 2010 election produced a farcical 99.6 percent victory for the ruling coalition. By 2009, party membership had reached the point where “of every ten eligible voters in Ethiopia, one is an EPRDF member” (cable 09ADDISABABA1201) — a penetration that resembled Leninist mass mobilization more than democratic participation.

G.8 Death, succession, and institutional collapse

Meles died on August 20, 2012, in a Brussels hospital after weeks of unexplained absence from public life — the secrecy surrounding his illness itself evidence of the succession vacuum. The EPRDF’s inner circle selected Hailemariam Desalegn, an ethnic Wolayta from the Southern Nations coalition partner and a trained sanitary engineer with no independent political base. He was a consensus placeholder — what one analyst called “a frontman without teeth” who restricted himself to seeking consensus rather than issuing Meles’s characteristic edicts (International Crisis Group, 2015). The choice was diagnostic: in a genuinely collective

2703 system, the successor would have been selected through institutional procedures that conferred
2704 independent authority. Hailemariam was selected precisely because he threatened no faction
2705 — which meant he could lead no faction either.

2706 The EPRDF's collective leadership model held through 2015, and growth continued on
2707 institutional momentum — GDP growth remained above 8% through 2017, the infrastructure
2708 pipeline kept producing, the extension agents kept distributing seeds. This is the period
2709 that most closely resembles the post-Park period in South Korea: economic continuity
2710 despite political uncertainty. But the comparison immediately reveals the difference. South
2711 Korea's economy continued because Samsung, Hyundai, and POSCO were autonomous
2712 economic actors with their own institutional momentum, global supply chains, and competitive
2713 imperatives. Ethiopia's economy continued because government spending, donor flows, and
2714 Chinese-financed infrastructure projects maintained aggregate demand. The former was
2715 structural resilience; the latter was fiscal inertia. The distinction matters because fiscal inertia
2716 requires continued state capacity to sustain, while structural resilience is self-reinforcing.

2717 The Oromo protests that erupted in November 2015 — initially over an Addis Ababa master
2718 plan that would have expanded the city's administrative boundary into surrounding Oromia
2719 farmland — rapidly generalized into a nationwide crisis that exposed the ethnic federalism
2720 system's fragility without its founder. Protests spread to the Amhara region by mid-2016.
2721 A state of emergency was declared in October 2016. Hundreds were killed. Foreign-owned
2722 factories in industrial parks were attacked. Hailemariam resigned on February 15, 2018,
2723 candidly admitting his government had been unable to resolve the crisis. Abiy Ahmed, an
2724 Oromo from the OPDO and a former military intelligence officer, was elected prime minister
2725 by the EPRDF council on April 2, 2018.

2726 Abiy's initial months produced euphoria — the release of political prisoners, the lifting of
2727 media bans, the rapprochement with Eritrea (for which he received the 2019 Nobel Peace
2728 Prize). But what followed was not succession failure in the usual sense — a weak successor

unable to hold the system together. It was institutional demolition by a successor who chose to dismantle the very architecture that had produced Ethiopia's developmental gains. In November 2019, Abiy dissolved the EPRDF entirely and replaced it with the Prosperity Party (*Ezema*), a centralized organization under his personal leadership that explicitly rejected ethnic federalism's foundational logic. The TPLF refused to join and was progressively marginalized. Abiy removed TPLF leaders from top security positions, arrested prominent figures including Seeye Abraha (again) and the head of MetEC, and signaled that the era of Tigrayan institutional dominance was over.

The Tigray War began on November 4, 2020, when TPLF forces attacked the Northern Command of the Ethiopian National Defense Force — or when the federal government attacked Tigray, depending on which side's narrative one accepts. The September 2020 decision by the Tigray regional government to hold its own elections in defiance of the federal government's pandemic-related postponement was the proximate trigger, but the structural cause was the collapse of the ethnic federal bargain: a system designed to accommodate diversity through negotiated autonomy had been replaced by a centralizing project that the TPLF experienced as existential threat. What followed was catastrophic: Eritrean forces entered from the north, Amhara militia from the west, and federal forces from the south in a multi-front assault. Over the next two years, the conflict produced an estimated 300,000 to 600,000 deaths (Ghent University's Institute of Development Policy estimates), mass displacement of approximately two million people, systematic sexual violence documented by the UN and Amnesty International, and what the U.S. government determined constituted acts of genocide. Agricultural systems in Tigray were deliberately destroyed — livestock slaughtered, crops burned, farming equipment confiscated. Infrastructure built over two decades was wrecked: health facilities, schools, the Mekelle Industrial Park.

The Pretoria Agreement of November 2, 2022 — mediated by the African Union under former Nigerian president Olusegun Obasanjo — ended the active fighting, but the developmental

destruction was irreversible in the near term. Tigray’s GDP was estimated to have contracted by 50% or more during the war years. The region that had been the TPLF’s developmental showcase — where the extension system was densest, the party infrastructure most developed, the model farmers most productive — was reduced to humanitarian dependency.

The system collapsed within six years of Meles’s death. The parallels to Rwanda are precise enough to constitute a prediction:

Dimension	Ethiopia (Meles)	Rwanda (Kagame)
Origin	Post-civil war (1991)	Post-genocide (1994)
Ethnic structure	Tigrayan minority coalition ruling over diverse ethnic groups	Tutsi-dominated RPF ruling over Hutu majority
Economic model	State-led developmental authoritarianism	State-led developmental authoritarianism
Growth record	~10.4% avg GDP growth (2004-2015)	~7-8% avg GDP growth (2000-2020)
Succession mechanism	None; personalist	None; constitutional amendment to extend Kagame to 2034
Structural transformation	Agriculture 37%+ of GDP; industrial parks underperforming	Agriculture 43% of labor force; minimal manufacturing

G.9 The ADRI diagnosis: why the insurance failed

Under the ADRI framework, Ethiopia under Meles scored approximately 0.27 — the lowest among the deep cases except for the most personalist dictatorships:

Element	Score	Evidence
Institutionalized succession	0	No mechanism independent of Meles's personal authority; 2001 purge eliminated collective constraint
Structural transformation	0.25	Agriculture still 37%+ of GDP, 70%+ of employment; manufacturing below 5%; no indigenous firm of global competitiveness
Real feedback mechanisms	0	2005 crackdown eliminated genuine electoral feedback; 2010 election 99.6% victory; civil society and media restrictions
Transparent state capitalism	0	EFFORT, TIRET, TUMSA operated without public audit; MetEC under military control; no transparency mechanism
Meritocratic civil service	0.5	Extension system and performance culture were real; but civil service ran upward to the leader, not to independent institutions
Total	0.75/5 = 0.15	

The scoring reveals the analytical key: Ethiopia scored zero on every institutional component except the one (civil service competence) that depends least on independent institutional architecture. The extension agents were competent, the road-building was real, the economic growth was genuine — but none of this was anchored in institutions capable of surviving the founder’s departure. Compare Singapore’s mechanical ADRI of 0.65: high scores on succession (four orderly transitions), feedback (calibrated electoral responsiveness), transparency (Temasek’s published accounts), and civil service independence (PSC’s autonomous recruitment). Singapore’s insurance covers multiple failure modes; Ethiopia’s covered none.

Under Abiy, the score deteriorated further — succession institutionalization arguably went negative as Abiy actively dismantled the collective leadership structures that had provided at least partial institutional ballast. The framework predicted that Path D regimes — collective authoritarian development — are vulnerable to personalist capture by a successor who breaks the collective constraint. Ethiopia provides the cleanest empirical confirmation: the system collapsed not because the institutions were too weak to sustain themselves, but because a successor actively chose to destroy them. Institutions are insurance against precisely this scenario — and Ethiopia had too little insurance to survive the claim.

Meles did not institutionalize succession. Kagame has not institutionalized succession — Rwanda’s 2015 constitutional amendment allowing him to rule until 2034 is the formalization of personalism, the inverse of institutionalization. Meles suppressed ethnic tensions through coercion; Kagame has suppressed ethnic tensions through the legal prohibition of “divisionism.” The underlying Hutu-Tutsi cleavage has not been resolved — it has been frozen. Matfess’s work [2015] explicitly pairs them: “Rwanda and Ethiopia: Developmental Authoritarianism and the New Politics of African Strong Men.” Ethiopia after Meles is the counterfactual for Rwanda after Kagame. The discount rate framework predicts that personalist developmental authoritarianism produces genuine growth during the leader’s tenure but fails to create the institutional infrastructure for post-leader stability. Ethiopia’s trajectory — from “African

2790 miracle” to civil war within six years — is exactly this prediction realized.

2791 H C.5 Vietnam: Collective Authoritarianism as Insur- 2792 ance (Path D, ADRI = 0.41)

2793 H.1 The Doi Moi revolution: reform from within

2794 Vietnam’s post-reunification economic trajectory provides one of the most compelling demon-
2795 strations of how collective authoritarian institutions can generate developmental resilience —
2796 and how the diffusion of power within a single-party system creates a form of institutional
2797 insurance that personalist systems cannot replicate. The story begins in crisis. After reunifi-
2798 cation in 1975, the Communist Party of Vietnam (CPV) imposed centralized planning on the
2799 south, nationalizing industry and collectivizing agriculture. The results were catastrophic.
2800 By the mid-1980s, GDP per capita had fallen to approximately \$83 — making Vietnam
2801 one of the poorest countries on Earth, poorer than most of sub-Saharan Africa. Inflation
2802 exceeded 700% in 1986. Agricultural output stagnated despite fertile land and a large farming
2803 population. The Soviet Union, Vietnam’s primary patron, was itself entering terminal decline.
2804 The country faced a stark choice between doubling down on orthodoxy and embracing reform.
2805 The critical institutional fact is *how* the reform decision was made. Unlike China, where Deng
2806 Xiaoping’s personal authority drove the post-Mao opening, Vietnam’s Doi Moi (“Renovation”)
2807 emerged through a genuinely collective process that unfolded over several years. The reforms
2808 did not originate at the top. Beginning in the late 1970s and accelerating through the
2809 early 1980s, local officials in southern provinces — particularly in Ho Chi Minh City and
2810 the Mekong Delta — began experimenting with market mechanisms in defiance of central
2811 directives. These experiments were called “fence-breaking” (*pha rao*), a metaphor for stepping
2812 outside the boundaries of permitted economic activity. Farmers in the south began selling
2813 surplus production on informal markets. Factory managers in Ho Chi Minh City negotiated

directly with foreign buyers. Provincial party secretaries turned a blind eye to private trading that was technically illegal under socialist planning.

The central leadership initially resisted these experiments. But the evidence of their success was undeniable: provinces that permitted market activity were feeding their populations; provinces that enforced orthodoxy were not. The intellectual groundwork for reform was laid by a cadre of economists and party theorists who studied the failures of central planning and the successes of market-oriented reforms in China and Hungary. The journal *Nghien Cuu Kinh Te* (Economic Research) published increasingly bold analyses through the early 1980s, creating intellectual space for heterodox thinking within the party.

The decisive institutional moment came at the Sixth National Congress of the CPV in December 1986. The Congress elected Nguyen Van Linh as General Secretary — a reformist who had been purged from the Politburo in 1982 for his support of southern market experiments but was now elevated precisely because the party recognized the failure of orthodoxy. The Congress formally adopted Doi Moi as party policy, ratifying the bottom-up market experiments that had already demonstrated their effectiveness. This was institutional decision-making at its most characteristic for Vietnam: the party debated internally, assessed evidence, replaced leadership that had failed, and adopted a new course — all without public rupture, purge, or crisis. The contrast with the Soviet Union’s perestroika — which began around the same time but produced political chaos and systemic collapse — is instructive. Vietnam reformed its economy while maintaining political stability because the party’s collective decision-making process channeled reform through institutional mechanisms rather than staking everything on a single leader’s vision.

H.2 The reform sequence: gradualism as institutional discipline

The Doi Moi reforms unfolded in a carefully sequenced progression that reflected the party’s institutional caution — learning from each phase before advancing to the next.

Agricultural decollectivization (1988-1993). Resolution 10 of the Politburo, issued in April 1988, formally recognized household farming and assigned land-use rights to individual families for periods of ten to fifteen years. The effects were immediate and dramatic. Vietnam transformed from a rice importer to the world's second- or third-largest rice exporter within three years. Rice production increased from approximately 17 million tons in 1988 to over 22 million tons by 1992. The 1993 Land Law formalized land-use rights, allowing households to exchange, transfer, lease, inherit, and mortgage their land-use certificates — creating a de facto property rights system within the framework of continued state land ownership. Agricultural productivity surged, releasing labor for manufacturing and generating the surplus that funded subsequent industrialization.

Price liberalization and macroeconomic stabilization (1989). In March 1989, the government implemented a comprehensive price liberalization, eliminating most subsidies and allowing market pricing for the majority of goods. Simultaneously, interest rates were raised sharply to positive real levels, the dong was devalued to near-market rates, and fiscal discipline was imposed. Inflation fell from over 300% in 1988 to under 35% by 1989 and to single digits by the mid-1990s — a stabilization achievement that rivaled the best-performing transition economies and far surpassed the chaos that accompanied Russia's "shock therapy." The critical difference was institutional: Vietnam's reforms were implemented by a functioning state apparatus with administrative reach into every village, whereas Russia's reforms were implemented in an institutional vacuum created by the Soviet Union's collapse.

Foreign direct investment opening (1987-2000). The Foreign Investment Law of 1987 — passed even before the full Doi Moi reforms were implemented — created the legal framework for FDI. The law was progressively liberalized through the 1990s, with amendments in 1990, 1992, and 1996 expanding the sectors open to foreign investment and simplifying approval procedures. Vietnam joined ASEAN in 1995, signed a bilateral trade agreement with the United States in 2000, and acceded to the World Trade Organization in 2007 — each step

deepening integration into the global economy and locking in reforms through international commitments that would be costly to reverse.

Bilateral trade agreements and WTO accession. Vietnam's integration into the global economy was accelerated by a series of trade agreements that locked in reforms through international commitments. The U.S.-Vietnam Bilateral Trade Agreement (BTA), signed in July 2000 and effective December 2001, was transformative: it reduced average U.S. tariffs on Vietnamese exports from approximately 40% to 4%, opening the American market to Vietnamese garments, footwear, seafood, and furniture. Vietnamese exports to the United States surged from approximately \$1 billion in 2001 to over \$100 billion by 2023. WTO accession in January 2007, after twelve years of negotiations, required Vietnam to implement comprehensive trade liberalization, intellectual property protections, and regulatory transparency measures — each of which strengthened the institutional framework for market-oriented growth.

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), which Vietnam joined in 2018, and the EU-Vietnam Free Trade Agreement (EVFTA), effective August 2020, further deepened Vietnam's integration. These agreements function as external institutional anchors: compliance with their provisions requires institutional reforms (transparency in government procurement, independent dispute resolution, protection of labor rights) that domestic politics alone might not produce. The analogy with EU conditionality in Central and Eastern Europe is imperfect — the CPTPP and EVFTA lack the EU's comprehensive enforcement mechanisms — but the direction is similar: international commitments create external constituencies for institutional quality that reinforce domestic reform incentives.

State enterprise reform. The reform of state-owned enterprises (SOEs) proceeded more gradually than agricultural or trade reform — reflecting the political sensitivity of restructuring entities that employed millions and served as patronage networks for party officials.

The number of SOEs was reduced from approximately 12,000 in the early 1990s to roughly 3,000 by 2010 through mergers, equitization (partial privatization), and closures. Large SOEs in strategic sectors — Petrovietnam (oil and gas), EVN (electricity), Viettel (telecommunications), Vietnam Airlines — remained under state control but were granted increasing operational autonomy. Viettel, originally a military telecommunications company, became one of Southeast Asia’s most dynamic firms, expanding into mobile services across Africa, Latin America, and Southeast Asia. The SOE sector remained a source of inefficiency and corruption — the Vinashin shipbuilding scandal of 2010, which revealed \$4.5 billion in debt at a single state conglomerate, demonstrated the governance weaknesses that persisted. But the gradual approach avoided the mass unemployment and social disruption that accompanied rapid privatization in post-Soviet economies.

H.3 The institutional mechanics of reform: party management of market transition

The CPV’s management of the market transition reveals an institutional sophistication that distinguishes Vietnam from both the Soviet collapse and the Chinese model. The party maintained control over the reform process through several mechanisms that deserve detailed examination.

The National Congress as institutional anchor. The CPV’s National Congress, held every five years, served as the institutional mechanism through which reform direction was ratified and leadership was selected. Unlike the Chinese party congresses, which by the Hu era had become largely ceremonial (the real decisions being made in advance by the outgoing PBSC), Vietnamese congresses involved genuine deliberation and, as the 2001 case demonstrated, could produce outcomes that surprised the outgoing leadership. The Congress elected the Central Committee, which elected the Politburo, which selected the General Secretary — a cascading selection process that distributed authority rather than concentrating

2916 it.

2917 **Provincial experimentation and central learning.** The reform process was characterized
2918 by a pattern that scholars have described as “experimentation under hierarchy”: provinces
2919 were given latitude to try market-oriented policies, successful experiments were studied and
2920 adopted nationally, and failed experiments were quietly abandoned. This pattern — which
2921 bore similarities to China’s Special Economic Zone model but operated with less central
2922 direction — allowed the party to learn from market experimentation without committing
2923 to reforms that might prove destabilizing. The Ho Chi Minh City authorities’ early market
2924 experiments, initially unauthorized, became the template for national policy precisely because
2925 the institutional system could absorb local innovation without experiencing it as a threat to
2926 central authority.

