The China Trajectory: A Manipulation-Resistant Framework for Documenting Internal Economic Stress

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Overview

China's official statistical system is structurally optimized to report political targets rather than underlying economic conditions. Standard macroeconomic frameworks that treat official data as signal-with-noise are therefore misspecified at the design level. This paper constructs a manipulation-resistant framework for documenting internal economic stress by establishing an admissibility hierarchy for evidence and three composite indices — Margin Compression, Employment Stress, and Subsidy Dependency Ratio — each built exclusively from sources that cannot be quietly revised, suppressed, or manufactured at low cost. The framework documents a consistent pattern of intensifying internal stress across 2024-2025 that official GDP and employment figures do not reflect, then assesses the monetary escape route and finds it structurally constrained. Falsification conditions are stated explicitly for each index and for the aggregate synthesis.

I. The Input Problem: Why Standard Frameworks Fail

Any framework for analyzing China's economic trajectory confronts an immediate methodological problem: the primary inputs are produced by an entity with a structural interest in the outputs.

China's National Bureau of Statistics (NBS) operates within a political system in which economic data serves dual functions — measurement and legitimation. GDP targets are set in advance at the National People's Congress. Local officials have historically been evaluated in part on whether they meet those targets. The result is a statistical system in which the measurement apparatus and the political accountability apparatus are not independent.

This is not a claim about deliberate falsification by individual statisticians. It is a structural observation: when the same institutional system sets the target, produces the measurement, and evaluates the result, the measurement cannot be treated as an independent check on the target. The measurement and the target will converge, by design or by bureaucratic gravity.

The practical consequence is that frameworks which treat official Chinese GDP, employment, and CPI figures as signal-with-noise are misspecified at the design level. They will systematically underweight stress and overweight resilience, not because of random error, but because the noise is not random — it is directional.

The framework in this paper responds to this problem by establishing an admissibility hierarchy: evidence is evaluated before it enters any calculation, and only evidence that survives admissibility review enters the indices.

II. The Admissibility Hierarchy

Evidence admitted to the framework is classified into four tiers based on its structural resistance to manipulation:

Tier 1: External and Independent Sources

Data produced by institutions with no dependency on Chinese state approval and no material incentive to align with official narratives. Examples: IMF Article IV consultations, World Bank enterprise surveys, academic field surveys with independent funding, satellite-derived economic activity measures, trade data from counterpart countries (which China cannot revise).

Tier 1 evidence is preferred and given the highest weight. It enters indices without discount.

Tier 2: Market-Priced Signals

Information embedded in prices set by parties with financial stakes in accuracy. Chinese bond yields, credit default swap spreads on Chinese sovereign and corporate debt, offshore renminbi forward rates, and commodity import volumes reported by exporting countries all fall here. Markets can be manipulated at the margin, but sustained manipulation of market-priced signals is costly and leaves detectable traces.

Tier 2 evidence enters indices at moderate weight. Anomalies between Tier 2 signals and official Tier 4 data are themselves informative and flagged.

Tier 3: Physical and Behavioral Proxies

Observable real-world activity that is difficult to fabricate at scale and costly to suppress. Electricity consumption reported by grid operators (distinct from NBS), freight volumes reported by logistics firms, satellite night-light intensity, pollution monitoring data from independent sensors, port throughput reported by port operators, and property transaction volumes reported by real estate platforms all fall here. These proxies can be selectively suppressed — several have been — and suppression is itself treated as an informative signal in the framework.

Tier 3 evidence enters indices at moderate weight. When Tier 3 data is suppressed or access is restricted, the framework records the suppression event and treats it as consistent with the stress hypothesis.

Tier 4: Regime Statements and Official Data

Officially published GDP, CPI, unemployment, and related statistics from NBS and affiliated bodies. These are admitted to the framework but treated as measurements of the political signaling system rather than the underlying economy. They enter indices only where corroborated by at least one Tier 1 or Tier 2 source.

Divergence between Tier 4 and Tiers 1-3 is itself a primary signal. Widening divergence indicates increasing political pressure on the measurement apparatus, which is informative about stress even when the direction of the underlying stress cannot be determined from official data alone.

III. The Structural Mechanism: Cost-Price Squeeze

Before presenting the indices, it is useful to specify the structural mechanism the framework is designed to detect. The claim is not simply that China's economy is slowing — a claim that could be made about any mature economy at certain cycle points. The claim is that China faces a structurally distinctive form of internal stress that official data is specifically designed not to capture.

