MEASURING
CROSS-BORDER ECONOMIC
and **FINANCIAL LINKAGES**
in a Dynamic World

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INTERNATIONAL MONETARY FUND

Bilateral Trade Asymmetries between Nepal and India

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Trade Asymmetries: Why they Matter

Policy Distortion

Unreliable BOP & GDP signals

Revenue Risk

Mis-valuation & mis-reporting loopholes

Credibility Impact

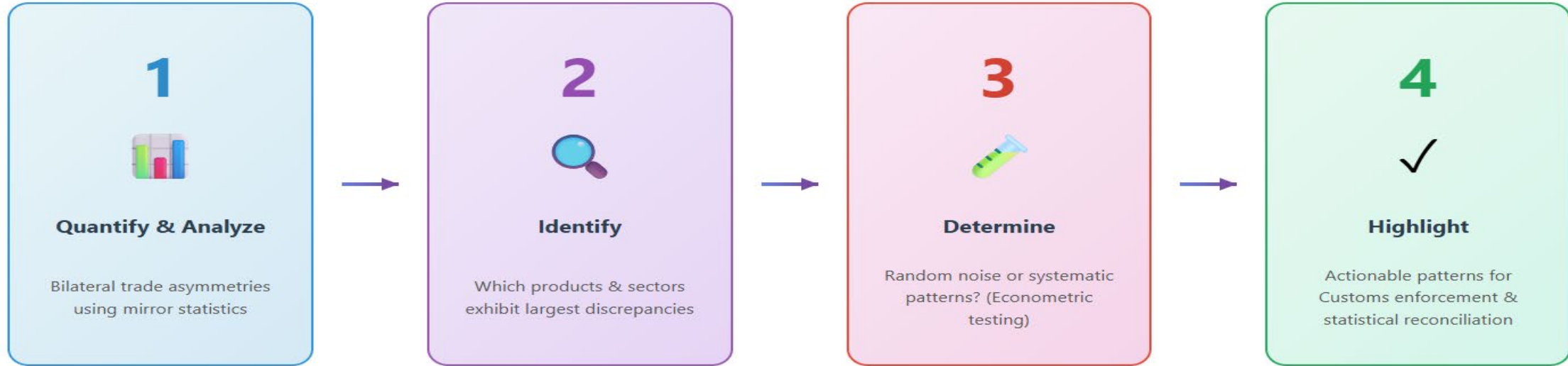Weakens trust in national statistics & bilateral dialogue
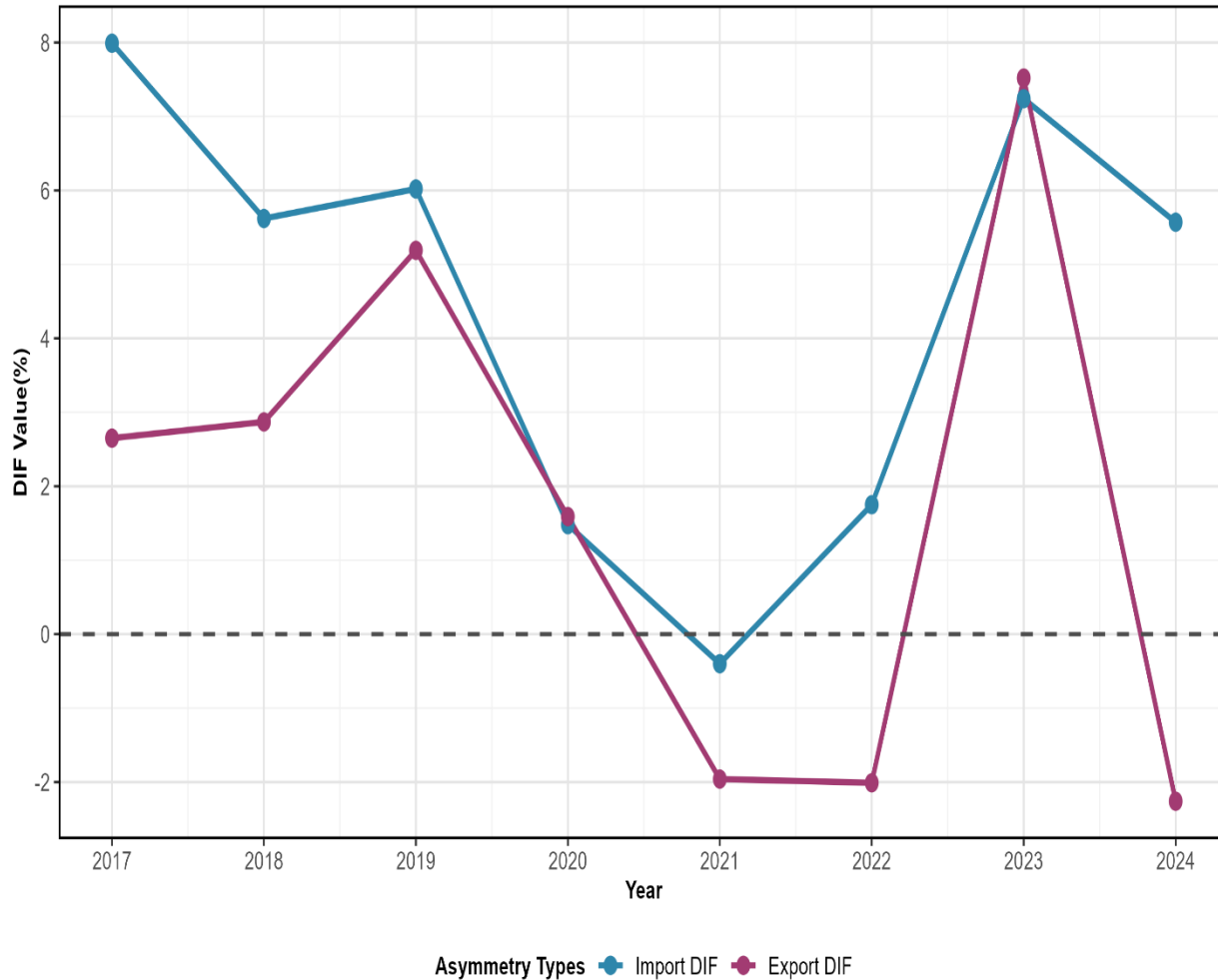
Nepal–India Trade Context