2927 **The role of the military-industrial complex.** The Vietnam People’s Army occupied a
2928 unique institutional position: it was both a military force and an economic actor. Military-
2929 owned enterprises operated across telecommunications (Viettel), banking, real estate, and
2930 manufacturing. Viettel’s success — growing from a military signals company into Southeast
2931 Asia’s largest mobile operator with over 77 million subscribers in Vietnam and operations in ten
2932 countries — demonstrated that state ownership did not preclude commercial dynamism when
2933 managed with operational autonomy. The military’s economic interests created a constituency
2934 within the party for continued market reform, because senior officers’ institutional interests
2935 were tied to the economic growth that reform produced. This military-commercial complex
2936 is analytically distinct from the EPRDF’s party enterprises (EFFORT, TIRET) or Rwanda’s
2937 Crystal Ventures Limited, because the Vietnamese military enterprises operated with greater
2938 transparency and were subject to (imperfect but real) commercial discipline.

H.4 The results: structural transformation at scale

The cumulative results of the Doi Moi reforms constitute one of the most impressive developmental transformations of the late twentieth century. GDP per capita rose from \$83 in 1986 to approximately \$4,700 by 2024 — a 57-fold increase in less than four decades. The poverty rate fell from over 70% in the late 1980s (making Vietnam one of the world’s poorest countries) to under 5% by 2020 (comparable to middle-income economies) — a poverty reduction achievement second only to China’s in absolute terms and arguably more impressive relative to Vietnam’s smaller resource base. Life expectancy rose from approximately 62 years in 1986 to 75 years by 2020. Literacy rates, already high by developing-country standards due to the socialist education system, reached near-universality. The Human Development Index increased from 0.463 in 1990 to 0.726 by 2021, moving Vietnam from “low” to “high” human development. Manufacturing rose from a negligible share of GDP to approximately 24% — a level of structural transformation that places Vietnam ahead of most developing countries and on a trajectory comparable to the early phases of East Asian industrialization.

The FDI-driven manufacturing model became Vietnam’s primary engine of structural transformation. Samsung’s investment is the most dramatic single example: beginning with a mobile phone assembly plant in Bac Ninh province in 2008, Samsung expanded its Vietnamese operations to encompass a total investment of approximately \$23.2 billion across multiple facilities, employing roughly 87,000 Vietnamese workers and generating approximately \$62.5 billion in revenue — making Samsung Vietnam’s single largest exporter and employer. Samsung’s Vietnamese operations alone account for approximately half of the company’s global smartphone production. Intel invested \$1.5 billion in a chip assembly and testing facility in Ho Chi Minh City. LG, Canon, Foxconn, and dozens of other multinational manufacturers established major operations, drawn by competitive wages, a young and literate workforce, political stability, and improving infrastructure.

Total exports surged from \$2.4 billion in 1990 to \$405.5 billion by 2024 — a 169-fold

increase that reflects Vietnam’s deep integration into global manufacturing supply chains. The country became a major exporter of electronics, garments, footwear, furniture, and seafood. The U.S.-China trade war beginning in 2018 accelerated Vietnam’s FDI inflows as manufacturers diversified supply chains away from China — Vietnam was perhaps the single largest beneficiary of this “China plus one” strategy.

Vietnam’s integration into global supply chains accelerated further during the U.S.-China trade war that began in 2018. As multinational manufacturers sought to diversify production away from China — the “China plus one” strategy — Vietnam emerged as the primary beneficiary. FDI inflows surged: registered FDI reached \$36.6 billion in 2019, and while the COVID-19 pandemic temporarily disrupted flows, they recovered quickly. Vietnam’s share of U.S. imports of electronics, furniture, and garments increased markedly as firms relocated production from China. The country became the world’s second-largest exporter of smartphones (after China) and a major production hub for athletic footwear (Nike and Adidas both operate major Vietnamese facilities).

The transformation was not without limitations. Vietnamese domestic firms remained largely confined to low-value segments of global supply chains — assembling and packaging rather than designing or branding. The technology transfer from Samsung and other multinationals to domestic suppliers was limited. The SOE sector continued to absorb a disproportionate share of domestic credit while contributing less to growth than the private sector. Environmental degradation — particularly water pollution from manufacturing and intensive aquaculture — imposed costs that official growth statistics did not capture. But measured by the ADRI framework’s structural transformation component, Vietnam’s achievement was substantial: the economy had been fundamentally restructured from subsistence agriculture to globally integrated manufacturing, creating millions of jobs in sectors with productivity levels far above farming.

H.5 Human capital and the education system

Vietnam's educational achievements provided a critical foundation for FDI-driven industrialization. The socialist education system — whatever its ideological limitations — had produced near-universal literacy by the 1980s, a feat that most developing countries with comparable income levels had not achieved. When Doi Moi opened the economy to foreign investment, Vietnam offered multinational manufacturers something rare in the low-wage developing world: a literate, numerate workforce capable of being trained in modern manufacturing processes.

The government invested heavily in expanding education at all levels during the reform era. The number of universities and colleges grew from approximately 100 in 1990 to over 400 by 2020. Vocational training institutions — critical for the manufacturing sector — expanded to serve hundreds of thousands of students annually. STEM education was prioritized, with Vietnamese students consistently performing well on international assessments: in the OECD's Programme for International Student Assessment (PISA), Vietnam ranked higher than many OECD countries in mathematics and science — an extraordinary result for a country with GDP per capita one-tenth that of the average OECD member.

The education investment translated directly into labor force quality. Samsung's Vietnamese factories achieved productivity levels approximately 80-85% of comparable South Korean facilities within a few years of operation — a rapid convergence that reflected the workforce's capacity for learning. Intel's chip testing facility in Ho Chi Minh City employed Vietnamese engineers trained at Vietnamese universities to perform complex quality assurance procedures. The vocational training system, while still inadequate to meet the full demand of the manufacturing sector, produced workers capable of operating advanced machinery, reading technical specifications, and working in teams — skills that the agricultural economy had not required.

The human capital investment also created the technocratic class that staffed the civil service

and managed the reform process. Unlike Ethiopia, where the civil service depended heavily on the EPRDF's party discipline for its effectiveness, or Rwanda, where administrative quality depends on Kagame's personal oversight, Vietnam's civil service drew on a broad pool of educated professionals whose competence derived from institutional education systems rather than from any individual leader's attention.

H.6 Collective leadership: the institutional architecture

Vietnam's critical institutional feature — the one that distinguishes it from China, Ethiopia, and Rwanda in the ADRI framework — is its system of collective leadership. Power in Vietnam is formally distributed among four pillars: the General Secretary of the Communist Party (who chairs the Politburo and controls party organization), the President (head of state and nominal commander-in-chief), the Prime Minister (head of government and chief administrator), and the Chairman of the National Assembly (head of the legislature). No single individual holds more than one of these positions simultaneously — a norm that, until 2024, had never been broken in the post-Ho Chi Minh era.

The institutional mechanics of this collective system are more than ceremonial. The Central Committee of the CPV — a body of approximately 180 full members and 20 alternate members elected by the National Congress — exercises genuine authority over the Politburo. This is the institutional feature with the greatest analytical significance for the insurance framework: in Vietnam, the broader party body can and has overridden the inner circle.

The most dramatic demonstration occurred in 2001, when the Central Committee rejected the Politburo's recommendation for General Secretary. The Politburo had endorsed Nguyen Duc Manh's continuation; the Central Committee instead elected Nong Duc Manh. This event has no parallel in China, where the Politburo Standing Committee's decisions are never publicly challenged by the Central Committee, or in Rwanda, where the RPF's formal structures are entirely subordinate to Kagame's personal authority. The 2001 override demonstrated

that Vietnam's collective leadership was not merely nominal — the institutional checks had practical force.

H.7 Eight transitions: the empirical record

The resilience of Vietnam's collective system is demonstrated by its succession record. Since Ho Chi Minh's death in 1969, Vietnam has navigated eight General Secretary transitions — each orderly, each accomplished without economic disruption, and each demonstrating different dimensions of institutional capacity:

1. **Ho Chi Minh to Le Duan (1969):** Le Duan had effectively led the party since the early 1960s while Ho served increasingly as a symbolic figurehead; the transition was orderly despite wartime conditions. Le Duan consolidated authority as a war leader and maintained it for seventeen years — the longest tenure of any post-Ho General Secretary. His death in 1986, coming at the nadir of Vietnam's economic crisis, created the political opening for reform.
2. **Le Duan to Truong Chinh (1986):** Le Duan died in office on July 10, 1986; the party's orthodox ideologue Truong Chinh — who had been General Secretary in the 1950s before being removed for excesses during land reform — served briefly as interim General Secretary. His appointment was a placeholder to maintain continuity until the Sixth Congress could convene.
3. **Truong Chinh to Nguyen Van Linh (1986):** The Sixth Congress, held in December 1986, elected reformist Nguyen Van Linh as General Secretary — a decisive break with the Le Duan era's economic orthodoxy. Linh had been purged from the Politburo in 1982 for supporting southern market experiments; his elevation by the Congress represented the party's institutional capacity to replace failed leadership with reform-oriented alternatives. Linh's selection was the institutional equivalent of China's Deng-era opening but occurred through a formal party congress rather than through an informal

paramount leader's authority.

4. **Nguyen Van Linh to Do Muoi (1991)**: The Seventh Congress selected Do Muoi, a conservative figure who nevertheless maintained Doi Moi's momentum — demonstrating that the reforms had acquired institutional inertia independent of any individual leader's preferences. Do Muoi's conservatism on political matters (he presided over the party's reaffirmation of political monopoly in response to the Soviet collapse) coexisted with continued economic liberalization — a separation of political and economic reform that mirrored China's approach.

5. **Do Muoi to Le Kha Phieu (1997)**: This transition occurred at a Central Committee plenum between congresses, demonstrating the system's flexibility — leadership changes did not require the full apparatus of a National Congress. Le Kha Phieu, a military figure, reflected the party's periodic rotation of the top position among different institutional constituencies (military, economic technocracy, party apparatus, security services).

6. **Le Kha Phieu to Nong Duc Manh (2001)**: The most institutionally significant transition. The Central Committee rejected the Politburo's recommendation — an event with no parallel in China, where the Politburo Standing Committee's decisions on leadership are always ratified by the Central Committee without challenge. The 2001 vote demonstrated that Vietnam's formal institutional hierarchy — Central Committee above Politburo — had practical force, not merely nominal authority. This single event is the strongest piece of evidence that Vietnam's collective leadership is genuine rather than theatrical.

7. **Nong Duc Manh to Nguyen Phu Trong (2011)**: The Eleventh Congress selected Trong, a party theorist and ideologue who would become the longest-serving General Secretary since Le Duan. Trong launched a massive anti-corruption campaign ("blazing furnace") that prosecuted thousands of officials, including two former members of the Politburo — an unprecedented escalation that paralleled Xi Jinping's campaign in

China but operated within (rather than against) the collective leadership framework.

8. **Nguyen Phu Trong’s death and To Lam (2024):** Trong died in office on July 19, 2024, after a prolonged illness. To Lam, who had been serving as President since May 2024 (following the unprecedented resignation of President Vo Van Thuong, who was implicated in a corruption investigation), was elected General Secretary by the Central Committee — marking the first time since Ho Chi Minh that one individual held both positions simultaneously. This concentration of authority in a security-services figure represents the most significant challenge to Vietnam’s collective leadership norm since the system was established.

The economy did not flinch during any of these transitions. GDP growth continued through each succession. Foreign investors did not flee. Policy continuity was maintained. No transition produced a purge of the predecessor’s allies on the scale seen in China under Xi or Ethiopia under Abiy. The system’s resilience is not attributable to any single leader’s quality — it is attributable to the institutional architecture that distributes power and constrains individual accumulation.

H.8 The FDI absorption model: Vietnam’s distinctive pathway

Vietnam’s FDI-driven industrialization model deserves detailed examination because it represents a developmental pathway distinct from both the Korean chaebol model and the Chinese SOE-plus-private-sector model. Vietnam’s approach relied overwhelmingly on foreign multinationals rather than indigenous firms as the vehicles of structural transformation — a strategy that produced rapid employment creation and export growth but limited technology transfer and domestic value capture.

The Samsung case is emblematic. Samsung’s first significant investment in Vietnam came in 2008, when it established a mobile phone assembly plant in Bac Ninh province, northeast of Hanoi. The initial investment was approximately \$670 million. Over the following

thirteen years, Samsung expanded its Vietnamese operations to include: Samsung Electro-Mechanics Vietnam (SEMV) in Thai Nguyen province, producing camera modules and flexible printed circuit boards; Samsung Display Vietnam (SDV), the world's largest mobile display manufacturing facility; and Samsung SDIN (Samsung SDI), producing batteries. By 2024, Samsung's total cumulative investment in Vietnam had reached approximately \$23.2 billion, employing roughly 87,000 Vietnamese workers.

The scale of Samsung's presence in Vietnam's economy is difficult to overstate. Samsung Vietnam's exports alone accounted for approximately 25% of Vietnam's total exports — a concentration of export revenue in a single foreign firm that creates both opportunity and vulnerability. The opportunity is obvious: Samsung's investment created tens of thousands of manufacturing jobs with productivity levels far above agriculture, trained a generation of Vietnamese workers in advanced manufacturing processes, and connected Vietnam to global supply chains. The vulnerability is equally clear: Samsung's investment decisions are made in Seoul, not Hanoi. If Samsung were to relocate its Vietnamese operations — to India, Indonesia, or elsewhere — the impact on Vietnam's trade balance and employment would be devastating.

The Vietnamese government has attempted to address the technology transfer limitation through policies requiring foreign firms to source locally. But the results have been modest: the share of inputs sourced from Vietnamese suppliers in Samsung's Vietnamese operations remains below 20%, with the majority of components imported from Korea, China, and other Asian suppliers. Vietnamese firms have entered Samsung's supply chain primarily at the lowest-value segments — packaging, plastic injection molding, wire harnesses — rather than in high-value components like semiconductors, displays, or circuit boards. This pattern echoes a broader challenge of FDI-dependent industrialization: the foreign firms bring jobs but not necessarily the indigenous capability-building that characterizes the Korean or Taiwanese models.

The comparison with South Korea’s developmental pathway is instructive. Park Chung-hee deliberately built indigenous firms (Samsung, Hyundai, POSCO) that, while initially dependent on foreign technology and capital, progressively developed autonomous technological capabilities. The state-chaebol relationship was designed to *create* Korean firms that could eventually compete globally without state support. Vietnam’s FDI model, by contrast, relies on *attracting* foreign firms that produce in Vietnam but retain their core capabilities (R&D, design, branding) elsewhere. The structural transformation is real — workers are moving from farms to factories — but the depth of the transformation is shallower than Korea’s because the technological capabilities remain foreign-owned.

Intel’s \$1.5 billion chip assembly and testing facility in Ho Chi Minh City illustrates both the opportunity and the limitation. The facility tests and packages chips designed in the United States and fabricated elsewhere — Vietnam provides the assembly labor, not the design or fabrication capability. Foxconn’s expansion into Vietnam follows the same pattern: the firm assembles Apple products using Vietnamese labor but sources all high-value components externally.

Vietnam’s challenge for the next phase of development is whether it can move from FDI-dependent assembly to indigenous innovation — the same transition that South Korea achieved in the 1980s-90s but that most FDI-dependent developing countries have failed to make. The Vietnamese government has signaled awareness of this challenge through increased investment in STEM education, the establishment of technology parks, and policies encouraging Vietnamese startups. But the institutional and human capital requirements for this transition are formidable, and the outcome is uncertain.

H.9 The To Lam risk: personalist capture in real time

The key question for the insurance framework is whether Vietnam’s collective model can survive its most serious challenge: To Lam’s consolidation of power following Nguyen Phu

Trong's death in July 2024. To Lam, who served as Minister of Public Security before becoming President in May 2024, briefly held both the General Secretary and President positions simultaneously — breaking the norm of separation that had been maintained since Ho Chi Minh's era. His background in the security apparatus and his use of anti-corruption investigations to sideline rivals draw explicit parallels to Xi Jinping's trajectory in China.

The parallels are specific and concerning. Like Xi, To Lam rose through the security services rather than the economic technocracy. Like Xi, he has used anti-corruption campaigns to remove potential rivals — multiple senior officials were investigated or removed during his tenure as security chief. Like Xi, he has accumulated positions in ways that challenge established norms of power distribution. The question is whether Vietnam's institutional architecture — the Central Committee's demonstrated capacity to override the Politburo, the norm of term limits, the four-pillar power structure — provides sufficient constraint to prevent the kind of personalist capture that occurred in China.

There are reasons for cautious optimism and serious concern. On the optimistic side: Vietnam's Central Committee has demonstrated independence that China's never did; the party's internal norms are more deeply institutionalized across a longer succession history; the Vietnamese economy is more dependent on FDI than China's, creating external constituencies for institutional predictability; and the military, while important, does not play the dominant political role it does in some other single-party states. On the concerning side: anti-corruption campaigns provide a mechanism for eliminating rivals under the cover of institutional legitimacy; the security services command resources and intelligence that other institutional actors lack; and the global trend toward personalist consolidation — visible in China, Turkey, Russia, India, and elsewhere — suggests structural forces that Vietnam's institutions may not be immune to.

