

Resilience through Integration?

Industrial Policy and India's Mobile Phone Industry in Global Value Chains

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RIETI-ANU Symposium | 8 October 2026

Session 1: Supply Chain Resilience in an Era of Uncertainty

Industrial Policy (IP) is back, and resilience is a stated goal

4,000+

trade-distorting
industrial policy
measures, Jan 2023
– Jun 2024

500+

new industrial policies
in emerging &
developing
economies, 2023

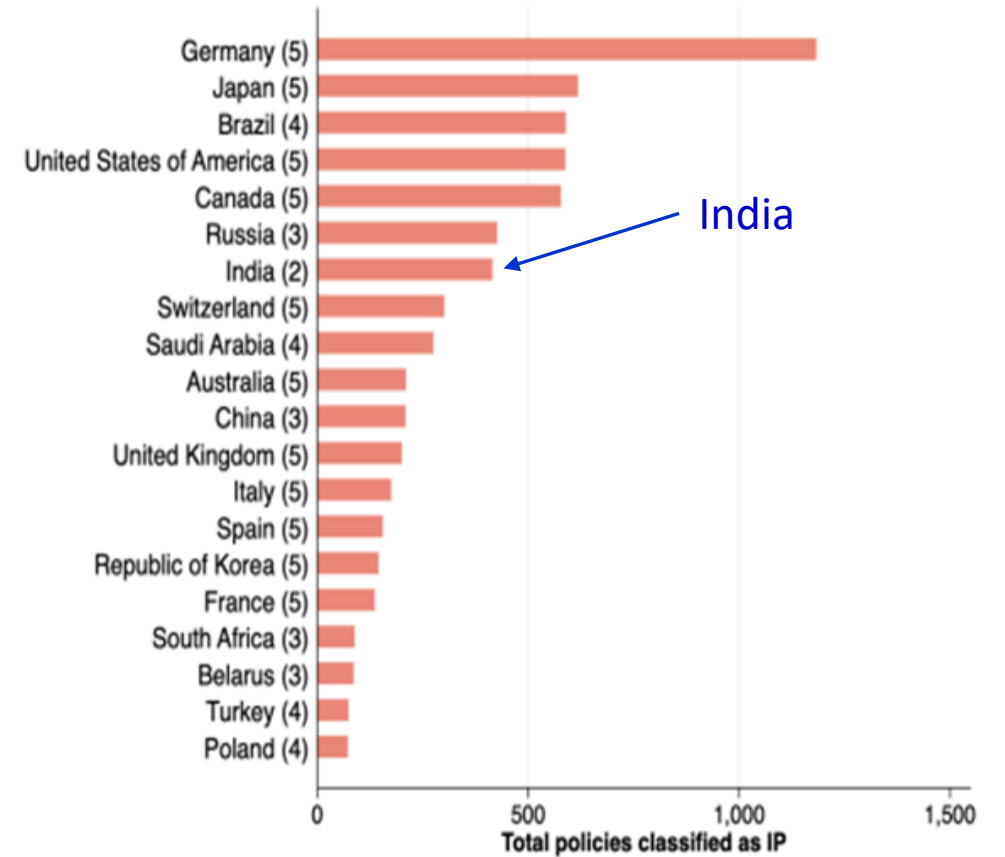
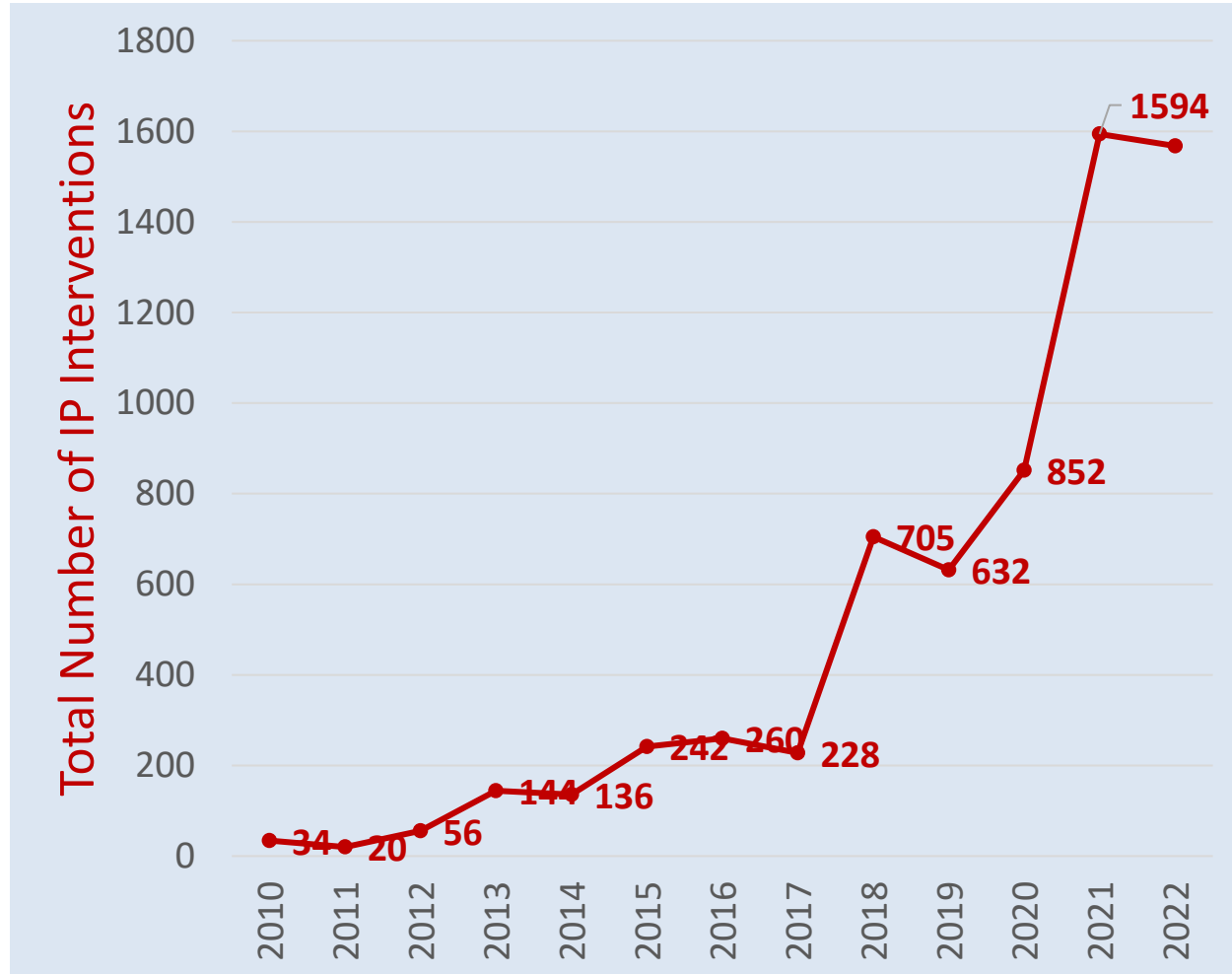
14