- India accounts for ~59% of Nepal's imports and over 80% of its exports
- Nepal relies on Indian transit infrastructure for third-country trade
- Open border increases both trade flows and informal/unrecorded movements
- Accurate bilateral data is critical for revenue, macroeconomic policy, and evidence-based dialogue

Research Objectives & Method

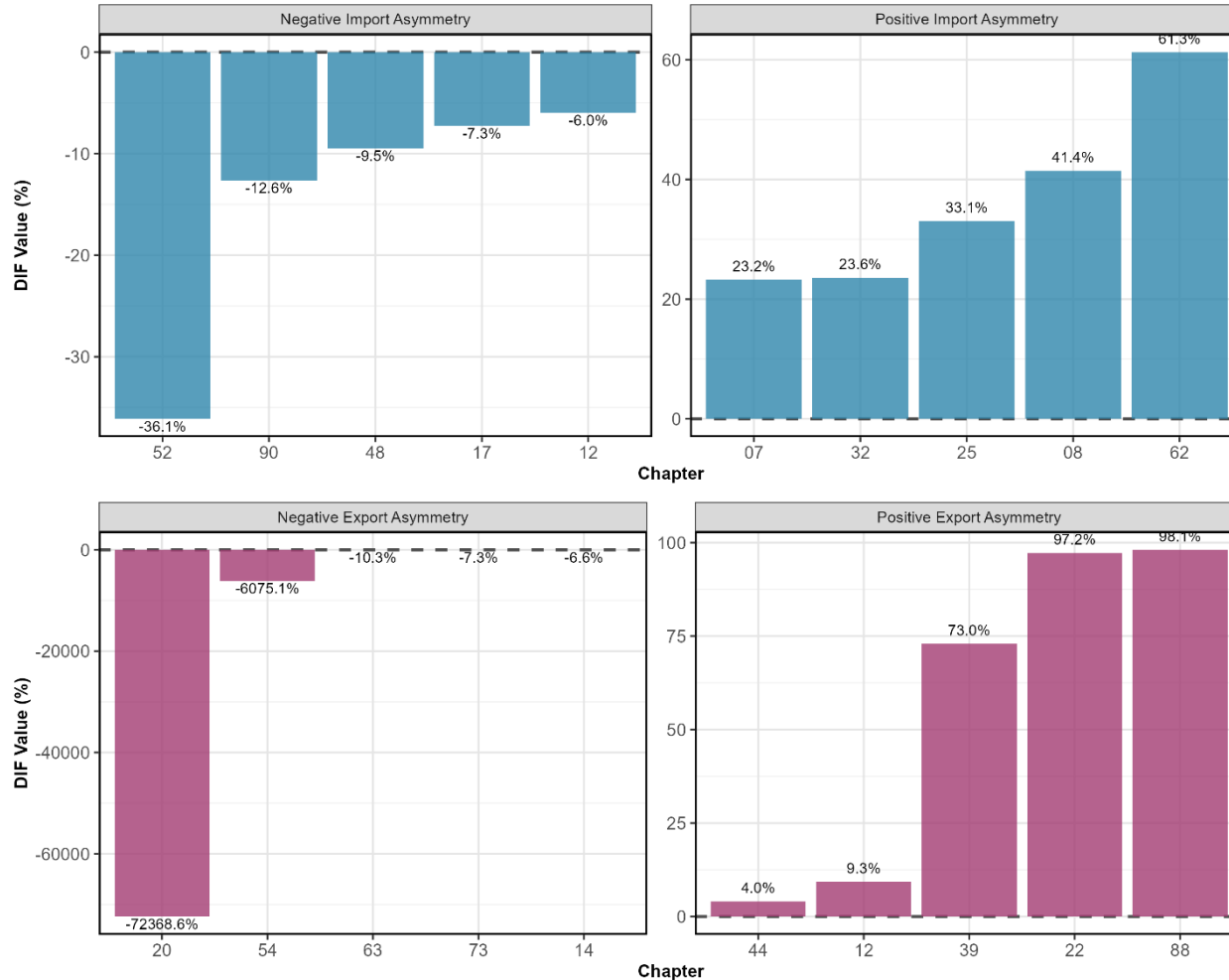| **1**	**2**	**3**	**4**
Quantify & Analyze	**Identify**	**Determine**	**Highlight**
Bilateral trade asymmetries using mirror statistics	Which products & sectors exhibit largest discrepancies	Random noise or systematic patterns? (Econometric testing)	Actionable patterns for Customs enforcement & statistical reconciliation

- 8 years of data (FY 2017/18–2024/25)
- Mirror statistics at HS6 level (Nepal vs India)
- Measured using DIF index + Weighted OLS
- All values aligned in INR for comparability

All data processing and analysis conducted in R

Aggregate Trends in Bilateral Trade Asymmetries

- Import-side discrepancy averaged 4.2%; export-side 0.9%.
- High year-to-year volatility in both indices
- COVID-19 period (2020–2021) exhibited temporary convergence, with discrepancies approaching zero.

Where Are the Biggest Gaps

- Import Asymmetries:
  - Negative: Chapter 52 (cotton), indicating partner reports higher exports than Nepal's recorded imports.
  - Positive: Chapter 62 (apparel) and Chapter 08 (fruits)
- Export Asymmetries:
  - Negative: Chapter 20 (prepared food products)
  - Positive: Chapters 22 and 88 (beverages, aircraft parts), small trade share can inflate %