The mechanism is a cost-price squeeze operating simultaneously across the industrial and real estate sectors:

On the industrial side: Chinese manufacturers face input costs (labor, energy, land, regulatory compliance) that have risen steadily over the past decade, while output prices face persistent deflationary pressure from overcapacity and suppressed domestic demand. Producer price deflation has persisted for more than 40 consecutive months through 2025, indicating that firms cannot pass cost increases to customers. The squeeze is visible at the firm level as margin compression and at the macro level as prolonged PPI deflation even as CPI remains reported near zero.

On the real estate side: The property sector accounted for roughly 25-30 percent of economic activity by various estimates. The debt restructuring of major developers (Evergrande, Country Garden) has produced a balance-sheet recession dynamic in which asset price declines depress household wealth, reduce consumption, and tighten credit availability simultaneously.

The combination produces an involution dynamic: firms and local governments intensify activity (more output, more construction, more regulatory compliance theater) while the economic return on that activity declines. Involution produces measured activity that overstates productive value creation — which is precisely why GDP figures may remain near-target while underlying stress indicators deteriorate.

IV. The Three Indices

Index 1: Margin Compression Index

The Margin Compression Index (MCI) measures the spread between input costs and output prices across China's industrial sector, using sources that cannot be simultaneously revised by a single administrative authority.

Construction: MCI = f(PPI deflation duration, unit labor cost trend, energy cost index, industrial profit margin data from NBS cross-checked against enterprise survey data from independent sources).

Key inputs:

PPI deflation duration and magnitude (NBS, cross-checked against export price indices reported by trading partners)

Unit labor cost trends derived from wage data in provincial labor bureau reports cross-checked against migrant worker survey data from academic institutions

Energy cost inputs from electricity grid operator data and commodity import price data from counterpart-country export records

Industrial enterprise profit data from NBS monthly surveys, flagged where divergence from Tier 2 signals exceeds two standard deviations

Current reading (as of Q2 2025): Severe. PPI deflation at -2.8 percent year-on-year persisting 43 months. Industrial enterprise profits down 3.5 percent year-on-year (NBS) while Tier 2 bond

market signals suggest conditions worse than officially reported. Suppression of granular profit data at the provincial level since Q3 2024 is itself an informative signal.

Falsification condition: If PPI returns to sustained positive territory (>+1.0 percent for three consecutive quarters) while industrial profit margins simultaneously recover to 2019-2021 levels as corroborated by Tier 1 enterprise surveys, the MCI stress reading is disconfirmed.

Index 2: Employment Stress Index

The Employment Stress Index (ESI) measures internal labor market conditions using proxies that are structurally distinct from official unemployment figures, which cover only registered urban workers and exclude the migrant labor force of approximately 300 million workers.

Construction: ESI = f(youth unemployment trajectory, migrant worker survey data, job posting volumes from private platforms, remittance flows to rural origin provinces, consumption patterns in migrant-origin counties).

Key inputs:

Youth unemployment rate — suspended by NBS in August 2023 after reaching 21.3 percent; resumed in January 2024 with methodology revision that produced an immediate decline. The suspension and methodology revision are both treated as informative signals within the framework.

Migrant worker survey data from Renmin University and independent academic institutions

Job posting volume trends from Zhaopin, 51Job, and similar platforms (Tier 3 — private firms, but observable by external researchers and inconsistent with fabrication at scale)

Remittance flow data from provincial rural bank systems and mobile payment platforms (aggregate data accessible to researchers)

Current reading (as of Q2 2025): Elevated. Youth unemployment resumed at 14.6 percent post-revision but trajectory remains elevated. Migrant worker surveys indicate reduced construction sector employment consistent with property sector contraction. Job posting volumes across private platforms down approximately 18 percent year-on-year.

Falsification condition: If independent academic surveys of migrant worker employment conditions show sustained recovery to 2019-2021 employment rates, and if youth unemployment declines to and sustains levels below 12 percent under both the revised and original methodologies, the ESI stress reading is disconfirmed.

Index 3: Subsidy Dependency Ratio

The Subsidy Dependency Ratio (SDR) measures the fraction of industrial output and firm survival that depends on direct or indirect state subsidy. Rising SDR indicates a declining share of genuinely market-viable production — an economy in which activity is maintained by administrative command rather than market return.

Construction: SDR = f(local government fiscal transfers to SOEs and strategic sectors, policy bank lending volumes, directed credit ratios in banking system, subsidy-to-revenue ratios disclosed in listed company filings).

Key inputs:

- Local government fiscal transfer data from provincial budget disclosures (required by law, though increasingly delayed and incomplete — incompleteness is itself an informative signal)
- Policy bank (CDB, EXIM, ADBC) lending volumes from published annual reports and regulatory filings
- Directed credit indicators from PBOC quarterly monetary policy reports
- Subsidy disclosures in A-share and H-share listed company annual reports (audited, subject to securities law penalties for misstatement)

Current reading (as of Q2 2025): Elevated and rising. Policy bank lending expanded significantly in 2024-2025 concentrated in infrastructure and strategic industrial sectors. Local government fiscal transfers to priority sectors have increased while general fiscal revenues decline — indicating an economy increasingly maintained by administrative resource allocation rather than market returns. SDR is directionally consistent across Tier 2 and Tier 3 sources.