sectors covered by
India's PLI schemes

Stated motives: resilience, national security, geopolitics.

Sources: Evenett et al. 2024; Juhász, Lane & Rodrik 2024; World Bank 2024

IP Is Back - Everywhere



(a) Number of IP policies

Source: Juhasz et al (2023) based on textual analysis of the GTA database

IP: Concept, Rationale and Practice

- **Definition**

- Strategic state action directed at changing the structure of the economy

- **Economic rationale**

- IP is justified if markets on their own fail to allocate resources efficiently
- Market failure → infant industry argument, knowledge spillovers, dynamic scale economies, coordination failures, credit market imperfections and informational externalities

- **IP in practice**

- Often associated with factors that are not related to market failures
- Resilience, local value addition, strategic or geopolitical competition, retaliation, national security, technological leadership, good jobs, climate transition, balanced regional development etc

Costs of Misplaced IP

- **Resource misallocation and inefficiency**
- **Rent seeking**
 - Lobbying power of established constituencies is an important determinant of IP (Juhasz et al, 2022; Evenett, et al, 2024)
- **Retaliatory dynamics or tit-for-tat response**
 - Positive correlation between new IP and past IP measures by other countries in the same sectors (Evenett, et al, 2024)
 - A subsidy for a given product by one economy is met with a subsidy for the same product by another within one year (73.8% probability)
- **Trade tensions**
 - Negative spillover effects on trading partners
 - 71 percent of IP in 2023 were trade distorting (Evenett, et al, 2024)
- **“The best industrial policy is none at all.” (Gary Becker, 1985)**