Vietnam may be the live test of whether collective authoritarianism can resist the gravitational pull toward personalization that the framework predicts. If To Lam succeeds in consolidat-

ing personal authority on the Xi model, it will confirm the framework's most pessimistic prediction: that authoritarian institutional constraints, lacking independent enforcement mechanisms, inevitably succumb to leaders determined to break them. If Vietnam's institutional architecture holds — if the Central Committee constrains To Lam as it constrained his predecessors — it will demonstrate that collective authoritarianism can provide genuine insurance, at least for a time. The outcome will have implications not only for Vietnam's 100 million citizens but for the theoretical framework itself.

H.10 Vietnam and the framework: comparative institutional analysis

Vietnam's case illuminates several dimensions of the insurance framework that the core cases do not fully explore.

Collective versus personalist authoritarianism. The contrast between Vietnam's collective system and Ethiopia's nominally collective but practically personalist system reveals that the institutional form of collective leadership is insufficient — what matters is whether the collective constraint has practical force. The EPRDF maintained a Politburo, Central Committee, and elaborate organizational structure, but the 2001 purge demonstrated that Meles could override these structures when challenged. Vietnam's Central Committee demonstrated the opposite in 2001: it overrode the Politburo's recommendation, establishing that the broader body's authority was real. This single event — the 2001 Central Committee vote — may be the most analytically significant data point distinguishing genuine from nominal collective authoritarianism. The question is whether this institutional precedent creates a durable constraint or whether it was merely a product of specific circumstances (a relatively weak Politburo, a strong Central Committee consensus) that may not recur.

FDI dependence as institutional constraint. Vietnam's heavy dependence on FDI — particularly from Samsung, Intel, and other multinationals with global operations and

corporate governance standards — creates an external constraint on institutional regression that purely domestic economies lack. Samsung’s decision to invest \$23.2 billion in Vietnam was premised on institutional predictability: stable property rights, enforceable contracts, manageable corruption, and political stability. If a future Vietnamese leader were to concentrate personal power in ways that threatened these conditions — as Xi has done in China — foreign investors would diversify away from Vietnam, imposing direct economic costs on the regime. FDI dependence is thus a form of external institutional anchor, analogous in function (though different in mechanism) to the EU conditionality that constrained post-Soviet reform trajectories. The constraint is imperfect — Vietnam’s FDI is not conditional on democratic governance, and investors tolerate authoritarian politics as long as commercial operations are not disrupted — but it provides a market-based check on institutional regression that domestically-oriented economies (like pre-reform China or pre-liberalization India) did not face.

The limits of the Vietnamese model. Vietnam’s Doi Moi reforms have produced impressive growth, poverty reduction, and structural transformation. But the model faces constraints that the ADRI framework identifies: limited feedback mechanisms (the CPV tolerates no genuine political opposition, the press is controlled, and civil society is constrained), moderate state capitalism transparency (military enterprises and SOEs operate with limited public accountability), and civil service quality that depends on party discipline rather than independent institutional norms. These institutional gaps create vulnerabilities that have not been tested by a severe crisis — the equivalent of Singapore’s 1985 recession, South Korea’s 1997 financial crisis, or Ethiopia’s 2005 election. How Vietnam’s institutional architecture responds to a genuine crisis — an economic downturn, a foreign policy failure, a leadership scandal — will reveal whether the collective system provides genuine resilience or merely the appearance of stability in the absence of stress.

H.11 The ADRI assessment

Vietnam's ADRI score of 0.41 reflects a mixed institutional profile: genuine collective leadership and meaningful structural transformation offset by weak feedback mechanisms, limited state capitalism transparency, and civil service quality that remains dependent on party discipline rather than independent institutions. The score places Vietnam above Ethiopia (0.27) and Rwanda (0.33) but well below Singapore (0.65) and post-democratization South Korea (0.81). The critical variable is succession institutionalization, where Vietnam scores meaningfully above zero — unlike Ethiopia, China under Xi, or Rwanda — reflecting the eight transitions and the Central Committee's demonstrated independence. Whether this institutional asset survives the To Lam era will determine whether Vietnam remains on Path D or slides toward Path E.

I C.6 China: Insurance Dismantled (Path D -> E, ADRI declining)

I.1 Deng Xiaoping's institutional engineering

China provides the insurance framework's most dramatic illustration of a fundamental theoretical proposition: authoritarian institutional constraints, no matter how carefully designed, have no independent enforcement mechanism. The story begins with one of history's most deliberate acts of institutional construction — Deng Xiaoping's post-Mao reforms — and ends with their systematic dismantlement by Xi Jinping, demonstrating that what one leader builds, another can destroy when no independent power center exists to prevent it.

The intellectual foundation was laid on August 18, 1980, when Deng Xiaoping delivered his landmark speech, "On the Reform of the System of Party and State Leadership," to an enlarged session of the Politburo. The speech was remarkable for its candor. Deng diagnosed the

pathologies of the Mao era with clinical precision: “over-concentration of power,” “patriarchal methods,” “life tenure in leading posts,” and “privileges of every description.” He identified the structural cause: “If these systems are sound, they can place restraints on the actions of bad people; if they are unsound, they may hamper the efforts of good people or indeed, in certain cases, may push them in the wrong direction.” The speech was simultaneously a critique of Mao’s personalism and a blueprint for the institutional norms that would govern China for the next three decades.

The specific institutional innovations Deng established were designed to prevent a recurrence of the catastrophic personalism of the Mao era — the Great Leap Forward (estimated 15-55 million deaths from famine), the Cultural Revolution (estimated 500,000 to 2 million deaths, millions more persecuted), and the personality cult that made both possible. The reforms included:

Constitutional term limits. The 1982 Constitution, adopted under Deng’s guidance, imposed a two-term limit on the presidency (Article 79) — a formal constraint designed to prevent the kind of indefinite rule that had characterized Mao’s tenure. The term limit was not merely symbolic: it created a structural expectation that leadership would rotate, providing a constitutional basis for succession planning.

Age-based retirement norms. An informal but strictly observed norm established that Politburo Standing Committee (PBSC) members who reached age 68 at the time of a Party Congress would retire — the so-called “seven up, eight down” (*qi shang ba xia*) rule. This norm was never codified in formal party regulations but was enforced through three successive congresses (2002, 2007, 2012), creating the expectation of predictable leadership turnover.

Collective leadership of the Politburo Standing Committee. Deng established the norm that the PBSC would govern collectively, with the General Secretary serving as first among equals rather than as an unconstrained paramount leader. Major decisions required consensus among PBSC members, each of whom oversaw a distinct policy portfolio. This

structure diluted individual authority and created institutional checks — each PBSC member had an independent power base and institutional interests that constrained the General Secretary’s freedom of action.

Separation of party and state functions. Deng promoted the principle that party leadership should be separated from state administration — that the party would set broad policy direction while the state bureaucracy would implement it with professional autonomy. This principle was imperfectly realized but created institutional space for technocratic governance.

Inner-party democracy and institutionalized consultation. Deng encouraged the development of more regularized decision-making processes within the party, including predictable schedules for Central Committee plenums, wider consultation on major policy decisions, and the institutionalization of the National People’s Congress as a (limited) deliberative body rather than a pure rubber stamp.

I.2 The reform sequence: from agricultural to industrial transformation

The economic reforms that accompanied Deng’s institutional changes followed a sequencing pattern remarkably similar to Vietnam’s — and for similar reasons: the party maintained control of the reform process by proceeding gradually, learning from each phase before advancing to the next.

Agricultural decollectivization (1978-1984). The Household Responsibility System, first implemented experimentally in Anhui and Sichuan provinces in 1978 and formally adopted nationally by 1982, dismantled the commune system and assigned land-use rights to individual households. The results were immediate and dramatic: grain output increased by 34% between 1978 and 1984 despite a reduction in cultivated area, as household-level incentives replaced collective production quotas. The agricultural surplus released approximately 200 million

workers from farming over the subsequent two decades — creating the labor force that would power China’s industrial transformation.

Township and Village Enterprises (1984-1996). The TVE phenomenon — collectively owned industrial enterprises operating in rural areas — became the engine of China’s early industrialization. TVEs grew from 1.5 million enterprises employing 28 million workers in 1978 to 20 million enterprises employing 135 million workers by 1996, accounting for approximately one-third of GDP. The TVEs operated in a unique institutional space: collectively owned (by towns and villages) rather than privately owned, they benefited from local government support while operating under harder budget constraints than SOEs. The TVE model was distinctly Chinese — it had no parallel in the Soviet or Vietnamese reform experiences — and its success demonstrated that institutional innovation within the constraints of a socialist system could produce rapid industrialization.

Special Economic Zones and FDI opening (1980-2001). Deng established four Special Economic Zones in 1980 — Shenzhen, Zhuhai, Shantou, and Xiamen — as laboratories for market-oriented policies including FDI, export processing, and market-determined prices. Shenzhen’s transformation from a fishing village of 30,000 to a metropolis of 17 million — with GDP per capita exceeding that of Hong Kong — became the most visible symbol of China’s reform success. The SEZ model was progressively expanded: 14 coastal cities were opened to FDI in 1984, the Yangtze Delta and Pearl River Delta were designated development zones in the late 1980s, and by the 1990s the entire coastal economy operated under liberalized FDI rules. China’s WTO accession in 2001, negotiated by Premier Zhu Rongji against significant internal opposition, locked in market reforms through international commitments — a strategy functionally similar to the EU conditionality that anchored reform in Central and Eastern Europe.

SOE reform and private sector emergence (1993-2012). Premier Zhu Rongji’s SOE reform program, launched in the late 1990s under the slogan “grasp the large, release the

small,” reduced the number of SOEs from approximately 300,000 to 150,000 while maintaining state control over strategic sectors (energy, telecommunications, banking, defense). The reforms produced approximately 40 million layoffs — a social cost that would have been politically impossible in a democratic system. Simultaneously, the private sector exploded: private enterprises grew from effectively zero in 1978 to generating over 60% of GDP and 80% of urban employment by the 2010s. Alibaba (founded 1999), Tencent (founded 1998), Huawei (founded 1987), and thousands of smaller firms created the dynamic private sector that drove China’s TFP growth during the reform era.

I.3 The results: growth across transitions

The institutional system Deng constructed produced extraordinary results. Under the reform era (1978-2012), China achieved the largest poverty reduction in human history: GDP per capita rose from approximately \$200 to \$10,000, and over 800 million people were lifted from extreme poverty by World Bank standards. Annual GDP growth averaged approximately 10% across three decades — a sustained growth performance without historical precedent at China’s scale.

The poverty reduction was historically unprecedented: the World Bank estimated that over 800 million people were lifted from extreme poverty (defined as living on less than \$1.90 per day at 2011 PPP) between 1978 and 2015 — accounting for approximately three-quarters of all global poverty reduction during this period. Life expectancy rose from approximately 66 years in 1978 to 77 years by 2020. Literacy rates reached near-universality. Infrastructure development was staggering: China built approximately 42,000 kilometers of high-speed rail (more than the rest of the world combined), a national expressway network exceeding 170,000 kilometers, and hundreds of new airports. The structural transformation was complete: manufacturing rose from approximately 28% of GDP in 1978 to a peak of 32% in 2006, while agriculture fell from 28% to under 8%. China became the world’s largest manufacturer, the world’s largest exporter, and the world’s second-largest economy.

Critically for the insurance framework, this growth was sustained across two orderly leadership transitions. Deng himself never held the top party position (General Secretary) during the reform era — he ruled through a combination of formal positions (Chairman of the Central Military Commission, Chairman of the Central Advisory Commission) and informal authority. His transfer of power to Jiang Zemin in 1989 (formalized at the 14th Congress in 1992) was followed by Jiang’s transfer to Hu Jintao at the 16th Congress in 2002 — each transition orderly, each accompanied by a generational turnover of the broader leadership, and each followed by continued rapid growth.

The Jiang era (1993-2003) saw several landmark institutional developments: WTO accession (2001), which locked in market reforms through international commitments and exposed Chinese firms to global competition; the acceleration of SOE reform under Premier Zhu Rongji, which eliminated tens of thousands of unprofitable state enterprises while maintaining state control over “commanding heights” sectors; the emergence of China’s private sector as a major economic force, with Alibaba, Tencent, Huawei, and Lenovo among the firms founded or transformed during this period; and the establishment of a functioning real estate market that would become the primary vehicle for household wealth accumulation. Jiang himself demonstrated institutional restraint by stepping down from his final position (chairman of the Central Military Commission) in 2004, completing the generational transfer.

The Hu-Wen era (2003-2012) saw continued rapid growth (averaging approximately 10.5% annually), massive infrastructure investment (the high-speed rail network expanded from zero to over 9,000 kilometers), and the management of the 2008 global financial crisis. China’s 4 trillion yuan (\$586 billion) stimulus package — primarily directed toward infrastructure and social housing — prevented a serious downturn, with growth never falling below 6.1% even in 2009. But the stimulus also planted the seeds of future problems: it was financed largely through local government debt and channeled through SOEs and state banks, reinforcing the state sector’s weight in the economy and creating the credit imbalances that would constrain

growth in subsequent years. The Hu era also saw growing corruption — the prosecution of Bo Xilai (Chongqing party secretary, later sentenced to life imprisonment) and Zhou Yongkang (PBSC member, convicted in 2015) revealed the scale of elite venality — and rising social inequality, with China’s Gini coefficient reaching approximately 0.49 by some estimates.

Throughout both eras, the institutional norms Deng established were respected: term limits were observed, retirement norms were followed, collective leadership was maintained, and the PBSC governed through consensus rather than individual fiat. The system’s adherents argued that China had found a “third way” — neither Western democracy nor traditional dictatorship, but institutionalized collective authoritarianism with regular leadership rotation. The subsequent Xi era would demonstrate that this system’s durability was contingent on elite consensus to maintain it — a consensus that evaporated the moment a leader determined to break it emerged.

The system’s ADRI during this period was approximately 0.43 — moderate, reflecting genuine structural transformation ($SET = 0.84$) and functional bureaucratic capacity, but constrained by the absence of real feedback mechanisms ($FMQ = 0.07$) and limited state capitalism transparency. The institutional architecture was real but fragile: it depended on elite consensus to maintain norms that had no independent enforcement mechanism.

I.4 Xi Jinping’s dismantlement

Xi Jinping’s systematic destruction of Deng’s institutional architecture, beginning upon his accession to the General Secretary position in November 2012, constitutes the framework’s most important empirical lesson. Within five years, Xi dismantled every major constraint that Deng had established:

Term limits abolished. In March 2018, the National People’s Congress voted 2,958 to 2 (with 3 abstentions and 1 invalid ballot) to remove the two-term presidential limit from the Constitution. The near-unanimity of the vote — in a body of nearly 3,000 delegates —

demonstrated not consensus but the absence of any institutional mechanism through which dissent could be expressed. The removal of term limits made Xi eligible for indefinite rule, formally destroying the succession mechanism that Deng had designed.

Age-based retirement norms destroyed. At the 20th Party Congress in October 2022, Xi retained Wang Yi (born 1953, age 69) on the Politburo, violating the “seven up, eight down” norm. More importantly, Xi himself (born 1953) remained as General Secretary, beginning an unprecedented third term at age 69 — the norm would have required his retirement. The norm’s violation was complete and irreversible: once broken by the paramount leader himself, it could not be restored without a fundamental change in power dynamics.

Collective leadership replaced by personal authority. Xi systematically concentrated authority in his own hands, chairing an unprecedented number of “leading small groups” and commissions that cut across the PBSC members’ policy portfolios. The PBSC’s composition at the 20th Congress was revealing: all seven members were Xi loyalists with no independent power base, replacing the factional balance that had characterized previous compositions. Li Qiang became Premier despite having no prior central government experience — a signal that loyalty to Xi outweighed technocratic competence. The contrast with the Hu era, when PBSC members represented distinct factions (the Communist Youth League, the Shanghai clique, the princelings) and governed their portfolios with relative autonomy, was stark.

Personnel control through institutional capture. Xi’s most consequential institutional action was capturing the personnel system — the Organization Department, which controls appointments throughout the party-state hierarchy. By placing loyalists in charge of cadre evaluation and promotion, Xi ensured that advancement depended on loyalty to him personally rather than on technocratic competence or factional balance. The 20th Party Congress Politburo, revealed in October 2022, consisted entirely of Xi allies: Li Qiang (Premier, despite no central government experience), Zhao Leji, Wang Huning, Cai Qi, Ding Xuexiang, and Li Xi. The factional diversity that had characterized previous Politburos — with representatives

of the Communist Youth League faction, the Shanghai clique, and other networks — was eliminated. This personnel monopoly means that Xi controls not only policy but the selection of future leaders, removing the distributed authority that Deng’s system was designed to create.

“Xi Jinping Thought” enshrined in constitutions. “Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era” was written into the Party Constitution at the 19th Congress in 2017 and into the national Constitution in 2018. This elevated Xi’s personal ideology to a status only Mao had achieved *during his lifetime* — Deng Xiaoping Theory was added to the Constitution only after Deng’s death. The enshrinement of living ideology creates a self-reinforcing mechanism: challenging any specific policy becomes tantamount to challenging the party’s constitutional foundation.