Falsification condition: If policy bank lending returns to pre-2020 growth rates while local government fiscal transfers to state enterprises decline as a share of provincial revenue, and if listed company subsidy-to-revenue ratios return to 2018-2019 levels, the SDR stress reading is disconfirmed.

V. The Monetary Escape Route and Its Constraints

A standard objection to the stress framework is that China retains substantial monetary and fiscal space to address any deterioration. The PBOC has room to cut rates. The central government has low direct debt-to-GDP compared to developed economies. China has large foreign exchange reserves. Any stress is therefore containable by policy response.

This objection deserves a serious answer because it has historically been correct: China's 2008-2009 stimulus and its 2015-2016 credit expansion both demonstrated that administrative capacity could offset what markets anticipated as hard constraints.

The framework's response is structural, not cyclical:

- First, the fiscal headroom that existed in 2008 and 2015 has been substantially consumed. Local government financing vehicle (LGFV) debt is estimated at 50-60 percent of GDP by IMF and independent analysts, much of it held off official balance sheets. The central government's stated debt-to-GDP understates consolidated public sector obligations. The space for another 2008-scale stimulus without triggering a debt sustainability concern is materially smaller.
- Second, the transmission mechanism for monetary stimulus is impaired. Firms facing cost-price squeeze do not borrow more when rates decline — they are not investment-constrained, they are demand-constrained. Rate cuts increase the supply of credit to borrowers who are not using existing credit capacity. The credit impulse required to move the real economy is therefore larger per unit of policy action than in prior cycles.
- Third, the consumption floor is structurally low. Household consumption at approximately 39 percent of GDP reflects the historical prioritization of investment over household income.

Repeated stimulus has failed to sustainably raise the consumption share because the institutional mechanisms that compress household income — state-enterprise dominance, land system, household registration system — remain in place. Monetary easing that does not address these structural features will route through investment and exports rather than consumption.

Fourth, the external demand channel faces increasing friction. Export volumes have held up through 2024-2025 partly by expanding into emerging market destinations as Western tariff barriers rise. But currency depreciation sufficient to restore export competitiveness risks capital flight and currency instability — constraints the PBOC cannot ignore.

The monetary escape route is available at the margin. It is not available at the scale that would reverse the structural stress the indices document.

VI. The Strongest Counterargument

The framework's most serious challenge is not the monetary objection addressed above, but a deeper epistemological objection: that the admissibility hierarchy systematically biases toward stress precisely because it discounts official data and privileges external sources, which themselves may reflect Western analytical priors or market positioning rather than ground truth.

This counterargument has three components. First, external data sources are not neutral — IMF, World Bank, and Western academic researchers may hold priors about Chinese institutional quality that lead them to interpret ambiguous evidence as confirming stress rather than resilience. Second, market-priced signals (Tier 2) are heavily influenced by investor positioning, which is itself influenced by narrative — creating circularity where the stress narrative generates bearish positions that generate bearish market signals that confirm the stress narrative. Third, the framework's treatment of data suppression as "informative" is unfalsifiable in a problematic direction: any absence of contradicting evidence is treated as confirming the hypothesis.

These are legitimate structural concerns. The framework's response:

On external source bias: The framework specifically includes counterpart-country trade data (Chinese exports as recorded by destination countries), satellite-derived activity measures, and audited corporate financial disclosures — sources that are neither Western-analyst-derived nor market-priced. These are the hardest Tier 1 and Tier 3 signals, and they show consistent patterns regardless of analyst priors.

On market signal circularity: The framework flags this explicitly. Where Tier 2 signals are the primary evidence, conclusions are stated with lower confidence. The indices are not driven by market signals alone — they are constructed as weighted composites requiring consistency across tiers.

On the suppression-as-evidence problem: The framework does not treat suppression as confirmation of the stress hypothesis. It treats suppression as reducing the precision of estimates — widening the confidence interval. The falsification conditions are stated in terms of positive evidence (return to pre-stress indicator levels), not absence of suppression. A regime that suppresses data but produces consistent Tier 1 and Tier 3 evidence of improvement would disconfirm the hypothesis.

The epistemological objection cannot be fully resolved — any framework for analyzing an opaque system must rely on inference from incomplete signals, and all such frameworks carry assumptions that can be challenged. The appropriate response is not to claim the framework is assumption-free, but to state the assumptions explicitly and specify what evidence would revise them. This is what the falsification conditions are designed to do.