Saving IP from its Advocates

Old IP	New IP in the Era of GVCs
➤ Focus on developing an integrated domestic production structure	✓ Specialization in specific segments of GVCs • Activities where the country has a comparative advantage • India → backward linked GVCs • Assembly of final products for global markets using imported inputs
➤ Protection of domestic markets through high import barriers	✓ Easy and low-cost access to imported intermediate inputs
➤ Building of domestic capacity with the goal of eventually exporting and competing with global MNEs	✓ Exports is not the end goal, but the starting point ✓ Lead firms (MNEs) drive GVCs ✓ IP aims to integrate local firms into GVCs.
➤ Future growth contingent on the industry attaining global competitiveness	✓ Growth strategy revolves around GVC upgrading • Moving into higher-value tasks over time • Development of domestic brands and champions

Two routes to supply chain resilience

Self-reliance

Aim: localise production and inputs

Tools: tariffs, local content rules

Metric: DVA ratio

Risk: high costs, small scale

Integration

Aim: add production locations

Tools: output subsidies, open input imports

Metric: absolute DVA, export scale

Risk: import dependence, low-end lock-in

India's mobile phone policy tried both, in sequence.

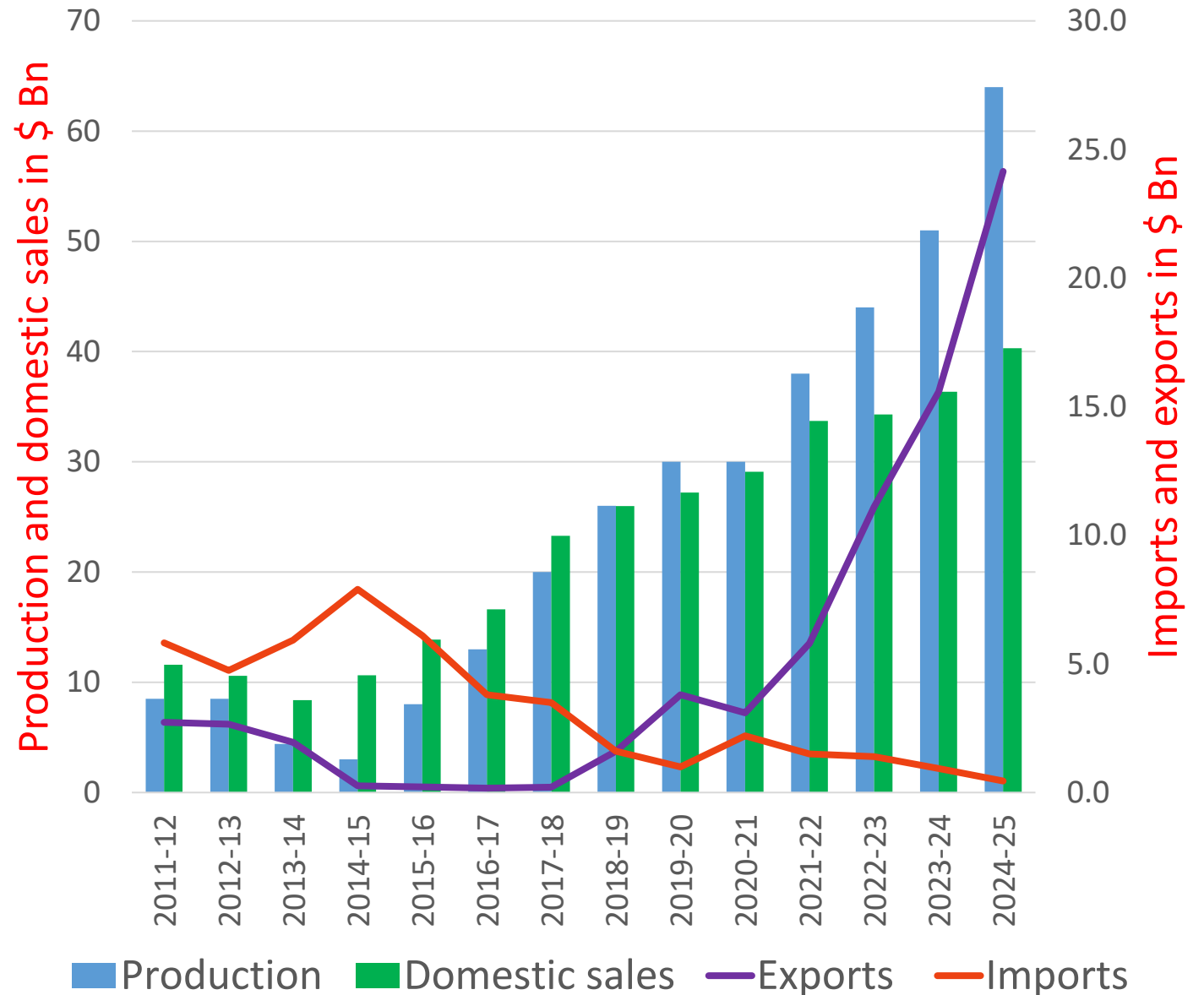
India's Mobile Phone Industry

- **Two phases of growth in India's Mobile phone manufacturing industry**
- **Phase 1 (2016-17 to 2018-19):**
 - Phased Manufacturing Programme (PMP) focused on import substitution
 - Led to growth in assembly and localization of components
 - Aimed at meeting domestic demand, with limited export impact
- **Phase 2 (2019–20 onwards):**
 - Shift to export-oriented strategy under National Policy on Electronics (NPE) 2019 and PLI scheme (2020)
 - Targeted deeper GVC integration and global competitiveness
 - Marked a strategic shift from import substitution to export-led growth

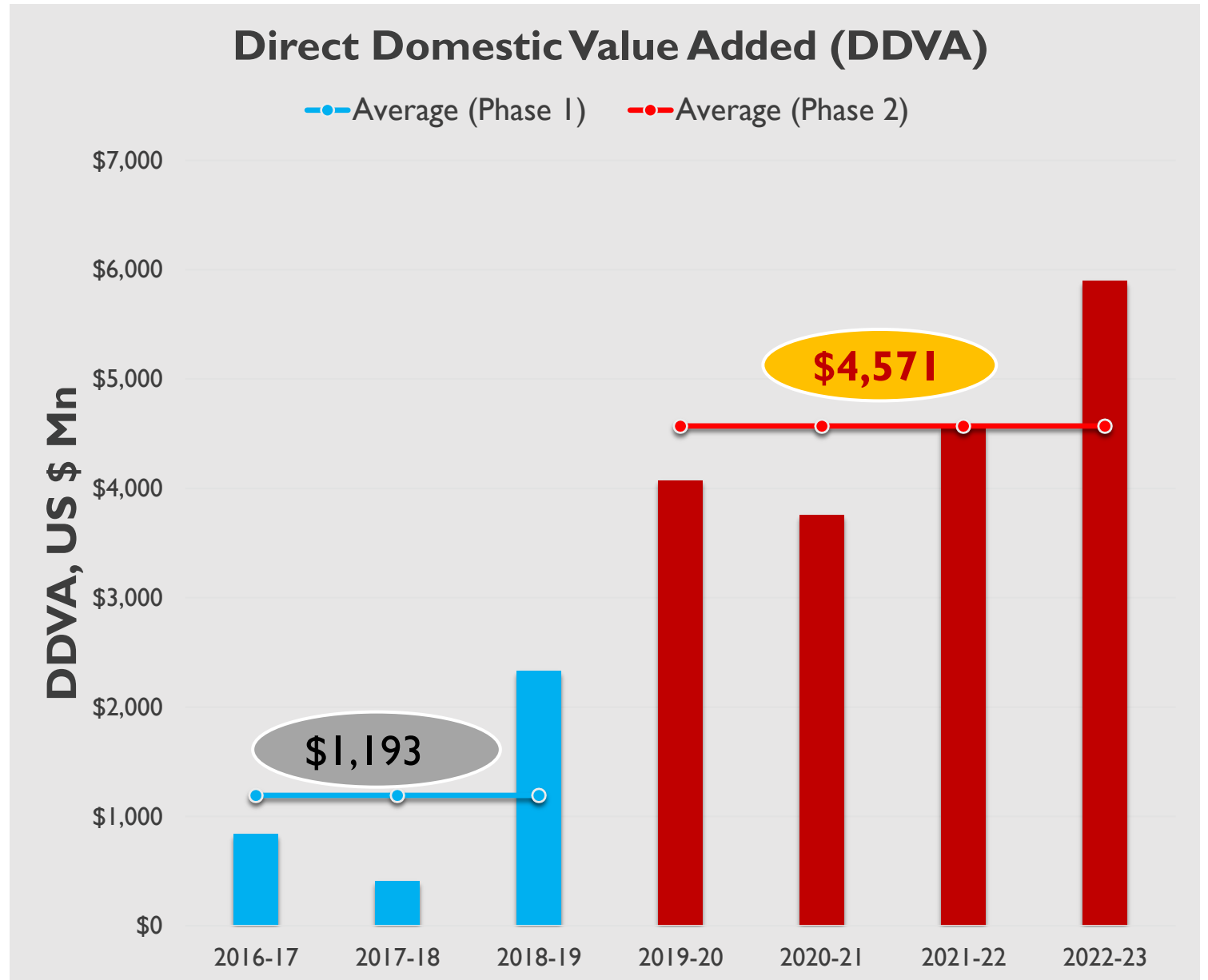
Old Vs New IP: India's Mobile Phone Manufacturing