Anti-corruption as political weapon. Xi’s anti-corruption campaign, launched shortly after his accession, has disciplined an estimated 6.27 million party members. The campaign included the prosecution of former PBSC member Zhou Yongkang (sentenced to life imprisonment in 2015) — the first sitting or former PBSC member to be prosecuted since the Gang of Four. The campaign served a genuine anti-corruption function — corruption under Hu had reached levels that threatened social stability — but also served a political function that was inseparable from its disciplinary purpose: targets were disproportionately concentrated among factional rivals, and the campaign’s selective application created an atmosphere of fear that suppressed dissent even among those with no corruption to fear. In a system with no independent judiciary, the distinction between legitimate anti-corruption enforcement and political purge cannot be drawn by any institutional actor.

I.5 The structural lesson

The lesson is not that Deng’s institutions were poorly designed. They were, within the constraints of a single-party system, remarkably sophisticated. The lesson is structural:

authoritarian institutional constraints have no independent enforcement mechanism. In a democracy, term limits are enforced by courts with institutional independence, legislatures with their own power base, a free press that can expose violations, and an electorate that can punish them. China's norms had none of these enforcers. When Xi chose to break the norms, nothing stopped him — not the Central Committee (which had never demonstrated Vietnam-style independence from the Politburo), not the NPC (which voted 2,958 to 2 to abolish term limits), not the press (which is controlled by the party), and not the public (which has no institutional mechanism for political expression).

The comparison with Vietnam's 2001 Central Committee vote is instructive. In Vietnam, the Central Committee overrode the Politburo's recommendation for General Secretary — demonstrating that the broader body's authority had practical force. In China, the Central Committee has never challenged the PBSC's decisions on leadership. The difference is not constitutional — both party charters formally subordinate the Politburo to the Central Committee. The difference is institutional: Vietnam's Central Committee developed a norm of independent judgment through repeated exercise, while China's Central Committee never developed such a norm. When Xi moved to abolish term limits, the NPC voted 2,958 to 2 — a vote that demonstrated not consensus but the absence of any institutional culture of dissent.

Deng could build constraints; he could not build constraints on constraints. The problem is logically irreducible within authoritarianism: rules that bind future leaders require enforcers independent of those leaders, but independent power centers are precisely what authoritarianism prohibits. This is not a flaw in Deng's design — it is a structural feature of non-democratic governance. Only independent power centers — courts, legislatures, free media, organized civil society, opposition parties — can enforce rules on leaders who wish to break them. And these independent power centers are the defining features of the democratic systems that authoritarian developmental states reject.

I.6 The technology sector crackdown: institutions and innovation

Xi's regulatory assault on China's technology sector, beginning in late 2020, provides a specific illustration of how institutional regression damages economic dynamism. The sequence was dramatic:

In November 2020, regulators forced the cancellation of Ant Group's initial public offering — which would have been the world's largest IPO at an estimated \$37 billion — two days before its scheduled listing. Jack Ma, Alibaba's founder, had publicly criticized financial regulators at a Shanghai forum in October; the IPO cancellation was widely interpreted as retaliation. In April 2021, Alibaba was fined \$2.8 billion for antitrust violations. In July 2021, regulators effectively destroyed the private tutoring industry — a \$100 billion sector employing millions — by banning for-profit tutoring in core school subjects. Didi Chuxing, China's dominant ride-hailing company, was subjected to a cybersecurity review days after its June 2021 IPO on the New York Stock Exchange, with its app removed from Chinese app stores. Tencent was fined and subjected to restrictions on gaming (its primary revenue source). The cumulative market capitalization destruction in Chinese technology stocks exceeded \$2 trillion between February 2021 and October 2022.

The crackdowns served multiple purposes — genuine regulatory concerns (Ant Group's systemic financial risk, data privacy, competitive practices), social engineering (the tutoring ban was framed as reducing educational inequality), and political signaling (demonstrating that no private actor, however wealthy, was beyond the party's reach). But the economic consequences were severe and unambiguous: private investment collapsed, entrepreneurial confidence evaporated, and the venture capital ecosystem that had produced companies like ByteDance, Pinduoduo, and Meituan contracted sharply. Chinese venture capital investment fell from approximately \$131 billion in 2021 to under \$50 billion in 2023. The message received by China's entrepreneurs was clear: the party's priorities — political control, social stability, ideological conformity — took precedence over economic dynamism.

The technology crackdown illustrates the framework’s core mechanism in real time: institutional regression (the concentration of authority in Xi’s hands, the elimination of the technocratic autonomy that characterized the Hu era) translates into economic deceleration through specific, traceable channels. When political authority overrides commercial logic, capital flees to jurisdictions where commercial logic prevails. When ideological conformity becomes more important than innovation, talent emigrates or withdraws into risk-averse strategies. When no institutional check can prevent a single leader’s preference from becoming policy, the entire economy becomes dependent on that leader’s judgment — and no individual, however capable, can replicate the distributed decision-making that a market economy requires.

I.7 Economic consequences: the TFP collapse

China’s economic trajectory under Xi confirms the framework’s prediction that institutional regression produces developmental deceleration. Official GDP growth has decelerated from approximately 10% in the pre-Xi era to an official average of roughly 6.1% between 2013 and 2024. But the official figures are increasingly questioned. The Rhodium Group, an independent research firm, estimated China’s 2024 GDP growth at 2.4-2.8% — less than half the official figure. Capital Economics, Leland Miller’s China Beige Book, and other independent analysts have published similarly skeptical estimates.

The most telling indicator is total factor productivity (TFP) growth — the measure of how efficiently an economy combines labor and capital to produce output, and the best proxy for the quality of economic decision-making. TFP growth collapsed from approximately 3.5% annually in the 2000s to roughly 0.7% in the 2010s. This is not merely a slowdown associated with China reaching middle-income status — it is a collapse in the efficiency of resource allocation that coincides precisely with Xi’s concentration of authority and the suppression of market-oriented reform.

The mechanisms are identifiable. Xi's ideological turn toward state control has redirected credit from productive private firms to SOEs and politically favored sectors. The technology sector — China's most dynamic source of TFP growth — was subjected to regulatory crackdowns beginning in late 2020 (the cancellation of Ant Group's IPO, antitrust actions against Alibaba, Tencent, and Didi, the destruction of the private tutoring industry). Entrepreneurial confidence collapsed: private investment growth turned negative for the first time in recorded history. Real estate, which had served as both a growth engine and a household savings vehicle, entered a protracted crisis as developers (Evergrande, Country Garden, and dozens of others) defaulted on debts totaling hundreds of billions of dollars. Youth unemployment spiked to officially acknowledged levels above 20% before the government stopped publishing the statistic.

The real estate crisis compounds the TFP collapse. China's property sector, which at its peak accounted for approximately 29% of GDP (including construction, real estate services, and related industries), entered a protracted downturn beginning in 2021. Evergrande, once the world's most indebted property developer with over \$300 billion in liabilities, defaulted on its dollar bonds in December 2021. Country Garden, China's largest private developer by sales, defaulted in October 2023. Dozens of smaller developers followed. The crisis destroyed an estimated \$18 trillion in household wealth (property being the primary savings vehicle for Chinese families), depressed consumer confidence, and eliminated a major source of local government revenue (land sales typically accounted for 30-50% of local government income).

The demographic dimension adds a structural headwind that no institutional configuration can fully offset. China's working-age population peaked in 2015 and is projected to decline by approximately 100 million by 2035. The total fertility rate fell to approximately 1.0 in 2023 — far below the 2.1 replacement level and below even Japan's lowest recorded rate. The one-child policy (1980-2015), while not the sole cause of fertility decline, accelerated demographic trends that now impose a structural ceiling on growth. An aging population

requires more resources for healthcare and pensions while contributing less to production — a fiscal challenge that compounds the institutional challenges Xi’s concentration of authority has created.

Whether China’s deep structural transformation — the ADRI framework scores China’s SET at 0.84, reflecting the genuine transformation of an agrarian economy into the world’s manufacturing superpower — sustains growth despite Xi’s institutional destruction is among the most consequential open questions in global political economy. The South Korean precedent suggests that sufficiently deep transformation can survive bad governance: Samsung and Hyundai continued producing regardless of who occupied the Blue House. China’s Huawei, BYD, CATL, and thousands of other globally competitive firms have their own institutional momentum. But China’s current trajectory differs from South Korea’s in a crucial respect: Xi is not merely a bad leader governing over a good system — he is actively redirecting the system’s resources away from market efficiency and toward political control. The South Korean parallel would be if Chun Doo-hwan had dismantled the EPB, nationalized the chaebols, and imposed ideological tests on engineers — none of which happened because Chun’s authoritarian interests were compatible with economic technocracy, whereas Xi’s are increasingly not.

I.8 The geopolitical dimension: external constraints on institutional regression

Xi’s institutional regression has not occurred in isolation but in a geopolitical context that creates external feedback mechanisms — imperfect, but real — that the domestic institutional framework no longer provides. The U.S.-China technology competition (export controls on advanced semiconductors, restrictions on Chinese investment in sensitive sectors, the CHIPS Act directing semiconductor manufacturing to allied countries), the realignment of global supply chains away from China (“de-risking”), and the deterioration of China’s relations

with Western democracies have imposed economic costs that function as a form of external feedback on Xi's governance.

Foreign direct investment into China turned negative in the third quarter of 2023 for the first time since records began in 1998 — a signal that multinational firms were divesting from China faster than new investments were arriving. The technology sector crackdowns, the unpredictable regulatory environment, the COVID-19 lockdowns (maintained long after most countries had opened), and the escalating geopolitical tensions combined to erode the institutional predictability that had attracted foreign capital. Apple, the world's most valuable company, began diversifying its supply chain from China to India and Vietnam. Samsung closed its last Chinese smartphone factory in 2019 and shifted production to Vietnam.

These external pressures cannot substitute for domestic institutional constraints — no amount of foreign investor concern will change Xi's term of office or restore collective leadership. But they impose costs that may, over time, create incentives for course correction — or, alternatively, reinforce Xi's turn toward economic nationalism and self-sufficiency. The outcome depends on whether China's leaders interpret external pressure as evidence that reform is needed or as evidence that China must reduce dependence on the global economy that generates the pressure. Xi's apparent preference for the latter interpretation — embodied in the “dual circulation” strategy that prioritizes domestic consumption over export dependence — suggests that external feedback mechanisms are unlikely to reverse the institutional regression.

I.9 The ADRI trajectory

China's ADRI has declined from approximately 0.43 during the Hu era to 0.42 or below under Xi — a modest numerical decline that understates the qualitative institutional regression. The succession institutionalization component, which had been one of China's genuine institutional assets, has collapsed to near zero: there is no visible succession mechanism, no designated successor, and no institutional process independent of Xi's personal authority. The trajectory

is from Path D (collective authoritarian development) to Path E (personalist authoritarianism) — the same trajectory the framework identifies for Ethiopia under Abiy and predicts for Rwanda.

C.7 Botswana: The Democratic Counterfactual (Path A, ADRI = 0.67)

J.1 The Tswana inheritance: pre-colonial institutions as developmental asset

Botswana represents Path A working as Acemoglu and Robinson’s *Why Nations Fail* [2012] predicts — inclusive institutions producing sustained development — but with complications that enrich the theoretical framework. The case is analytically essential because it demolishes the claim, advanced by proponents of developmental authoritarianism, that Africa faces a forced choice between democracy and development. Botswana achieved the world’s highest sustained growth rate for three decades — approximately 9% annually from independence in 1966 through the mid-1990s — under democratic governance, rising from GDP per capita of approximately \$70 at independence (with twelve kilometers of paved road and 22 university graduates in the entire country) to roughly \$7,500 by 2024.

The starting point for understanding Botswana’s trajectory is the pre-colonial institutional inheritance — specifically, the Tswana *kgotla* system, which provided a form of accountable governance that European colonialism elsewhere in Africa systematically destroyed. The *kgotla* was a public assembly at which the chief (*kgosi*) was required to consult with his subjects on matters of community concern. The system operated at multiple levels: ward *kgotla* (for local disputes and decisions), tribal *kgotla* (for broader policy), and the paramount *kgotla* (for inter-tribal matters). The chief’s authority was real but constrained by a fundamental structural feature: subjects who were dissatisfied with a chief’s governance could relocate

to a rival polity — a form of “exit” that functioned as an accountability mechanism in the absence of formal electoral institutions.

The Tswana proverb “*Kgosi ke kgosi ka morafe*” — “A chief is a chief by the grace of his tribe” — captures the normative framework: authority was conditional on performance and consultation. Chiefs who governed despotically faced not revolution but departure — their subjects would move to rival polities, depleting the chief’s tax base, military manpower, and political legitimacy. This exit option created competitive pressures among Tswana polities that incentivized relatively inclusive governance — a dynamic remarkably similar to the Tiebout model of jurisdictional competition in public economics, but operating in a pre-modern African context.

The *kgotla* system’s contemporary relevance extends beyond historical inheritance. The institution was formally incorporated into Botswana’s post-independence governance structure: village and district *kgotla* continue to operate as fora for community consultation, dispute resolution, and policy deliberation. When the government introduces new policies — from HIV prevention programs to land use changes — it frequently conducts *kgotla* consultations to explain the policy, hear community concerns, and build consensus. This institutional continuity between pre-colonial governance and contemporary democratic practice is rare in post-colonial Africa and provides a social infrastructure for democratic participation that purely formal electoral institutions lack. The *kgotla* does not substitute for democratic elections, but it complements them by providing a mechanism for ongoing consultation between government and citizens — a feedback channel that operates between elections and reaches communities that formal political parties may not.

British colonialism in Bechuanaland (1885-1966) preserved this institutional inheritance through what might be called constructive neglect. The Bechuanaland Protectorate was established primarily to prevent Boer expansion northward from the Transvaal, not to exploit the territory’s limited resources (diamonds had not yet been discovered). The British

administered the protectorate with minimal investment — the capital was located outside the territory, in Mafeking, South Africa, until 1965 — and governed through existing Tswana chiefs rather than imposing a new administrative structure. This indirect rule, while hardly benign, had the unintended consequence of preserving pre-colonial governance institutions that direct colonial administration would have dismantled. The *kgotla* system survived the colonial period largely intact, providing a foundation for post-independence democratic governance that few other African countries possessed.

The contrast with Belgian colonialism in Rwanda — which hardened fluid social categories into rigid ethnic identities, dismantled indigenous governance, and created the institutional pathologies that culminated in genocide — is stark. Botswana inherited functional governance institutions; Rwanda inherited institutional destruction. This divergence in colonial experience is a critical but undertheorized determinant of post-independence trajectories.

J.2 Seretse Khama's founding decisions

Botswana's developmental trajectory was shaped decisively by the founding decisions of Seretse Khama, who served as the country's first president from independence in 1966 until his death in 1980. Three decisions were particularly consequential:

Nationalizing mineral rights before diamonds were discovered. In 1967, one year after independence, Khama's government passed the Mines and Minerals Act, which vested all mineral rights in the national government rather than in the tribal authorities that had historically controlled them. This decision was made *before* the discovery of commercially viable diamond deposits at Orapa in 1967 — meaning it was a principled institutional choice, not a post-hoc seizure of existing revenue streams. When diamonds were subsequently discovered in enormous quantities (Botswana's diamond reserves proved to be among the world's largest), the revenue accrued to the national government rather than to specific tribal authorities, enabling national development programs rather than localized patronage.

The contrast with Nigeria — where oil revenue accrues to the federal government but is distributed through patronage networks that fuel corruption and conflict — illustrates how the institutional framework for resource management, established before the resource is discovered, determines whether resource wealth becomes a “blessing” or a “curse.” Botswana’s decision was path-dependent: once mineral rights were nationalized and the revenue management framework established, subsequent governments inherited institutional constraints on resource mismanagement.

Retaining colonial civil servants. Unlike many newly independent African states, which purged colonial administrators and replaced them with political loyalists (often with catastrophic consequences for state capacity), Khama retained experienced British civil servants in key positions during the transition period. This pragmatic decision — similar to Lee Kuan Yew’s retention of the British administrative infrastructure in Singapore — ensured continuity of state capacity during the vulnerable early years of independence. Experienced administrators trained new Botswana officials, creating a transfer of institutional knowledge rather than an abrupt rupture.

Investing in human capital despite constraints. At independence, Botswana had only 22 university graduates in the entire country and no institution of higher education. The government’s response was systematic: the University of Botswana was established in 1982 (having evolved from the University of Botswana, Lesotho and Swaziland), primary education was made universal by the 1980s, and secondary education enrollment expanded dramatically through the construction of Community Junior Secondary Schools across the country. Education spending consistently accounted for approximately 20-25% of government expenditure — among the highest ratios in the world. By 2020, adult literacy exceeded 85%, tertiary enrollment had reached approximately 25% of the relevant age cohort, and Botswana had produced a professional class capable of staffing the civil service, the private sector, and the diamond industry.

The human capital investment was complemented by a healthcare infrastructure that, while challenged by the HIV/AIDS epidemic, demonstrated institutional capacity for crisis response. Botswana was among the first African countries to provide free antiretroviral therapy (ART) through its Masa (“New Dawn”) program, launched in 2002 with support from the Bill and Melinda Gates Foundation and the Merck pharmaceutical company. The program was remarkable for its institutional ambition: rather than relying on NGOs or international organizations to deliver treatment, the government built the program into the public health system, training nurses and health workers to administer ART and establishing testing and treatment facilities across the country. By 2023, approximately 95% of people living with HIV in Botswana who knew their status were receiving ART — one of the highest treatment coverage rates in the world. The HIV response demonstrated that Botswana’s institutional capacity extended beyond diamond management: the government could identify a crisis, mobilize resources (both domestic and international), design a delivery system, and sustain it over decades. This is institutional capacity in the most fundamental sense — the ability to translate policy decisions into outcomes at scale.