Systematic Drivers: Regression Results

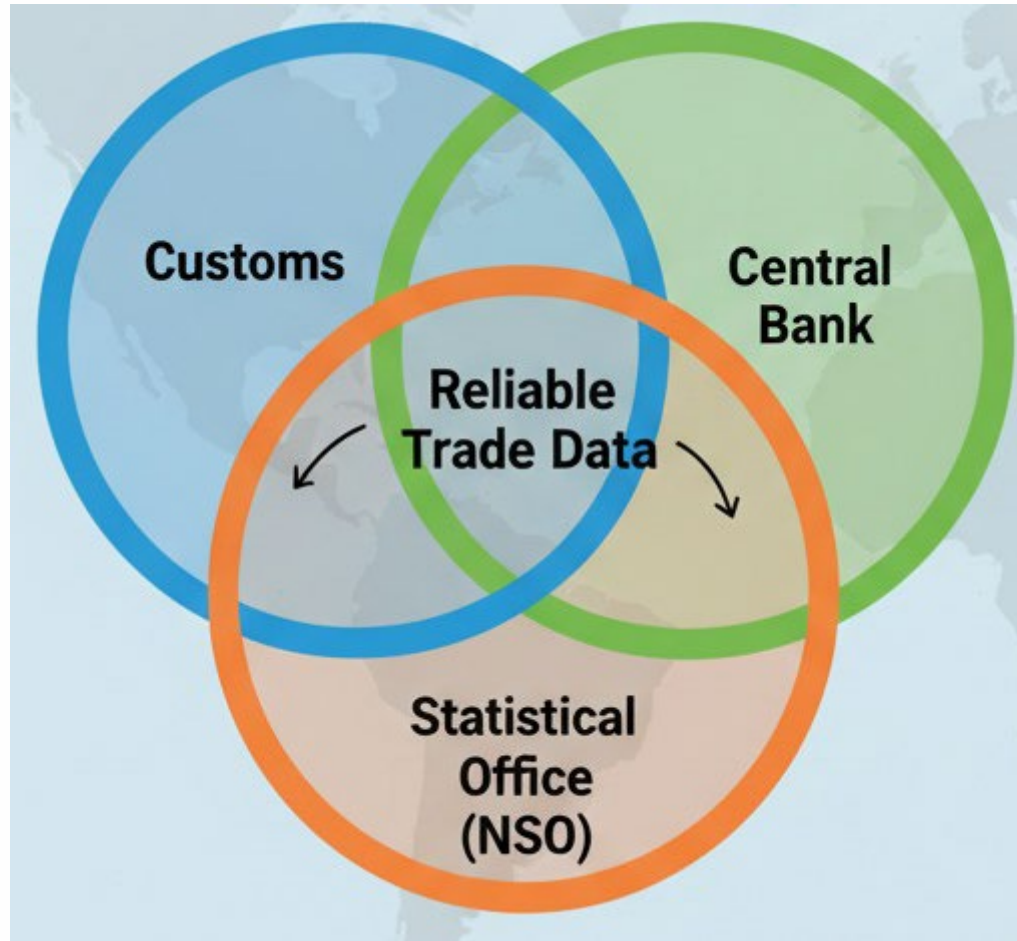| Variable	Import Model		Export Model	
	Coefficient	Std. Error	Coefficient	Std. Error
Textile	1.258***	(0.313)	0.057	(0.337)
COVID-19	-0.230*	(0.111)	-0.060	(0.233)
Consumer goods	-1.107***	(0.199)	-1.185**	(0.457)
Intermediate goods	-0.512**	(0.169)	-0.857**	(0.298)
Medium Duty	0.327*	(0.163)	-0.461	(0.368)
High Duty	0.163	(0.177)	-0.330	(0.370)
Food	0.326	(0.241)	0.152	(0.375)
Constant	3.193***	(0.134)	4.404***	(0.144)
Observations	31,113		2,786	
R-squared	0.099		0.068	
RMSE	7.219		14.0	

Notes: Dependent variables: ln(1 + import/export DIF). Standard errors clustered at HS6 level.

Reference categories: Capital goods (product), Low Duty (tariff).