	Old IP: PMP in 2016	New IP: NPE and PLI in 2019
Objective	✓ To boost domestic production through import substitution.	✓ To position India as a global manufacturing hub, emphasizing integration with GVCs and exports.
Policy instrument	✓ High import tariffs for final mobile phones and components, alongside local content requirements.	✓ Targeted subsidies under the PLI
Key Players	✓ Smaller Indian and Chinese companies.	✓ Lead firms like Apple and Samsung
Outcomes	✓ Domestic production increased to around \$20 billion in 2017. ✓ Exports remained negligible, at just \$0.1 billion.	✓ Second-largest mobile phone producer globally. ✓ Production surged from \$0.26 billion in 2014 to \$60 billion in 2024. ✓ Exports increased from \$334 million in 2017 to \$24.1 billion by 2024. ✓ Sharp decline in imports. ✓ Net exporter of mobile phones since 2018

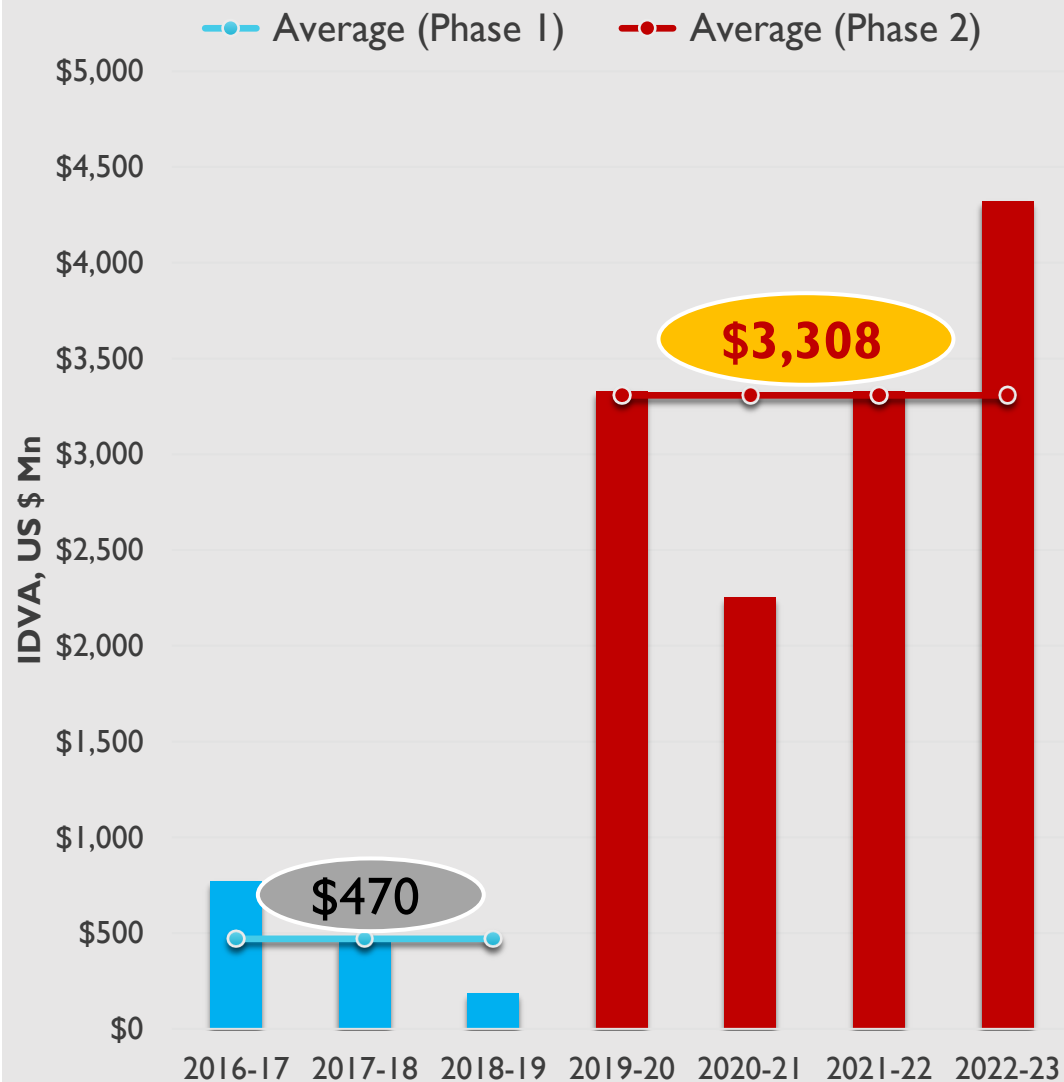
- Mobile phone production increased over 20x between 2014-15 and 2024-25
 - Growth driven primarily by exports - outpaced domestic demand
 - India has emerged as the world's third-largest manufacturing-based exporter
- Imports have declined sharply
- India became a net exporter of mobile phones since 2018-19
- Output and exports held through COVID