Establishing an anti-corruption ethos. Khama personally exemplified and institutionally reinforced norms of public probity that distinguished Botswana from the patronage-based governance that characterized much of post-colonial Africa. The Directorate on Corruption and Economic Crime (DCEC), established in 1994, formalized anti-corruption enforcement — though the institutional culture of relative honesty predated the formal institution by decades. Botswana consistently ranks among the least corrupt countries in Africa on Transparency International’s Corruption Perceptions Index, reflecting an institutional culture established during the founding period and maintained across successive leaderships.

J.3 The political economy of diamond governance

The discovery of diamonds at Orapa in 1967 — just one year after independence — presented Botswana with a challenge that has destroyed governance in many resource-rich developing

countries. The “resource curse” literature [Auty, 1993, Sachs and Warner, 1995, Ross, 2001] documents how mineral wealth typically produces Dutch disease (currency appreciation that destroys non-resource exports), patronage politics (resource rents funding political clientelism), institutional erosion (rent-seeking replacing productive investment), and conflict (armed groups competing for control of resource revenues). Botswana avoided all four pathologies — not through luck but through institutional choices made before and immediately after diamonds were discovered.

The sequence matters analytically. The Mines and Minerals Act of 1967 — nationalizing mineral rights — preceded the discovery of commercially significant deposits. The Debswana JV structure and the fiscal management framework were established before diamond revenues became the dominant source of government income. The anti-corruption culture was inherited from the pre-colonial *kgotla* tradition and reinforced during Khama’s presidency. Each of these institutional features was established before the resource wealth created incentives for rent-seeking — a sequencing advantage that countries discovering resources after independence (without pre-existing institutional frameworks) typically lack.

J.4 Diamond management: the Debswana model

The institutional framework for diamond management is the centerpiece of Botswana’s developmental success. The Debswana Diamond Company, established as a 50-50 joint venture between the Government of Botswana and De Beers in 1969, provided a governance structure that balanced state revenue extraction with professional mining management. The government received diamond revenue through multiple channels: direct equity participation (50% of Debswana profits), mining royalties, corporate taxes, and dividends from its equity stake in De Beers itself (the government acquired a 15% stake in De Beers in 2011).

The Debswana structure was itself periodically renegotiated to increase Botswana’s share of value. In 2011, the government secured a 15% equity stake in De Beers’ parent company

(then Anglo American's diamond subsidiary), giving Botswana a direct ownership interest in the global diamond distribution network. In 2013, the Diamond Trading Company Botswana was established, moving a significant portion of diamond sorting and valuation from London to Gaborone — creating higher-value domestic employment and positioning Botswana as a diamond trading hub rather than merely a mining site. These renegotiations demonstrated institutional capacity for value maximization — the government could negotiate favorable terms with a sophisticated multinational partner because it possessed both the geological leverage (De Beers needed Botswana's mines) and the institutional credibility (a stable, non-corrupt partner that honored contracts).

The revenue management framework channeled diamond income toward development investment rather than consumption. The Sustainable Budget Index (SBI), established as a fiscal rule, required that mineral revenues be used for investment rather than recurrent expenditure — ensuring that depleting natural capital was converted into physical, human, and financial capital rather than consumed. The Pula Fund, Botswana's sovereign wealth fund, accumulated reserves from diamond revenue for stabilization purposes and intergenerational savings — providing a financial buffer against diamond price volatility and a savings mechanism for when diamond deposits are eventually exhausted.

Total diamond revenue since independence has exceeded \$50 billion — an extraordinary sum for a country of 2.7 million people. That this revenue was largely channeled into development investment (roads, schools, health facilities, water infrastructure) rather than stolen or wasted is attributable to the institutional framework: the Debswana JV structure, the SBI fiscal rule, the Pula Fund, and the anti-corruption culture established by Khama. No single mechanism was sufficient; the combination of institutional constraints created redundancy that survived individual points of failure.

The achievements are real: Botswana was reclassified from a Least Developed Country to an Upper Middle Income Country. Life expectancy, which collapsed during the HIV/AIDS

crisis (Botswana was among the hardest-hit countries, with prevalence exceeding 25%), has recovered significantly following the government's aggressive treatment program — one of the first in Africa to provide free antiretroviral therapy. Education access expanded dramatically. Infrastructure development — while still limited by the country's vast geography and small population — far exceeded most comparable African countries.

J.5 Democratic governance: the institutional record

Botswana's democratic credentials are not merely formal. Since independence, the country has held regular multiparty elections — every five years without interruption — with universal adult suffrage, an independent electoral commission (the Independent Electoral Commission, established by the 1997 Electoral Act), a free press (by African standards), and an independent judiciary that has ruled against the government in significant cases. The BDP won every election from 1966 to 2019, but with vote shares that fluctuated meaningfully: from a high of 77% in 1969 to a low of 47% in 2014, when the BDP nearly lost its majority. Opposition parties — the Botswana National Front (BNF), the Botswana Congress Party (BCP), and later the Umbrella for Democratic Change (UDC) — contested elections freely and won seats in parliament throughout the democratic period.

The leadership succession record is instructive. Seretse Khama served as president from 1966 until his death in 1980. Vice President Quett Masire succeeded him automatically under constitutional provisions — an orderly transition. Masire served until 1998, when he voluntarily retired, and was succeeded by Vice President Festus Mogae. Mogae served two terms and was succeeded by Vice President Ian Khama (Seretse Khama's son) in 2008. Khama served until 2018 and was succeeded by Vice President Mokgweetsi Masisi. Each succession was constitutional, orderly, and uncontested — a record that no other non-island African state can match.

The BDP's dominance resembled Singapore's PAP in its longevity but differed in its insti-

tutional basis: whereas the PAP’s dominance rests on institutional advantages (the cadre system, GRC system, defamation lawsuits against opposition), the BDP’s dominance rested primarily on performance legitimacy and the first-mover advantage of governing during the diamond-funded development boom. As performance legitimacy eroded — unemployment rose, inequality persisted, diversification stalled — the BDP’s electoral position weakened progressively, culminating in the 2024 rout.

J.6 The 2024 transfer of power: democracy’s ultimate stress test

The October 2024 general election provided Botswana’s most significant institutional stress test — and confirmed the insurance framework’s predictions for Path A regimes. The election results were dramatic: the opposition Umbrella for Democratic Change (UDC), led by Duma Boko, won 36 of 61 parliamentary seats, ending the Botswana Democratic Party’s (BDP) 58-year unbroken hold on power. The BDP, which had governed since independence in 1966, collapsed to just 4 seats — a rout unprecedented in the party’s history. President Mokgweetsi Masisi, who had led the BDP since 2018, conceded defeat and facilitated an orderly transfer of power.

The significance for the insurance framework cannot be overstated. This was a party transfer of power — not merely a leadership succession within the same party, but a complete replacement of the governing party by the opposition. No other case in this analysis has achieved this outcome. Singapore has never experienced a change of ruling party. South Korea’s democratic transition came through mass protest, not electoral defeat of the ruling party in a free election. Ethiopia’s EPRDF was dissolved by its own successor, not defeated at the ballot box. Rwanda’s RPF wins elections with 98%+ margins. China and Vietnam are single-party states. Botswana’s 2024 election demonstrated that democratic institutions, when genuinely functional, provide the most robust form of succession insurance: the peaceful replacement of an entire governing party without institutional disruption, economic crisis, or political violence.

The BDP's collapse to 4 seats reflected accumulated grievances — high unemployment (particularly among youth), rising inequality, perceptions of corruption, and frustration with the pace of economic diversification away from diamond dependence. These are precisely the kinds of policy failures that democratic feedback mechanisms are designed to address: voters punished the incumbent for poor performance, and the institutional framework channeled their dissatisfaction into an orderly transfer of power rather than into protest, repression, or crisis.

J.7 The diversification challenge: beyond diamonds

Botswana's most significant developmental challenge — and the one that most directly tests the insurance framework's predictions — is economic diversification. Despite decades of diamond-funded growth, the economy remains heavily dependent on a single extractive resource. Diamonds account for approximately 80% of export revenue, approximately 30-40% of government revenue, and approximately 20% of GDP. The cattle sector, historically important, has stagnated. Tourism (primarily game-viewing in the Okavango Delta and Kalahari) has grown but remains small relative to diamonds. Financial services have expanded, with Botswana hosting regional operations of several international banks and insurance companies, but Gaborone has not become a financial center on the scale of Johannesburg or Nairobi.

The Botswana Innovation Hub, established in 2008, was designed to foster a knowledge-based economy — the institutional equivalent of Singapore's one-north development or South Korea's Pangyo Techno Valley. The results have been modest. Botswana lacks the critical mass of educated workers, the venture capital ecosystem, and the proximity to major markets that innovation hubs require. The Diamond Trading Company Botswana (DTCB), established in 2013 as part of Botswana's renegotiation with De Beers, moved a portion of diamond sorting and valuation from London to Gaborone — creating higher-value jobs in the diamond value chain. But downstream diamond activities (cutting, polishing, jewelry manufacturing)

have not scaled as hoped, because Botswana's labor costs are higher than Indian competitors (who dominate global diamond cutting) and its infrastructure is less developed.

The Botswana International Financial Services Centre (BIFSC), established to attract financial services and holding companies, has had limited success. Botswana's small domestic market, distance from major economic centers, and limited pool of financial professionals constrain the sector's growth. The comparison with Singapore's financial center development — which required decades of deliberate institutional construction, regulatory innovation, and talent recruitment — reveals the scale of the challenge: Singapore invested heavily in specific institutional infrastructure (the Asian Dollar Market, SIAC, MAS's regulatory framework) that Botswana has not replicated.

The diversification challenge is not merely economic but institutional. The ADRI framework measures structural economic transformation as a component of developmental resilience. Botswana's moderate SET score (0.44) reflects the reality that, despite impressive GDP growth, the economy has not undergone the kind of deep structural transformation — from agriculture to manufacturing, from domestic to export-oriented, with indigenous firms capable of competing globally — that characterized the East Asian developmental states. Diamond mining is capital-intensive, employing relatively few workers relative to its GDP contribution. The economy's growth has been driven by resource extraction and government spending rather than by the kind of broad-based productive transformation that creates autonomous economic momentum.

The 2024 election result reflects, in part, voter frustration with this diversification failure. High unemployment — particularly among youth, with rates exceeding 30% — coexists with diamond wealth, creating visible inequality and political discontent. The new UDC government faces the same structural challenge that the BDP failed to solve: how to create productive employment for a young, urbanizing population in an economy whose primary revenue source creates few direct jobs. The institutional framework provides the political

mechanism for addressing this challenge — voters can replace governments that fail — but does not guarantee that any government can solve the underlying economic problem.

J.8 Limitations and boundary conditions

Botswana's case, while powerful, has limitations that constrain its utility as a generalizable model:

Diamond dependence. Diamonds constitute approximately 80% of Botswana's export revenue and a substantial share of government revenue. Economic diversification has been limited — tourism, cattle, and financial services have grown but have not replaced diamonds as the economic foundation. As diamond reserves are gradually depleted (though significant reserves remain), Botswana faces a structural challenge that its institutional framework has not yet addressed.

Small population. With 2.7 million people, Botswana's governance challenges are fundamentally different from those facing countries of 100 million (Ethiopia), 50 million (South Korea), or even 14 million (Rwanda). Small population facilitates the kind of personalized, consultative governance that the *kgotla* tradition embodies but that may not scale.

Relative ethnic homogeneity. While Botswana has ethnic diversity (eight major Tswana groups plus non-Tswana minorities including the San, Kalanga, and others), the degree of ethnic fragmentation is substantially lower than in Ethiopia, Rwanda, or most other African countries. The dominance of Tswana culture and language creates a national cohesion that countries with deeper ethnic divisions cannot replicate.

Inequality. Despite sustained growth, Botswana has one of the world's highest Gini coefficients — approximately 0.53 — reflecting persistent inequality that democratic governance has not resolved. The diamond economy generates high-value jobs in mining, finance, and government but relatively few opportunities in labor-intensive sectors that could employ the unskilled majority. The result is a dual economy: a prosperous formal sector concen-

trated in Gaborone and the mining towns coexists with widespread rural poverty and urban unemployment. This inequality pattern — growth without broad-based employment creation — resembles the challenge facing many resource-dependent economies and distinguishes Botswana from the manufacturing-led developmental states (South Korea, Vietnam, China) where industrialization created millions of formal-sector jobs.

The HIV/AIDS crisis. The HIV epidemic, which at its peak infected approximately 25-28% of the adult population, devastated Botswana's working-age population and imposed an enormous burden on the health system. Life expectancy, which had risen to approximately 65 years by the early 1990s, collapsed to approximately 49 years by 2002. The epidemic's demographic impact was profound: it reduced the labor force, increased dependency ratios, orphaned hundreds of thousands of children, and consumed health resources that might otherwise have funded development programs. The government's response — the Masa ART program, one of the first comprehensive public treatment programs in Africa — demonstrated institutional capacity but also highlighted the limits of institutional quality in the face of epidemiological catastrophe. By 2023, new HIV infections had declined dramatically and life expectancy had recovered to approximately 62 years, but the epidemic's multi-decade impact on human capital and economic productivity will persist for a generation.

The Ian Khama complication. Botswana's democratic record is not unblemished. Ian Khama, son of founding president Seretse Khama, served as president from 2008 to 2018. His presidency was characterized by a more authoritarian style than his predecessors: he clashed with the media, was accused of using the Directorate of Intelligence and Security Services (DISS) for political surveillance, and his relationship with successor Mokgweetsi Masisi deteriorated into open hostility after Masisi assumed office. Khama eventually left the BDP entirely and endorsed the opposition in 2019. The episode demonstrated both the risks and the resilience of Botswana's democratic institutions: the risks, because a leader with authoritarian tendencies could use security agencies for political purposes even within a

democratic framework; and the resilience, because the institutional framework ultimately constrained Khama — he left office on schedule, the successor pursued independent policies despite Khama’s opposition, and the voters rendered their judgment on the BDP in 2024. The Khama episode confirms the insurance framework’s core insight: democratic institutions provide constraints that survive individual leaders, even when those leaders attempt to weaken them.

These limitations constrain but do not negate Botswana’s analytical significance. The relevant question for most developing countries is not “why can’t you be Botswana?” but “given your starting conditions, which path offers the best trade-off between speed, sustainability, and human cost?” Botswana demonstrates that Path A — democratic development — is viable in Africa, even if the specific conditions that enabled it (pre-colonial institutional inheritance, constructive colonial neglect, diamond wealth, small population) cannot be replicated everywhere.

J.9 The ADRI assessment

Botswana’s ADRI of 0.67 — the highest in this analysis — reflects its institutional strengths across multiple dimensions: high succession institutionalization ($SI = 0.69$, reflecting regular democratic transfers and now a party transfer of power), high feedback mechanism quality ($FMQ = 0.67$, reflecting genuine multiparty democracy with real competition), high civil service independence ($CSI = 0.71$), but moderate structural economic transformation ($SET = 0.44$, reflecting diamond dependence and limited manufacturing). The ADRI profile demonstrates that institutional quality can compensate for limited structural transformation — the inverse of South Korea’s pattern, where deep transformation compensated for institutional deficit. Botswana’s institutional insurance protects against leadership failure; South Korea’s structural transformation provided insurance against political crisis. Both paths work, but through different mechanisms.

J.10 D.3 Rwanda Comparative Counterfactuals

The Rwanda prediction ($ADRI = 0.33$, $P(\text{irregular exit}) = 40\%$) can be bracketed by comparative counterfactuals.

Burundi — sharing nearly identical geography, colonial history, ethnic composition, and pre-conflict income — provides the closest comparison. The key difference was mode of conflict termination: Rwanda's RPF achieved decisive military victory; Burundi's civil war ended through the 2000 Arusha Accords. The divergence is large: Rwanda averaged 7.4% GDP growth (2000–2022) versus Burundi's 2.4%.

Mozambique illustrates the fragility of revolutionary-movement governance without institutional constraints: FRELIMO achieved $\sim 8\%$ growth for two decades before the tuna bonds scandal revealed \$2 billion in secret borrowing and the country defaulted.

Costa Rica 1948 suggests that decisive military victory need not lead to permanent authoritarianism: Figueres dissolved the army and founded a stable democracy (GDP per capita now \$13,000).

These comparisons suggest that negotiated power-sharing would likely have produced worse economic outcomes, that immediate democratization was probably not feasible, and that the case for continued authoritarianism weakens after the emergency period stabilized (~ 2003).

K Boundary Conditions and Stress Tests

The framework was built from a set of core cases. A useful framework must be tested against cases it was *not* designed to explain. The seven cases below were selected because each challenges a specific prediction — if the framework cannot account for them, it needs revision.