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VII. Synthesis: Convergent Stress Across Independent Channels

The three indices — Margin Compression, Employment Stress, and Subsidy Dependency Ratio — are constructed from largely non-overlapping data sources. MCI draws primarily on price and cost data; ESI draws primarily on labor market proxies; SDR draws primarily on fiscal and credit data. The convergence of all three on elevated stress readings as of Q2 2025 is therefore more informative than any single index reading in isolation.

Convergence across independent channels is the framework's primary inference mechanism. A single anomalous indicator can reflect measurement error, sector-specific shock, or methodological artifact. Three indices built on independent data sources converging on the same directional reading indicates a systemic pattern consistent with the cost-price squeeze mechanism described in Section III.

The pattern as of Q2 2025:

> MCI: Severe. 43 months of PPI deflation. Industrial profits declining. Granular provincial data increasingly unavailable.
>
> ESI: Elevated. Youth unemployment at elevated levels. Migrant worker employment declining in construction. Job posting volumes contracting.
>
> SDR: Elevated and rising. Policy bank lending expanding. Local fiscal transfers to priority sectors increasing as general revenues decline.

The monetary escape route assessment (Section V) finds structural constraints on the scale of response available. The combination of converging stress indicators and constrained policy response space is the framework's basis for characterizing China's economic trajectory as one of intensifying internal pressure that official data is not designed to capture.

This does not constitute a prediction of imminent crisis. Stressed economies can sustain elevated pressure for extended periods, particularly when the state retains administrative capacity to allocate resources and suppress adjustment mechanisms. The framework documents conditions, not timelines.

VIII. Conclusion

Standard macroeconomic analysis of China faces a fundamental design problem: the primary inputs are produced by a system that is structurally incentivized to meet political targets. A framework that treats official data as signal-with-random-noise will systematically understate stress and overstate resilience.

The manipulation-resistant framework presented here responds to this problem by establishing an admissibility hierarchy, constructing three composite indices from non-overlapping source tiers, and requiring convergence across indices before drawing aggregate conclusions. The framework's falsification conditions specify exactly what evidence would reverse each stress reading.

The framework connects directly to the broader triangulation methodology developed in companion papers. The five-channel triangulation approach — using independent data streams whose simultaneous manipulation would be detectable — is the methodological foundation on which the admissibility hierarchy is built. The China Trajectory framework operationalizes that methodology at the level of specific, constructed economic indices.

As of Q2 2025, all three indices read elevated to severe. The monetary escape route faces structural constraints not present in prior stimulus cycles. The synthesis finding is that China is experiencing intensifying internal economic stress that the official statistical system is not designed to document, and that the policy tools available to contain that stress are less potent than in previous cycles.

That finding may be wrong. The falsification conditions specify how.

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Aggregate Falsification Conditions

The aggregate stress synthesis is disconfirmed if the following conditions are met simultaneously and sustained for a minimum of three consecutive quarters:

1. PPI returns to sustained positive territory (+1.0 percent or above year-on-year) corroborated by exporter-reported Chinese import prices.

2. Independent academic surveys of migrant worker employment conditions show recovery to 2019-2021 participation and income levels.

3. Policy bank lending growth returns to pre-2020 rates and local fiscal transfers to state enterprises decline as a share of provincial revenue.

4. Granular provincial data access is restored at the level available in 2018-2020 — the data suppression events documented in Sections IV.1 and IV.2 are reversed.

Partial confirmation of any single condition without the others updates the relevant index but does not disconfirm the aggregate synthesis. The framework requires convergent improvement across independent channels in the same way it required convergent stress readings to reach the current synthesis.

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Relationship to Companion Papers

This paper is designed to function as the empirical foundation of a cluster of methodologically related working papers on China's economic and political trajectory.

"What the Framework Cannot See" examines the structural limits of standard analytical frameworks when applied to systems with managed information — the diagnostic problem that motivates this paper's admissibility hierarchy.

"Reality Leaves Footprints" documents the behavioral signals that survive information management and argues that even a highly capable state cannot suppress all observable implications of internal conditions.

"The Reverse Multiplier" traces the economic mechanism by which firm exit and capability withdrawal trigger a contractionary chain reaction amplified by China's structurally low household consumption share.

"From Triangulation to Prediction" converts the five-channel triangulation methodology operationalized here into a forecasting instrument, with a signal hierarchy, a silence map and a contradiction index, and applies it to the yuan internationalization question.

The China Trajectory framework provides the empirical stress documentation that the mechanism and prediction papers take as their starting conditions. Together the papers constitute a structured argument that proceeds from methodology (what counts as evidence) through mechanism (how stress propagates) to prediction (what the framework forecasts and how it can be shown wrong).

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About the Author

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