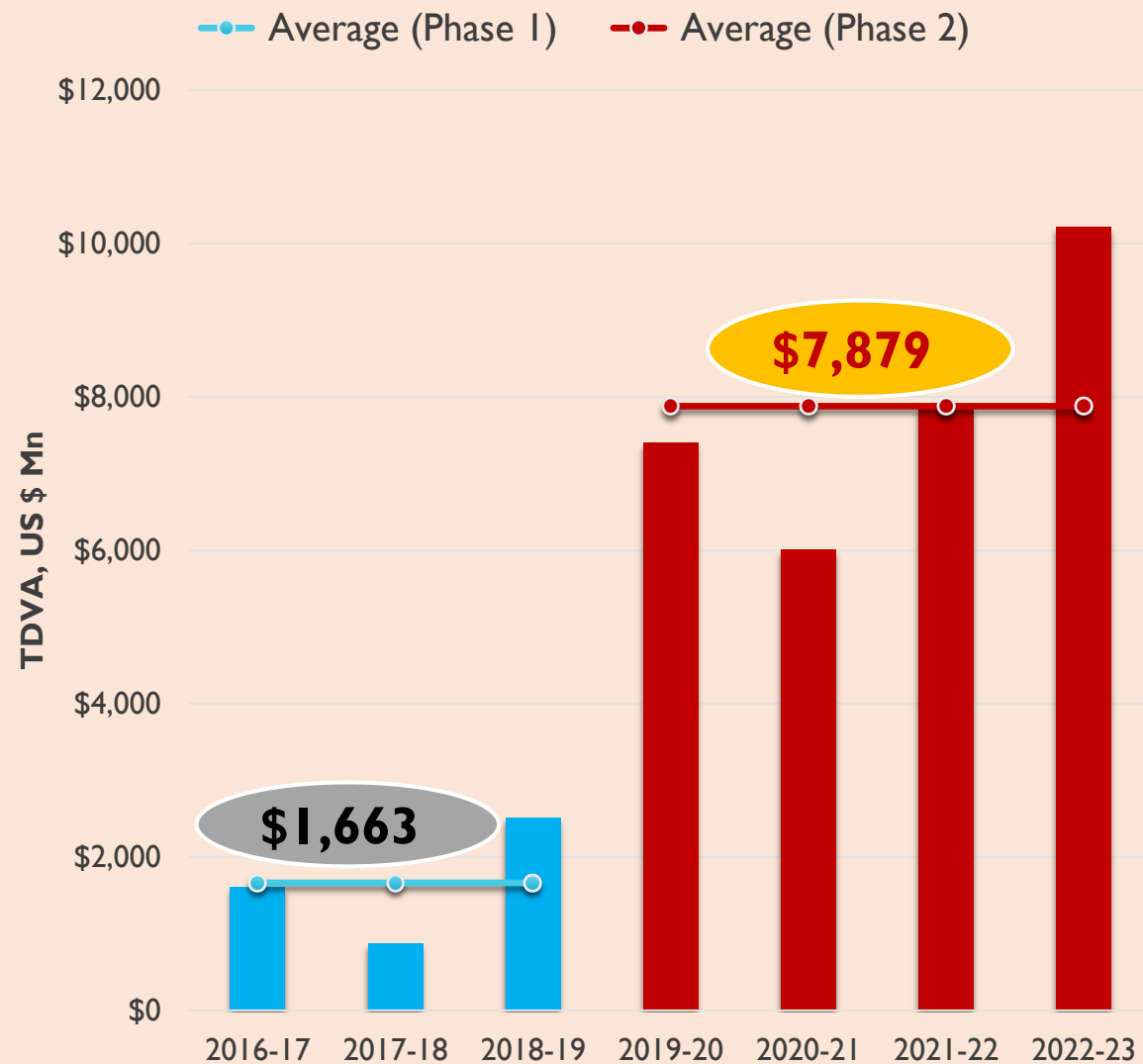
- **Phase 1 (2016–17 to 2018–19)**
 - Focus on import substitution under the PMP
- **Phase 2 (2019–20 to 2022–23):**
 - Shift to GVC driven growth under the National Policy on Electronics 2019 and the PLI scheme