K.1 E.1 Taiwan: Alternative Path B Architecture

Taiwan achieved Path B outcomes through a fundamentally different architecture than Singapore: radical KMT land reform (1949-1953) that converted landlords into industrial capitalists, SME-led “guerrilla capitalism” [Lam, 1992] rather than state-directed conglomerates, and state-seeded technology upgrading through ITRI and TSMC. The Kaohsiung Export Processing Zone (1966) — the world’s first EPZ — and the Hsinchu Science Park (1980) provided state-created infrastructure while leaving allocation to market forces. Morris Chang, recruited from Texas Instruments in 1985, founded TSMC in 1987 as the world’s first dedicated semiconductor foundry — deliberate state industrial policy that operated through technology diffusion rather than state ownership. The democratic transition (martial law lifted 1987, first direct presidential election 1996, first party transfer to DPP in 2000) was driven by the structural transformation creating a dispersed middle class, not regime design. GDP per capita: \$170 (1952) to \$34,238 (2024) — a 200-fold increase. Taiwan confirms that institutional insurance can take radically different forms: no single firm or economic actor depended on the KMT’s continued rule, so the political transition could not destroy the economic foundation.

The land reform is analytically critical because it created the social preconditions for dispersed industrialization. The KMT, arriving from mainland China with no ties to Taiwanese landlords, had no political reason to protect existing landholding patterns — a structural advantage that most developing-country governments, embedded in their own landed elites, lacked. The reform converted landlords into industrial shareholders (they received shares in state enterprises as partial compensation), creating a class with incentives to support industrialization rather than resist it. The resulting rural equality — Taiwan’s Gini coefficient fell below 0.30 in the 1960s-70s, among the lowest in the developing world — created a broad domestic market and a socially cohesive foundation for subsequent industrial transformation. Taiwan’s SME-dominated industrial structure — the average firm was dramatically smaller

than a Korean chaebol — created natural insurance against political disruption. When no single firm or conglomerate accounts for a large share of output, no political transition can destroy the productive base. The contrast with South Korea, where the top five chaebols accounted for over 50% of GDP and were deeply entangled with the state, is instructive: Taiwan’s dispersed structure made the economy inherently more resilient to political change. TSMC’s founding in 1987 — the year martial law was lifted — symbolized the transition from state-directed development to innovation-driven growth. By 2024, TSMC had become the world’s most valuable semiconductor company and the manufacturer of over 90% of the world’s most advanced chips — a single-company illustration of how state industrial policy, operating through technology creation rather than state ownership, produced an autonomous economic actor whose success is entirely independent of any particular political regime.

K.2 E.2 India: Democracy Without Capacity

India is the framework’s hardest case — Path A since 1947, yet the “Hindu rate of growth” (3.5% annually, 1950-1980) produced persistent poverty. The problem was not democracy but low state capacity: the License Raj required up to eighty agencies to approve a single business decision, while the state could not collect taxes efficiently (tax-to-GDP ratio ~11-12%) or deliver services at scale. Manufacturing barely moved: 9% of GDP at independence to 16% by 1991, then back down to 13% by 2024 — workers leaving agriculture entered low-productivity services rather than factories. The 1991 liberalization (Finance Minister Manmohan Singh dismantling the License Raj after a balance-of-payments crisis that required airlifting forty-seven tons of gold to the Bank of England as collateral) addressed the policy constraint without resolving the capacity constraint. India reveals a boundary condition: Path A requires state capacity just as much as Paths B through E. Democracy is not a substitute for the ability to govern.

The Indian case complicates the simple narrative that democracy produces development. India’s democratic institutions have provided extraordinary succession insurance — seventeen

prime ministers since independence, multiple party transfers of power, survival of separatist pressures, religious conflict, and military tensions — but they have not produced the kind of rapid structural transformation that characterizes the East Asian developmental states. The explanation lies not in democracy itself but in the specific configuration of Indian state capacity: strong at the center (the Indian Administrative Service, the Reserve Bank of India, the Supreme Court are genuinely capable institutions) but weak at the point of delivery (health clinics without doctors, schools without teachers, police stations that do not respond). Pritchett’s characterization [2009] of India as a “flailing state” — “a nation-state in which the head, that is, the elite institutions at the national (and in some states) level, remain sound and functional but the arms and legs of the state... become increasingly ineffective” — captures the paradox.

Post-1991 growth acceleration (averaging 6-7% through the 2000s and 2010s) demonstrated that removing policy constraints could unlock growth even without resolving capacity constraints. India’s IT services sector — Infosys, Wipro, TCS — emerged as globally competitive without significant state direction, exploiting the English-language education system and low labor costs. But the structural transformation that the ADRI framework measures remained limited: manufacturing as a share of GDP actually *declined* after liberalization, from 16% to 13%, as India’s growth was driven by services rather than the factory-based industrialization that characterized East Asian development. The “missing manufacturing” problem — the failure to create the labor-intensive factory employment that absorbed hundreds of millions of workers in China, Vietnam, and Bangladesh — means that India’s growth, while impressive in aggregate, has not produced the broad-based structural transformation that creates developmental resilience. India proves that democracy provides institutional insurance for political stability but not automatically for economic transformation — the two functions are analytically distinct.

K.3 E.3 Tanzania: When Developmental Intent Is Not Enough

Julius Nyerere had a genuinely low discount rate — broad legitimacy, mass party governance, voluntary departure in 1985. Yet Tanzania failed catastrophically. The Arusha Declaration (1967) imposed collectivized agriculture and Ujamaa villagization, forcibly relocating at least five million people. In 1970 Tanzania exported 540,000 tons of surplus maize; by 1974 it was importing 300,000 tons. GDP per capita fell below independence levels. The explanation is economic model, not discount rate. Collectivized agriculture contradicted local knowledge and destroyed production incentives; the state lacked the administrative depth to run a command economy. After Nyerere's departure and market reforms, growth improved to ~7% since 2000 — but GDP per capita reached \$1,224 only by 2023, a level market-oriented policies might have achieved by the 1980s. The boundary condition: the discount rate framework assumes minimally viable economic policy. A low discount rate sustaining a wrong economic model merely perpetuates failure longer.

Tanzania is analytically important because it disentangles two variables that the framework normally treats as correlated: the leader's time horizon and the quality of economic policy. Nyerere's time horizon was genuinely long — he voluntarily stepped down after two decades, invested heavily in education and national unity (Tanzania's Swahili-language policy created one of the most linguistically cohesive nations in Africa), and built a political system (CCM, the party that succeeded TANU) that has managed multiple peaceful transitions. His personal corruption was essentially zero — he died in modest circumstances. By every measure of leadership quality *except economic policy*, Nyerere was exceptional.

But Ujamaa villagization was a catastrophe. Operation Vijiji (1973-1977) forcibly relocated between five and eleven million people into planned villages, destroying existing agricultural practices and social networks. The collectivized farms produced less than the smallholder agriculture they replaced, because central planners could not replicate the local knowledge — soil conditions, rainfall patterns, crop rotation practices — that individual farmers had

accumulated over generations. The state-owned marketing boards extracted agricultural surplus through below-market producer prices, destroying incentives for production. By 1981, Tanzania required IMF assistance. Nyerere's genuine developmental intent — his belief that collectivized agriculture would produce equality and modernization simultaneously — sustained a failing model for two decades because his legitimacy insulated him from the political pressures that would have forced correction in a more competitive political system. The irony is stark: Nyerere's long time horizon, which the insurance framework normally treats as an asset, became a liability when combined with a fundamentally wrong economic model. He persisted with Ujamaa *because* he had the legitimacy and authority to persist — the very qualities that, with better policy, would have produced developmental success.

K.4 E.4 Chile: The Rare Path E to Path A Transition

Pinochet's Chile (1973-1990) achieved the rarest outcome: a personalist dictatorship that transitioned to democracy. The Chicago Boys' radical liberalization produced the 1982 banking crisis (GDP fell 14.3%); the pragmatic phase under Hernan Buchi, supported by CORFO and Fundacion Chile (which created Chile's salmon industry from scratch — establishing Salmones Antarctica in 1982, then selling it to Japan's Nippon Suisan Kaisha), produced genuine diversification into salmon, wine, fruit, and forestry. The 1980 Constitution's plebiscite provision — designed as a confidence vote — backfired: the “No” won with 56% in October 1988. Pinochet explored an auto-coup to annul results (National Security Archive, 2018), but the professional military, whose institutional interests had diverged from his, refused. Air Force Commander Fernando Matthei publicly acknowledged the “No” victory on television, forcing Pinochet's hand. Growth *accelerated* under democracy — the Concertacion averaged 7% through the 1990s. Chile's transition required the convergence of institutional accidents that cannot be planned: constitutional plebiscite, independent electoral tribunal, professional military autonomy, and a diversified economy creating organized private actors independent of regime patronage. Rwanda has none of these escape mechanisms.

The Chilean case deserves careful analysis because it appears to contradict the framework's prediction that Path E regimes rarely achieve democratic transitions. The contradiction is resolved by identifying the specific institutional features that enabled Chile's escape — features that are genuinely rare and cannot be deliberately replicated:

First, the 1980 Constitution's plebiscite provision was designed as a legitimation device, not a transition mechanism. Pinochet expected to win. The fact that an instrument of authoritarian legitimation became the vehicle for democratic transition was an *institutional accident* — an unintended consequence of constitutional design that the designer did not anticipate. Second, the electoral tribunal (*Tribunal Calificador de Elecciones*) that certified the results maintained professional independence from the military government — an institutional survival from Chile's pre-1973 democratic tradition that Pinochet did not fully control. Third, the Chilean military's professional identity — as an institution with interests distinct from any individual commander — created a check on Pinochet's impulse to annul the plebiscite. When Pinochet summoned the junta to discuss voiding the results, Air Force Commander Fernando Matthei went directly to television and acknowledged the "No" victory, making an auto-coup politically impossible. Fourth, the economic diversification produced by the pragmatic phase of Pinochet's economic policy — salmon, wine, fruit, forestry — created organized private sector actors (export associations, business federations) whose economic interests were independent of regime patronage and who could function as autonomous political actors supporting transition.

Rwanda possesses none of these institutional features: no constitutional provision that could become a transition mechanism, no independent electoral body, no military whose institutional identity is separate from Kagame's personal authority, and no diversified private sector independent of RPF patronage. The Chilean case confirms that Path E escape is possible in theory but requires institutional preconditions that are products of historical accident rather than deliberate design.

K.5 E.5 Japan: The Developmental State Lifecycle

Japan is the original developmental state [Johnson, 1982]: MITI directing private firms through credit allocation, trade protection, and “administrative guidance,” producing a 140-fold GDP per capita increase (\$180 to \$25,000, 1950-1990). The LDP’s factional (*habatsu*) system managed the discount rate through internal rotation — fifteen PMs between 1955 and 1993, average cabinet duration 9.4 months — channeling elite competition within institutional boundaries. But Japan demonstrates the lifecycle: miraculous catch-up growth ($\sim 10\%$ in the 1960s) gave way to mature growth ($\sim 4\%$ in the 1970s-80s) and then frontier stagnation ($\sim 1\%$ since 1990). Once Japan reached the technological frontier, MITI could not identify targets; the consensus-oriented, risk-averse apparatus was poorest at fostering venture-capital-driven innovation. The Nikkei did not surpass its 1989 high until February 2024 — a thirty-four-year recovery. Every developmental state must confront Japan’s Phase 3 problem: the institutional configuration producing miraculous catch-up may not suit frontier innovation.

Japan’s relevance to the insurance framework operates on two levels. First, the LDP’s factional system demonstrates that a dominant party can manage succession through internal competition without formal democracy — the *habatsu* rotated prime ministers frequently enough to prevent personalist consolidation while maintaining policy continuity. This is an institutional architecture that shares functional similarities with Singapore’s PAP cadre system but operates through competitive factionalism rather than centralized selection. The system’s resilience was demonstrated during Japan’s “lost decades” — despite economic stagnation, political instability (the LDP briefly lost power in 1993-94 and again in 2009-2012), and mounting fiscal challenges, the institutional framework prevented the kind of systemic crisis that economic stagnation might have produced in a less institutionalized system.

Second, Japan’s frontier stagnation reveals a boundary condition that applies to every developmental state case in this paper. The institutional configuration that produces miraculous catch-up growth — centralized credit allocation, state identification of target industries,

consensus-driven implementation — becomes counterproductive when the economy reaches the technological frontier. Catch-up is about copying and improving known technologies; frontier innovation is about creating new ones. The former benefits from centralized direction; the latter requires decentralized experimentation, tolerance for failure, and the kind of risk-taking that consensus-oriented systems discourage. Singapore recognizes this challenge explicitly but has not yet solved it. South Korea has partially addressed it through Samsung’s R&D spending (approximately \$22 billion annually) and a growing startup ecosystem. China faces the same challenge but Xi’s ideological turn may prevent the market-driven experimentation that frontier innovation requires. For developing countries like Rwanda that are far from the frontier, Japan’s Phase 3 problem is distant — but for the framework’s theoretical completeness, it demonstrates that developmental state institutions have a lifecycle, and the insurance they provide is stage-specific.

K.6 E.6 Gulf States: Resource Rents and the Succession Problem

Kuwait and the UAE illustrate how resource rents distort the framework. Kuwait has the Gulf’s oldest parliament (National Assembly, elected since 1963) and the world’s oldest sovereign wealth fund (KIA, founded 1953, managing \$1.03 trillion). The 2006 succession crisis — parliament voted unanimously to declare the incapacitated crown prince unfit — demonstrated constitutional succession mechanisms with no Gulf parallel. The UAE has less political institutionalization but more economic diversification: Dubai reduced oil from 50% to under 1% of GDP through Emirates airline, Jebel Ali Free Zone, and DIFC. Resource rents provide financial insurance through succession turbulence — but NEOM’s trajectory (Saudi Arabia’s \$500 billion reduced to \$50 billion spent before construction suspended) shows that state-directed capital without accountability produces waste. Oil wealth purchases time, not durability. Kuwait’s 2024 parliamentary suspension — the emir governing by decree — demonstrates that even the Gulf’s most institutionalized monarchy faces regression risk.

The Gulf cases introduce a variable that the framework’s core model does not fully account for:

the role of resource rents in purchasing social stability and regime durability independently of institutional quality. The Gulf monarchies have sustained power not through institutional insurance in the ADRI sense but through a social contract in which the state provides material benefits (subsidized housing, free education, public-sector employment, zero income tax) funded by hydrocarbon revenues, in exchange for political quiescence. This “rentier state” model [Beblawi and Luciani, 1987] creates a fundamentally different political economy from the developmental states examined in the core cases: the state does not need to extract resources from the population (through taxation) and therefore does not need the population’s consent or cooperation.

The implications for the insurance framework are specific. First, resource rents can substitute for institutional quality in the short to medium term — financial reserves provide a buffer that allows regimes to survive succession crises, economic downturns, and policy failures that would topple non-resource states. Kuwait’s \$1.03 trillion sovereign wealth fund means that the state could sustain current spending for decades even if oil revenue ceased entirely. Second, resource rents can *prevent* institutional development by removing the incentive to build the tax-state bargain that Tilly and others identify as the historical foundation of accountable governance: if the state does not need citizens’ tax revenue, it does not need to negotiate the institutional compromises (representation, transparency, accountability) that tax-based states develop. Third, resource rents create a specific form of succession risk: the division of resource wealth among competing family factions becomes the primary axis of political contestation, as seen in Saudi Arabia’s crown prince Mohammed bin Salman’s consolidation of power through the 2017 Ritz-Carlton detentions.

The relevance for non-resource states like Rwanda is limited but instructive: Rwanda cannot purchase time through resource rents, which means its institutional deficits will be exposed more rapidly during a leadership transition. The Gulf model is unavailable to most developing countries — making institutional investment all the more critical.

K.7 E.7 Post-Soviet Divergence: External Anchors

Post-Soviet trajectories reveal the power of external institutional anchors. Poland (\$25,100 GDP per capita by 2024), Estonia (\$30,133), and the Czech Republic (\$30,000) — all EU members — dramatically outperformed Russia and Ukraine (roughly comparable starting conditions to Poland; now 4.7x poorer per capita). Vachudova’s *Europe Undivided* [2005] identifies the mechanism: EU conditionality provided a credible reward, external enforcement via the Copenhagen Criteria, elite socialization, and a coordination device for overcoming domestic opposition to reform. Countries without EU membership prospects developed “super-presidential” regimes. The implication: external anchors can substitute for domestic institutional capacity — but the anchor must be credible (Hungary’s backsliding under Orban shows anchoring weakens after accession). For Sub-Saharan Africa, the absence of comparable institutions is a structural disadvantage. The AU lacks the EU’s enforcement mechanisms. Rwanda has no EU equivalent.

The post-Soviet divergence is analytically powerful because it provides a quasi-natural experiment: countries that began the post-communist transition with roughly comparable starting conditions (similar Soviet-era institutional legacies, similar economic structures, similar human capital levels) diverged dramatically based on a single variable — whether or not they had a credible prospect of EU membership. Poland and the Czech Republic, which entered EU accession negotiations in the late 1990s, implemented comprehensive institutional reforms (independent central banks, competition policy, judicial reform, anti-corruption measures) not primarily because domestic political actors wanted them but because EU conditionality required them. The EU accession process provided external enforcement of institutional standards that domestic politics alone could not sustain — a “credible commitment device” that locked in reforms by making reversal extremely costly (withdrawal from the EU or loss of accession prospect).

The mechanism operated through four channels identified by Vachudova: (1) a credible reward

(EU membership, with its enormous economic benefits including access to the single market, structural funds, and free movement of labor); (2) external enforcement (the Copenhagen Criteria set specific institutional benchmarks that candidate countries had to meet, monitored through regular progress reports); (3) elite socialization (political and bureaucratic elites in candidate countries adopted European norms through training, exchange programs, and institutional partnerships); and (4) a coordination device (EU accession provided a focal point for domestic reform coalitions, overcoming the collective action problems that otherwise blocked institutional change).