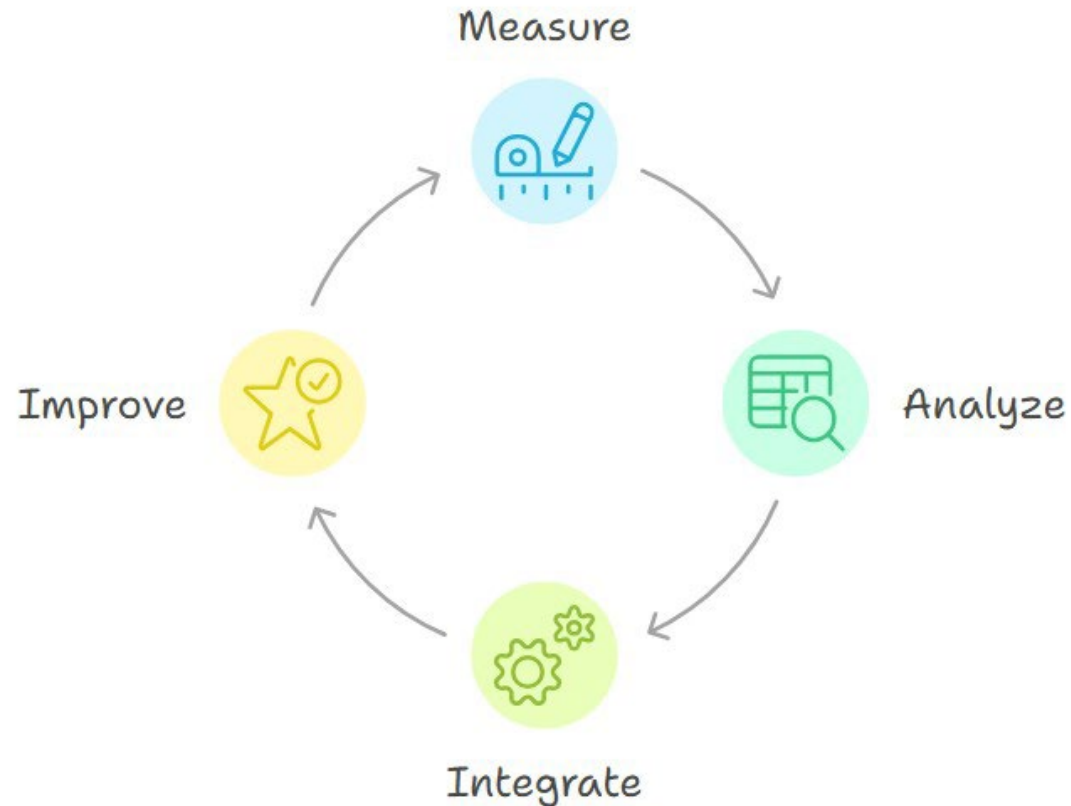All models weighted by trade volume. *** $p<0.001$, ** $p<0.01$, * $p<0.05$

- Textiles: Major source of asymmetry
- COVID Period: Temporarily reduced discrepancies.
- Goods Type: Gaps smaller for consumer & intermediate vs. capital goods.
- Tariffs: Higher gaps for medium-duty vs. low-duty imports.

Policy and Institutional Implications

- **Bilateral Cooperation:** Establish Nepal–India joint review committee & pre-arrival data exchange.

- **Statistical Reform:** Formalize tri-agency (Customs–Central Bank–NSO) data sharing protocols.

- **Banking Data Validation:** Leverage banking-sector payment data as an validation tools.

- **Targeted Enforcement:** Prioritize audits for high-asymmetry sectors

Conclusion and Way Forward

- Trade asymmetries are systematic, not random, and concentrated in key sectors.

- Even modest alignment and bilateral reconciliation can sharpen national accounts and strengthen mutual policy trust.

- Institutionalizing tri-agency cooperation enables routine asymmetry monitoring and integrated reporting.

- Consistency in bilateral statistics builds credibility, enhancing fiscal analysis, macroeconomic coordination, and confidence between Nepal and India.

Thank you

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