Indirect DVA

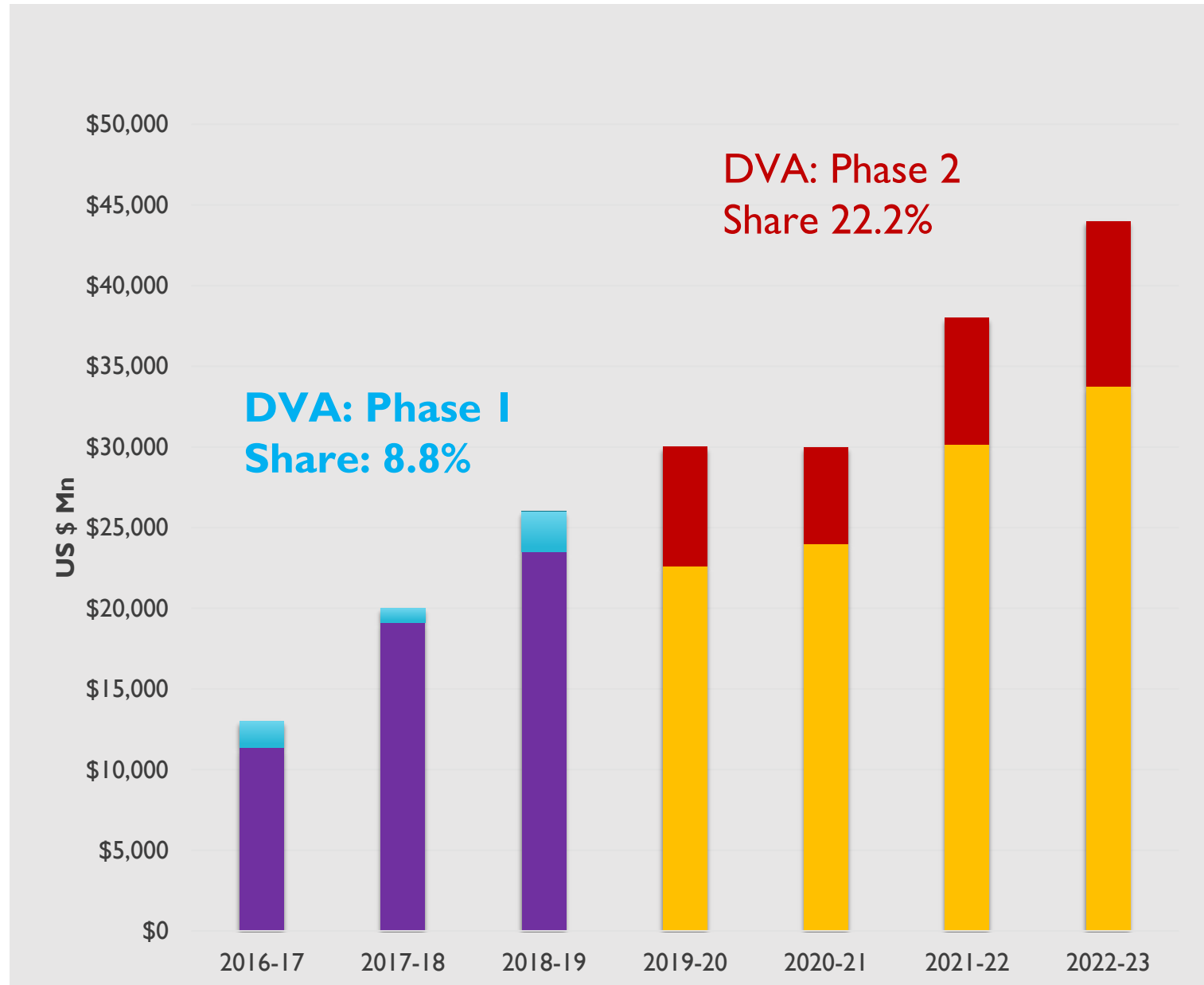


Total DVA