Countries without EU membership prospects — Russia, Ukraine, Belarus, the Central Asian states — developed “super-presidential” regimes in which the executive systematically weakened other institutions. The contrast between Poland and Ukraine is particularly instructive: in 1990, Poland’s GDP per capita was roughly comparable to Ukraine’s. By 2024, Poland’s was approximately 4.7 times higher. The divergence is attributable not to differences in human capital, geography, or culture but to the institutional trajectory set by the presence or absence of the EU anchor.

The implication for Sub-Saharan Africa is sobering. The African Union lacks the EU’s enforcement mechanisms, conditionality teeth, and accession incentive structure. No regional organization provides the kind of external institutional anchor that the EU provided to Central and Eastern Europe. Rwanda, in particular, has no external institutional framework that could compensate for domestic institutional deficits — making internal institution-building all the more critical and its absence all the more concerning.

K.8 E.8 What the stress tests reveal

These seven cases confirm the framework’s core claim while revealing boundary conditions:

1. **Economic model matters.** Tanzania shows that a low discount rate cannot compensate for a fundamentally wrong economic model.

2. **Democratic underperformance is real.** India shows that democracy without state capacity produces slow development. Path A is not automatic.
3. **Path E can escape — but only through institutional accidents.** Chile's plebiscite was a confidence vote that backfired. Most Path E regimes lack comparable exit mechanisms. Rwanda certainly does.
4. **The developmental state has a lifecycle.** Japan demonstrates that catch-up institutions become counterproductive at the frontier.
5. **Resource wealth creates a time-delayed discount rate.** The Gulf states have purchased time, not durability.
6. **External institutional anchors can substitute for domestic capacity.** EU conditionality worked; its absence in Sub-Saharan Africa worsens the prognosis for Path E regimes like Rwanda.
7. **Path B takes multiple forms.** Taiwan achieved comparable durability to Singapore through radically different institutional architecture — dispersed SMEs rather than state-directed conglomerates, land reform rather than public housing, technology diffusion rather than state ownership.

L Comparative Analysis and Counterfactuals

L.1 D.1 Comparative ADRI Scores

The following table presents the ADRI scores for all primary cases examined in this paper, along with their component scores and the framework's predictions compared to observed outcomes.

Case	Path	ADRI	SI	SET	FMQ	SETR	CSI	Prediction	Outcome
Singapore 2024	B	0.65	0.37	0.79	0.37	0.97	0.73	Sustained	Confirmed (4 transi- tions)
S. Korea 2020	C->A	0.81	0.53	0.89	0.90	0.87	0.87	Sustained	Confirmed
Botswana 2024	A	0.67	0.69	0.44	0.67	0.78	0.71	Sustained	Confirmed (2024 trans- fer)
Vietnam 2020	D	0.41	0.38	0.75	0.17	0.46	0.31	Moderate	Holding risk
China 2020	D->E	0.42	0.49	0.82	0.07	0.47	0.24	Declining	Xi regres- sion
Rwanda 2020	E	0.33	0.19	0.37	0.21	0.55	0.32	High	Untested risk
Ethiopia 2012	E	0.27	0.32	0.18	0.26	0.39	0.19	High	Confirmed risk (civil war)

Reading the table. ADRI is the composite Authoritarian Development Resilience Index,
normalized to 0-1. SI = Succession Institutionalization; SET = Structural Economic Trans-
formation; FMQ = Feedback Mechanism Quality; SETR = State Economic Transparency

and Restraint; CSI = Civil Service Independence. The “Prediction” column indicates the framework’s ex ante assessment of developmental sustainability; the “Outcome” column records the observed result.

The table reveals a striking pattern: the three cases with the highest ADRI scores (South Korea post-democratization at 0.81, Botswana at 0.67, Singapore at 0.65) have all confirmed the framework’s prediction of sustained development through multiple leadership transitions. The two cases with the lowest ADRI scores (Ethiopia at 0.27, Rwanda at 0.33) have either confirmed the prediction of collapse (Ethiopia) or remain untested (Rwanda). The intermediate cases (Vietnam at 0.41, China at 0.42) are either holding precariously (Vietnam) or actively deteriorating (China under Xi). The correlation between ADRI level and developmental outcome is not perfect — the framework acknowledges stochastic variation and the role of contingency — but the directional relationship is consistent with the main paper’s quantitative findings.

The ADRI scores also illuminate a methodological point about composite indices. No single component is determinative. Singapore scores high on structural transformation (SET = 0.79) and state economic transparency (SETR = 0.97) but only moderately on succession institutionalization (SI = 0.37) — reflecting that the PAP has never faced a competitive succession process, only internally managed ones. Botswana scores high on succession institutionalization (SI = 0.69) and feedback mechanisms (FMQ = 0.67) but only moderately on structural transformation (SET = 0.44) — reflecting diamond dependence and limited manufacturing. The composite nature of the index captures the multidimensional character of institutional resilience: a regime can compensate for weakness on one dimension through strength on others, but weakness across all dimensions (Ethiopia, Rwanda) leaves no margin for error.

Several patterns emerge from the comparative scores:

Succession institutionalization is the critical differentiator among autocracies.

Singapore (SI = 0.37, reflecting four PM transitions within a single-party system), Botswana (SI = 0.69, reflecting democratic transfers including the 2024 party transfer), and South Korea post-democratization (SI = 0.53) score meaningfully above zero on this component. Ethiopia (SI = 0.32, reflecting the EPRDF's organizational structure, which proved insufficient), Rwanda (SI = 0.19), and China under Xi (SI = 0.49, declining from the Deng-era baseline) score low. Vietnam (SI = 0.38) occupies an intermediate position — reflecting its eight General Secretary transitions but uncertainty about the system's durability under To Lam.

Structural transformation provides an alternative form of insurance. South Korea's high SET score (0.89) compensated for its initially low institutional scores under Park, because the transformation created autonomous economic actors (Samsung, Hyundai, POSCO) whose productive momentum was independent of political leadership. China's high SET (0.82) may provide similar insurance against Xi's institutional regression — though this remains an open question. Ethiopia's low SET (0.18) meant it had no structural insurance when institutional failures materialized. Rwanda's SET (0.37) is insufficient to provide structural insurance comparable to South Korea's.

The interaction between succession and transformation. South Korea's case demonstrates that structural transformation can substitute for succession institutionalization — but only when transformation is deep enough to create autonomous economic actors. South Korea under Park scored zero on succession but 1.0 on transformation; the economy survived the assassination because Samsung, Hyundai, and POSCO had their own institutional momentum. Ethiopia under Meles scored zero on succession *and* only 0.25 on transformation — meaning neither institutional insurance nor structural insurance was available when the leader departed. The interaction effect is crucial: moderate scores on both dimensions may provide more resilience than a high score on one and zero on the other. Vietnam's moderate scores on both succession (0.38) and transformation (0.75) may provide more real-world insurance than Ethiopia's extreme asymmetry (0 on succession, 0.25 on transformation). The

ADRI's composite structure captures this interaction: total scores reflect the availability of multiple insurance mechanisms, not the depth of any single one.

No single component is sufficient. Singapore's success reflects high scores across all five components — institutional redundancy that provides insurance against failure on any single dimension. Ethiopia's collapse reflects low scores across all five components — institutional fragility that left no backup when the leader departed. The framework's power lies not in any single indicator but in the composite assessment of institutional depth.

L.2 D.2 What the Cases Reveal

The fourteen cases examined in this paper — seven primary cases and seven stress tests — collectively confirm the insurance theory's core claims while revealing boundary conditions that refine its predictions.

L.3 The cross-case patterns

Before examining the specific confirmations and boundary conditions, it is worth highlighting the cross-case patterns that emerge from the fourteen cases considered together.

The founder's dilemma. Every successful case of institutional insurance required the founding leader to constrain his own power for the benefit of successors he could not yet identify. Lee Kuan Yew accepted the cadre system's choice of Goh Chok Tong over his preferred candidate Tony Tan. Seretse Khama nationalized mineral rights before diamonds were discovered, preventing any future leader (including himself) from using mineral wealth for personal patronage. Deng Xiaoping imposed term limits and retirement norms that would constrain his own successors. Ho Chi Minh established collective leadership norms that prevented any post-Ho leader from accumulating personalist authority. In each case, the founding leader traded personal power for institutional durability — a trade that most autocrats are unwilling to make because the costs (reduced personal authority) are immediate

while the benefits (post-leader stability) are deferred.

The cases in which this trade was *not* made — Meles purging the TPLF's collective leadership in 2001, Park Chung-hee imposing the Yushin Constitution, Xi Jinping abolishing term limits — each produced institutional fragility that materialized (or is materializing) in predictable ways. The founder's dilemma is the central mechanism of the insurance theory: institutional insurance requires self-binding, and self-binding is rational only for leaders whose discount rate is sufficiently low (who value the future enough to sacrifice present power for future stability).

The colonial inheritance effect. Five of the seven primary cases (Singapore, South Korea, Botswana, Vietnam, and China) inherited functional state capacity from their colonial or pre-revolutionary periods — capacity that was redirected toward developmental purposes after independence or revolution. Singapore inherited British common law and administrative infrastructure. South Korea inherited Japanese bureaucratic penetration and industrial organizational models. Botswana inherited the Tswana *kgotla* tradition and British administrative structures (preserved through colonial neglect). Vietnam inherited French administrative structures and added Leninist organizational capacity during the independence war. China's imperial bureaucratic tradition and revolutionary-era organizational capacity provided foundations for the post-Mao developmental state.

The two cases that did *not* inherit functional state capacity — Ethiopia and Rwanda — both built their administrative capacity through guerrilla warfare, producing organizations forged in combat whose discipline translated into bureaucratic effectiveness. But wartime organizations have a structural limitation: they are designed for hierarchical command, not for the distributed authority that institutional insurance requires. Both the TPLF/EPRDF and the RPF produced disciplined, effective administrations — but administrations whose effectiveness was inseparable from the founding leader's personal authority. The colonial inheritance effect suggests that the institutional foundations of developmental success are

established before the developmental project begins — a finding with implications for any developing country attempting to replicate East Asian or Botswanan success without comparable institutional inheritance.

L.4 Confirmation of the core framework

Insurance, not engine. Across all cases, institutional quality determines whether growth *survives* leadership transitions, not how fast it occurs during the founding leader's tenure. Ethiopia under Meles, Rwanda under Kagame, and China under the reform era all achieved rapid growth with varying levels of institutional quality. But Singapore's growth survived four PM transitions because institutions carried the weight; South Korea's growth survived Park's assassination because structural transformation had created autonomous economic momentum; and Ethiopia's growth collapsed after Meles because neither institutions nor transformation were deep enough to sustain it independently.

The succession institutionalization finding. The companion paper's quantitative finding — that succession institutionalization is the one ADRI component that adds beyond V-Dem polyarchy for Cox survival among autocracies ($HR/SD = 0.72$, $p < 0.001$) — is richly confirmed by the case evidence. Singapore's cadre system, Vietnam's Central Committee independence, and Botswana's democratic transfers all demonstrate *different* institutional mechanisms that serve the *same* function: providing a rule-governed process for leadership change that does not depend on the outgoing leader's cooperation.

Personalist developmental authoritarianism is structurally fragile. Ethiopia and China demonstrate from different directions that personalist concentration of authority — even when it produces growth — creates systemic fragility. Meles's 2001 purge of the TPLF's collective leadership hollowed out the party's institutional constraints. Xi's dismantlement of Deng's norms destroyed China's succession mechanism. In both cases, the leader's decision to concentrate personal power removed the institutional constraints that could have prevented

post-leader crisis. The framework predicts the same trajectory for Rwanda.

L.5 Boundary conditions revealed by the stress tests

Economic model matters independently of institutions. Tanzania under Nyerere demonstrates that even a leader with a genuinely low discount rate — broad legitimacy, voluntary departure — cannot compensate for a fundamentally wrong economic model. Collectivized agriculture destroyed production incentives regardless of the institutional framework. The insurance theory assumes minimally viable economic policy; when this assumption is violated, institutional quality is insufficient.

Democracy requires state capacity. India demonstrates that democratic institutions, while providing robust succession insurance, do not automatically produce rapid development. The License Raj's bureaucratic sclerosis, low state capacity for tax collection and service delivery, and the persistence of agricultural employment despite economic growth reveal that Path A requires capable governance, not merely electoral competition. Democracy is a necessary but not sufficient condition for sustained development.

Path E can escape through institutional accidents. Chile's transition from Pinochet to democracy required the convergence of multiple institutional features that cannot be deliberately engineered: a constitutional plebiscite designed as a confidence vote, an independent electoral tribunal, a professional military whose institutional interests had diverged from the dictator's, and a diversified economy creating organized private actors independent of regime patronage. The Chilean escape path cannot be replicated by design — and Rwanda possesses none of the institutional features that made it possible.

The developmental state has a lifecycle. Japan demonstrates that the institutional configuration producing miraculous catch-up growth becomes counterproductive at the technological frontier. Directed investment works when the target is visible (build steel mills, semiconductor fabs, automobile factories like the leaders). It fails when the challenge is

creating novelty (which requires decentralized experimentation, tolerance for failure, and venture-capital-style risk-taking). Every developmental state that reaches the frontier must confront this transition — and Singapore’s struggle with innovation despite its institutional sophistication suggests that the challenge is structural, not merely managerial.

Resource wealth purchases time, not durability. The Gulf states demonstrate that enormous financial reserves can sustain regimes through succession turbulence by funding social contracts (subsidized housing, free education, public employment) that reduce popular demand for political voice. But NEOM’s trajectory — Saudi Arabia’s \$500 billion city-of-the-future reduced to \$50 billion spent before construction was partially suspended — reveals that state-directed capital without accountability mechanisms produces spectacular waste. Resource rents delay the reckoning but do not prevent it.

Multiple paths to insurance exist, but all require self-binding. The cases demonstrate that institutional insurance can be achieved through radically different mechanisms — PAP cadre selection (Singapore), democratic elections (Botswana), Central Committee independence (Vietnam), factional rotation (Japan), dispersed SME economies (Taiwan), deep structural transformation (South Korea). But every successful mechanism shares a common feature: it requires the leader or ruling coalition to accept constraints on their own authority. The diversity of successful mechanisms makes it impossible to prescribe a single institutional recipe. The universality of the self-binding requirement makes it possible to identify which regimes are likely to achieve insurance (those whose leaders accept constraints) and which are not (those whose leaders refuse them).

External anchors can substitute for domestic capacity. The dramatic divergence between EU-accession post-Soviet states (Poland, Estonia, Czech Republic) and non-accession states (Russia, Ukraine, Belarus) demonstrates that external institutional frameworks can substitute for domestic institutional capacity — at least partially and temporarily. EU conditionality provided what domestic politics could not: credible commitments to reform,

external enforcement of institutional standards, and a coordination device for overcoming domestic opposition. The absence of comparable external anchors in Sub-Saharan Africa — the African Union lacks the EU’s enforcement mechanisms, conditionality teeth, and accession incentive — worsens the prognosis for Path E regimes like Rwanda.

Path B takes multiple forms. Taiwan’s radically different institutional architecture — dispersed SMEs rather than state-directed conglomerates, land reform rather than public housing, technology diffusion through ITRI/TSMC rather than state ownership — achieved comparable durability to Singapore’s model. The insurance framework does not prescribe a single institutional recipe; it identifies the *functions* that must be served (succession, transformation, feedback, transparency, meritocracy) while recognizing that these functions can be served through diverse institutional forms.

L.6 The overarching lesson

The cases reveal a fundamental asymmetry in the relationship between institutions and development. Good institutions do not make autocracies grow faster — the twelve causal tests in the main paper return null, and the matched comparison shows identical growth rates (3.67% vs. 3.65%, $p = 0.98$) between high- and low-ADRI autocracies. But bad institutions — specifically, the absence of succession mechanisms, feedback channels, and institutional constraints on leadership — make growth fragile, reversible, and ultimately dependent on the continued presence of a single individual.

Singapore’s Lee Kuan Yew understood this asymmetry: “I would count as my greatest achievement a successor government that is able to carry on as well, if not better, than we did.” Most developmental autocrats do not build institutional insurance because doing so requires constraining their own power for the benefit of successors they may not know and may not trust. The cases confirm that this failure to self-constrain — visible in Ethiopia under Meles, China under Xi, and Rwanda under Kagame — is not a policy error that can

be corrected by better advice. It is a structural feature of personalist authoritarianism: the leader's rational interest in maintaining personal control is incompatible with the institutional requirements for post-leader sustainability.

L.7 The taxonomy of institutional insurance

The cases reveal that institutional insurance takes multiple forms, and no single institutional architecture is universally optimal. The framework identifies five functional requirements — succession, transformation, feedback, transparency, and meritocracy — but these functions can be served through diverse institutional arrangements:

Succession institutionalization can be achieved through democratic elections (Botswana), a party cadre system (Singapore), factional rotation within a dominant party (Japan's LDP), collective leadership with Central Committee authority (Vietnam), or structural transformation so deep that the economy becomes self-sustaining regardless of who leads (South Korea). What matters is not the specific mechanism but whether a rule-governed process exists that can produce leadership change without institutional disruption.

Structural economic transformation can be achieved through state-directed conglomerate building (South Korea's chaebols), multinational recruitment (Singapore's EDB strategy), FDI-driven assembly (Vietnam's Samsung model), or resource-funded investment (Botswana's diamond revenues). What matters is whether the economy has been fundamentally restructured in ways that create autonomous productive actors whose output does not depend on any individual leader's continued presence.

Feedback mechanisms can be provided by genuine multiparty elections (Botswana), calibrated electoral responsiveness within a dominant-party system (Singapore), technocratic policy review institutions (South Korea's KDI), or collective leadership debate (Vietnam's Central Committee). What matters is whether the system receives honest information about policy failures and has institutional capacity to correct course.

State capitalism transparency can be achieved through publicly reported sovereign wealth funds (Singapore’s Temasek, Botswana’s Pula Fund), commercial law governance of state enterprises, independent auditing, and parliamentary oversight. What matters is whether state economic power is exercised under rules that survive leadership changes and prevent quiet asset stripping by incoming leaders.

Civil service independence can be maintained through exam-based recruitment (Singapore’s PSC, South Korea’s civil service examination), merit-based promotion systems, institutional memory embedded in technocratic agencies (South Korea’s EPB/KDI, Singapore’s EDB/MAS), and professional norms that transcend individual political leaderships. What matters is whether the bureaucracy’s competence derives from institutional systems rather than from any individual leader’s personal oversight.

L.8 The implications for Rwanda and similar regimes

The cases collectively produce a sobering assessment for Rwanda and other personalist developmental autocracies. Rwanda under Kagame scores low on every ADRI component: no succession mechanism, limited structural transformation, no genuine feedback channels, opaque state capitalism (Crystal Ventures Limited), and civil service quality dependent on personal presidential oversight. The Ethiopian parallel is precise: Meles’s EPRDF scored similarly on most components, and the system collapsed within six years of the founder’s death.

The framework does not predict that Rwanda will inevitably follow Ethiopia’s trajectory. It predicts that Rwanda *faces the same structural vulnerabilities* — and lacks the institutional insurance that could mitigate them. The probability of irregular successor exit, estimated at 40% (bootstrap 95% CI: 35-44%) based on ADRI-similar autocracies, is not a certainty but a base rate that reflects the historical experience of institutionally comparable regimes. Some ADRI-similar autocracies have survived leadership transitions; most have not. The framework

identifies the specific institutional investments — succession mechanisms, feedback channels, transparent governance — that would reduce Rwanda’s vulnerability, while recognizing that these investments require the leader to constrain his own power in ways that personalist autocrats historically resist.

L.9 The time dimension: when does insurance matter?

The cases reveal that the timing of institutional investment matters as much as its content. Singapore built its institutional architecture during the founding generation — Lee Kuan Yew established the PAP cadre system, Temasek, the CPIB, and the civil service pipeline while he still held power and could design the institutions to reflect his values. Botswana established its resource management framework before diamonds became the dominant revenue source. South Korea’s structural transformation was deep enough to be self-sustaining *before* the founding leader’s departure. In each case, the insurance was in place before it was needed.

The converse is equally clear. Ethiopia’s institutional deficits became apparent only after Meles died — by which point it was too late to build the institutions that could have prevented collapse. China’s institutional norms proved fragile only when Xi chose to break them — by which point there was no institutional actor capable of stopping him. The implication for Rwanda is direct: the time to build institutional insurance is now, while Kagame still holds power and could, in principle, design succession mechanisms. Every year that passes without institutional investment increases the probability that Rwanda’s leadership transition, when it comes, will resemble Ethiopia’s rather than Singapore’s.

The temporal pattern also reveals a structural asymmetry: institutional investment is most valuable when it is least politically attractive. Leaders who are at the peak of their power — when they could most effectively build constraints on their successors — are precisely the leaders who have the least incentive to constrain their own authority. Leaders who are declining — when the need for succession mechanisms is most urgent — typically lack the

power to build effective institutions against the resistance of potential successors competing for advantage. This timing paradox is the central political economy problem of authoritarian institutional development, and it explains why the successful cases (Singapore, Botswana, Deng's China) are rare: they required leaders who combined peak power with the willingness to use that power for self-limitation, a combination that is empirically unusual.

L.10 Methodological reflections

The case study approach employed in this paper has inherent limitations that should be acknowledged. Case studies cannot establish causation with the rigor of quantitative analysis — the main paper's Cox proportional hazards model, IV estimation, and natural experiments provide the causal evidence that the cases illustrate. Selection on the dependent variable — choosing cases because they represent clear successes (Singapore) or failures (Ethiopia) — risks overfitting the framework to known outcomes. The expanded reference cases (Vietnam, China, Botswana) partially address this risk by including ongoing cases whose outcomes are not yet determined.

The primary value of the case approach is in mechanism identification: the cases reveal *how* institutional quality translates into developmental outcomes through specific, traceable channels. The quantitative evidence establishes *that* ADRI predicts regime survival (Cox $HR = 0.57$); the cases show *why* — through succession mechanisms that produce orderly leadership change, feedback channels that enable policy correction, transparent governance that prevents asset stripping, and structural transformation that creates autonomous economic actors. This complementarity between quantitative and qualitative evidence — the former establishing the pattern, the latter illuminating the mechanism — is the methodological foundation of the insurance theory.

L.11 Final assessment

The insurance framework does not claim that authoritarianism cannot produce growth. It can, and it has — spectacularly, in several of the cases examined here. The framework claims that authoritarian growth is fragile unless accompanied by institutional investment that most autocrats are unwilling or unable to make. The cases confirm this claim while revealing the boundary conditions under which it holds, the alternative mechanisms (structural transformation, external anchors, resource rents) that can partially substitute for institutional insurance, and the specific institutional features (succession mechanisms, feedback channels, transparent governance) that distinguish durable development from temporary growth.

The central paradox the cases illuminate is this: the leaders who are most capable of building institutional insurance are often the least willing to do so, because building insurance requires constraining the very authority that makes effective leadership possible. Lee Kuan Yew, Seretse Khama, and Deng Xiaoping were exceptions — leaders who combined exceptional capability with the willingness to limit their own power. Meles Zenawi, Park Chung-hee, and (increasingly) Xi Jinping represent the norm — capable leaders whose developmental achievements were or are undermined by their refusal to institutionalize constraints on their authority. Paul Kagame currently faces the same choice. The insurance framework cannot predict which choice he will make; it can only predict the consequences of each choice based on the historical experience of institutionally comparable regimes.

The fourteen cases examined here span six decades, four continents, and the full range of developmental outcomes — from Singapore’s 176-fold GDP per capita increase to Tanzania’s lost decades, from Botswana’s democratic miracle to Ethiopia’s descent into civil war. The diversity of contexts, institutional configurations, and outcomes provides a robust empirical foundation for the insurance theory’s core claim: institutions do not make autocracies grow faster, but they determine whether that growth survives the founding leader’s departure. For Rwanda — with an ADRI of 0.33, no succession mechanism, limited structural transformation,

and institutional quality dependent on a single leader's continued presence — the cases constitute both a warning and, if the warning is heeded, a guide to the institutional investments that could make the difference between sustained development and post-leader collapse.

The warning is specific: Ethiopia, with a nearly identical institutional profile ($ADRI = 0.27$), descended from “African miracle” to civil war within six years of its founding leader's death. The guide is equally specific: Singapore demonstrates that succession can be institutionalized within a single-party system through a cadre selection mechanism; South Korea demonstrates that deep structural transformation can provide insurance even without succession institutions; Vietnam demonstrates that collective leadership norms, if genuinely enforced, can prevent personalist capture; and Botswana demonstrates that democratic institutions, even in Africa, can produce both development and durable succession. Each path has costs, trade-offs, and preconditions that the case studies illuminate in detail. None is easily replicable. But all share a common feature: they require the founding leader to invest in institutional infrastructure whose benefits accrue to the system rather than to the leader personally. Whether Rwanda's leader will make that investment — whether any personalist autocrat can make that investment — is the question that the insurance theory identifies but cannot answer. The cases can only show what happens when the investment is made, and what happens when it is not.

M Aid, State Capacity, and the Authoritarian Social Contract

Rwanda receives approximately \$85 per capita in foreign aid annually — the highest in East Africa. Aid constituted 86% of the national budget in 2000 and roughly 40% today. This section examines Rwanda's aid relationship through the lens of state capacity, arguing that both Easterly's institutionalist critique and Sachs's resource-gap thesis miss the binding constraint: the ability to convert resources into programs at scale.

M.1 11.1 The Easterly-Sachs debate and its limits

Sachs [2005] argues that the binding constraint is capital — aid provides the “big push” needed to escape the poverty trap. Rwanda’s health transformation is his ideal case: Mutuelle de Santé covering 91% of the population, 45,000 community health workers, Zipline drone delivery, an HIV treatment cascade rivaling wealthy nations. But Sachs treats governance as exogenous. Most aid recipients receive comparable per-capita flows and achieve nothing close to Rwanda’s outcomes. The DRC has received more total aid than Rwanda and ranks among the world’s poorest countries. Sachs identifies a necessary condition (resources) but not a sufficient one.

Easterly [2006] argues that the binding constraint is institutions. Aid fails because top-down “planners” cannot know what bottom-up “searchers” need, and aid bypasses the fiscal bargain that creates accountability. Rwanda appears to refute Easterly: centralized planning (Vision 2020, imihigo performance contracts) has achieved targets his framework predicts should fail. But Easterly would respond that these outcomes depend on Kagame personally — and the main paper’s discount rate analysis supports that prediction.

Rwanda exposes a problem in *both* frameworks. Sachs treats governance as exogenous — as if any government receiving sufficient resources will achieve similar results. Most aid recipients receive comparable per-capita flows and achieve nothing close to Rwanda’s outcomes. Easterly treats institutional development as the only path to good governance and democratic accountability as the only mechanism for institutional development. Rwanda demonstrates that authoritarian state capacity can produce genuine development outcomes — not just growth statistics but observable improvements in child survival, disease treatment, and service delivery. Easterly would respond that these outcomes depend on Kagame personally and therefore aren’t sustainable — and the main paper’s discount rate analysis supports that prediction. But telling a mother whose child survived because of an effectively delivered health program that the governance structure was institutionally suboptimal is answering a

4690 question she did not ask.

4691 The missing variable is state capacity: the ability to formulate coherent policy AND implement
4692 it at scale. State capacity, as Besley and Persson [2011] formalize it, encompasses fiscal capacity,
4693 legal capacity, and collective capacity — and is conceptually distinct from both democratic
4694 governance (Easterly) and resource adequacy (Sachs). Consider what “implementation at
4695 scale” means in Rwanda: Mutuelle de Santé went from 7% coverage in three pilot districts
4696 (1999) to 91% nationally by 2020. The Girinka program distributed 427,576 dairy cows,
4697 driving annual milk production from 50,000 to 731,000 metric tons — a 14-fold increase.
4698 Umuganda contributed \$127 million in labor value (2007–2016). Building near-universal
4699 health insurance in a country with GDP per capita of \$1,000 is something countries ten
4700 times wealthier have failed to do. These programs require administrative depth that most
4701 sub-Saharan African states simply do not possess.

4702 Rajan and Subramanian [2008] conducted the most rigorous cross-country analysis — con-
4703 trolling for endogeneity, geography, institutions, and reverse causality — and found no robust
4704 positive relationship between aid and growth. Their null result is consistent with the state
4705 capacity framework: aid works where state capacity exists and fails where it doesn’t, and
4706 since most recipients lack capacity, the average effect washes out. Rwanda is not evidence
4707 that “aid works.” It is evidence that “aid + state capacity works” — and the state capacity
4708 is doing most of the analytical lifting.

4709 The policy question is therefore not “should we give aid?” (Sachs) or “should we stop giving
4710 aid?” (Easterly and Moyo) but “how do we build state capacity in countries that lack it?”
4711 Rwanda’s answer — authoritarian concentration of power — is neither replicable nor, per
4712 the discount rate analysis, sustainable. But it is also the only answer that has worked at this
4713 scale in post-conflict sub-Saharan Africa, which is why the question remains genuinely hard.

M.2 11.2 The social contract problem

Deaton [2013] identifies the deeper structural issue: non-tax revenue breaks the fiscal bargain. Governments flush with aid can maintain power without democratic accountability. Research finds that aid “neither improves nor deteriorates political governance, but essentially amplifies recipients’ existing political-institutional orientations: aid makes dictatorships more dictatorial and democracies more democratic.”

Rwanda partially escapes this critique: the Rwanda Revenue Authority is one of Africa’s most effective, and domestic revenue constitutes 58% of the 2025/26 budget. Kagame endorsed Moyo’s *Dead Aid* [2009] — “one of the most compelling cases for a new approach to Africa” — even as 40% of his budget comes from aid. But Rwanda’s governance accountability runs to the presidency and the RPF, not to citizens through democratic mechanisms. The fiscal bargain exists between Rwanda and its donors, not between the Rwandan state and Rwandan citizens. Technocratic effectiveness without democratic accountability is not a genuine social contract — it is a managed dependency where the relevant constituency is in Washington and Brussels, not in Kigali’s suburbs or rural hillsides.

This creates a paradox: the better Rwanda performs on the metrics donors value, the less pressure it faces to democratize — and the less it democratizes, the more dependent its developmental performance remains on a single leader’s continued competence and commitment. Aid has funded the construction of a development model that works brilliantly in the short term and is structurally fragile in the long term.

M.3 11.3 The Congo dimension

Rwanda’s involvement in the DRC reveals structural limits the standard development indicators miss. UN investigators documented “critical support” to M23 rebels (UN Security Council, S/2024/969), with 3,000–7,000 Rwandan troops, advanced weapons systems including UAVs and guided mortars, and mineral extraction from seized territory — notably the

4739 Rubaya mine in North Kivu, which accounts for roughly 15% of the world’s coltan supply.
4740 Rwanda’s mineral exports consistently exceed domestic production capacity.

4741 Collier’s “conflict trap” from *The Bottom Billion* [2007] illuminates the dynamic: low income
4742 creates conflict risk, conflict destroys growth, and post-conflict countries face roughly 50%
4743 relapse rates within a decade. Rwanda has escaped its own conflict trap but is actively
4744 perpetuating the DRC’s — a cross-border variant of the resource curse where one country
4745 extracts resources from a conflict-weakened neighbor, ensuring the instability that makes
4746 continued extraction possible.

4747 Global Witness’s 2022 investigation, “The ITSCI Laundromat,” found the mineral traceability
4748 scheme designed to ensure conflict-free supply chains has been systematically compromised.
4749 A former manager of Pact estimated that fraudulent tagging accounted for up to 90% of
4750 exported 3T minerals from Rwanda during the scheme’s early years. In one mining area, up
4751 to 90% of minerals introduced into the scheme in Q1 2021 did not come from validated mines.
4752 End products potentially reach Apple, Intel, Samsung, Nokia, and Tesla. The system suffers
4753 from a structural conflict of interest: ITSCI is funded by levies paid by mineral exporters,
4754 creating perverse incentives to tag minerals regardless of origin.

4755 The DRC involvement matters for three reasons. First, domestic anti-corruption metrics (CPI
4756 43rd globally) do not capture cross-border resource extraction through military proxies — a
4757 government that is simultaneously “clean” domestically and running a cross-border military
4758 extraction operation is not straightforwardly clean. Second, it threatens the aid model: the
4759 UK has suspended bilateral aid (~£32 million), Germany has suspended new development
4760 funds, and the EU Parliament has called for suspension of direct budgetary support. Third,
4761 the fiscal logic is circular: if aid cuts reduce revenue, Rwanda’s incentive to intensify mineral
4762 extraction from the DRC increases — meaning the aid literature’s prescription (reduce aid to
4763 promote accountability) could worsen the conflict literature’s problem (resource-fueled proxy
4764 warfare). Neither body of literature alone captures this dynamic.

M.4 11.4 The genocide credit and its expiration

Rwanda's aid relationship has been shaped by Western guilt over 1994 — the “genocide credit” converting moral debt into fiscal generosity and minimal conditionality. Donors who failed to prevent 800,000 deaths were reluctant to impose conditions on the government that stopped the killing. But the credit may be expiring. A new generation of donor-country policymakers, who did not live through the failure to intervene, may feel less constrained by inherited guilt. The moral calculus shifts when the government that stopped the genocide is documented to be perpetrating military aggression in a neighboring country.

The expiration creates a transition risk. Rwanda's model was built on continued high aid flows with minimal conditionality. If aid decreases, the most readily available alternative revenue source is mineral extraction from the DRC — precisely what triggered the cuts.

M.5 11.5 Synthesis: the modified aid curse

Rwanda represents a modified aid curse — aid has not created kleptocracy, but it has sustained an authoritarian regime that might otherwise face domestic pressure for liberalization. Rwanda simultaneously proves and breaks the aid literature. It proves that aid can produce genuine outcomes when state capacity exists. It breaks the assumption, shared by both Easterly and Sachs, that the governance question has a simple answer. The binding constraint is neither resources nor institutions in isolation — it is the state capacity to convert one into the other. And that capacity, in Rwanda's case, is embodied in a man, not embedded in a system. When the man departs, the capacity departs with him — unless, before then, it is institutionalized.

The aid relationship should be evaluated not by whether it produces current outcomes (it does) but by whether it contributes to the institutionalization that will determine whether those outcomes survive the founder. By this criterion, thirty years of aid to Rwanda have failed. The outcomes are real. The institutionalization is not. The aid literature has nothing to say about how to achieve that institutionalization. Neither, honestly, does anyone else.