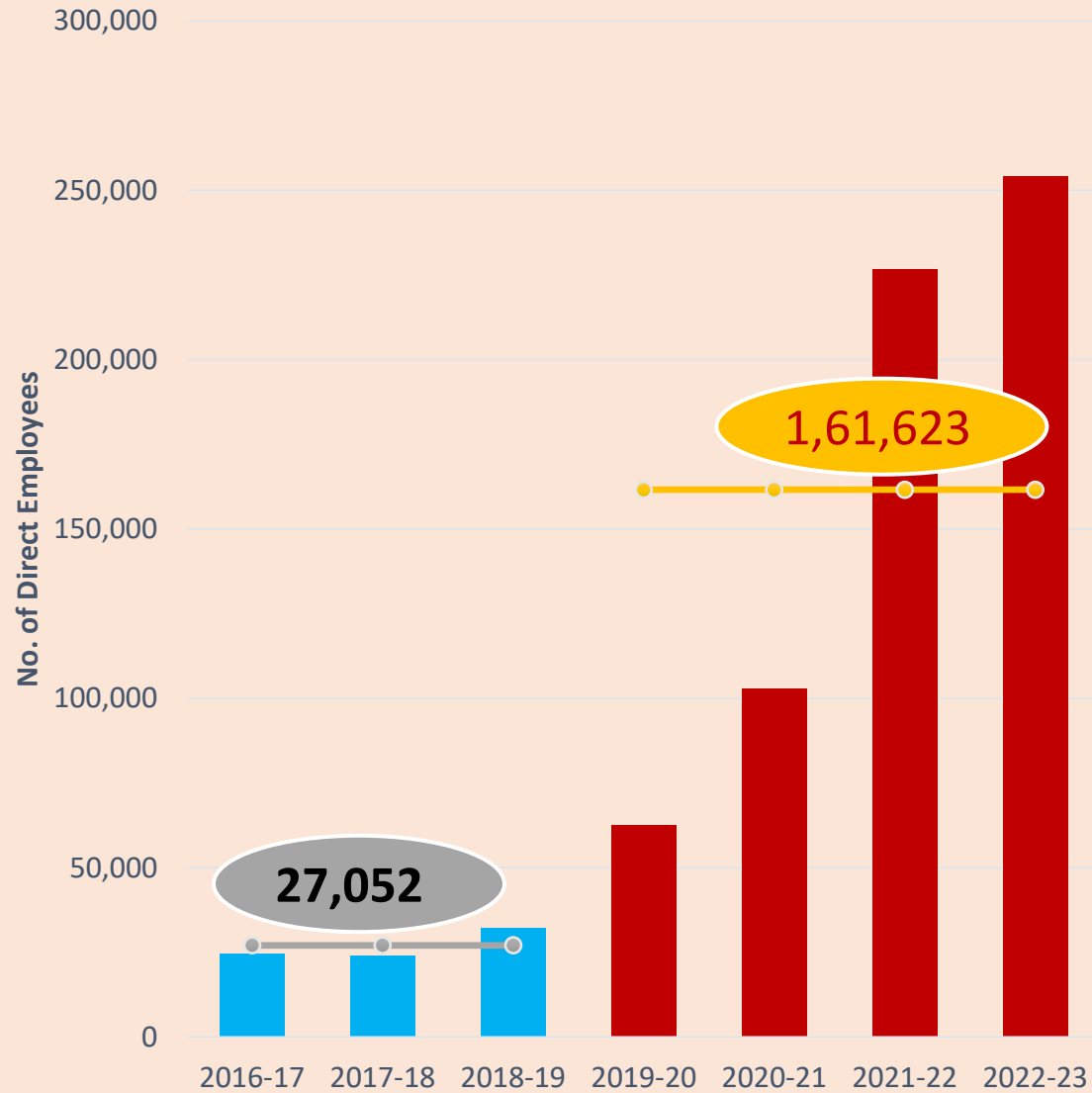


Decomposition of Gross Exports of Mobile Phones into DVA and FVA

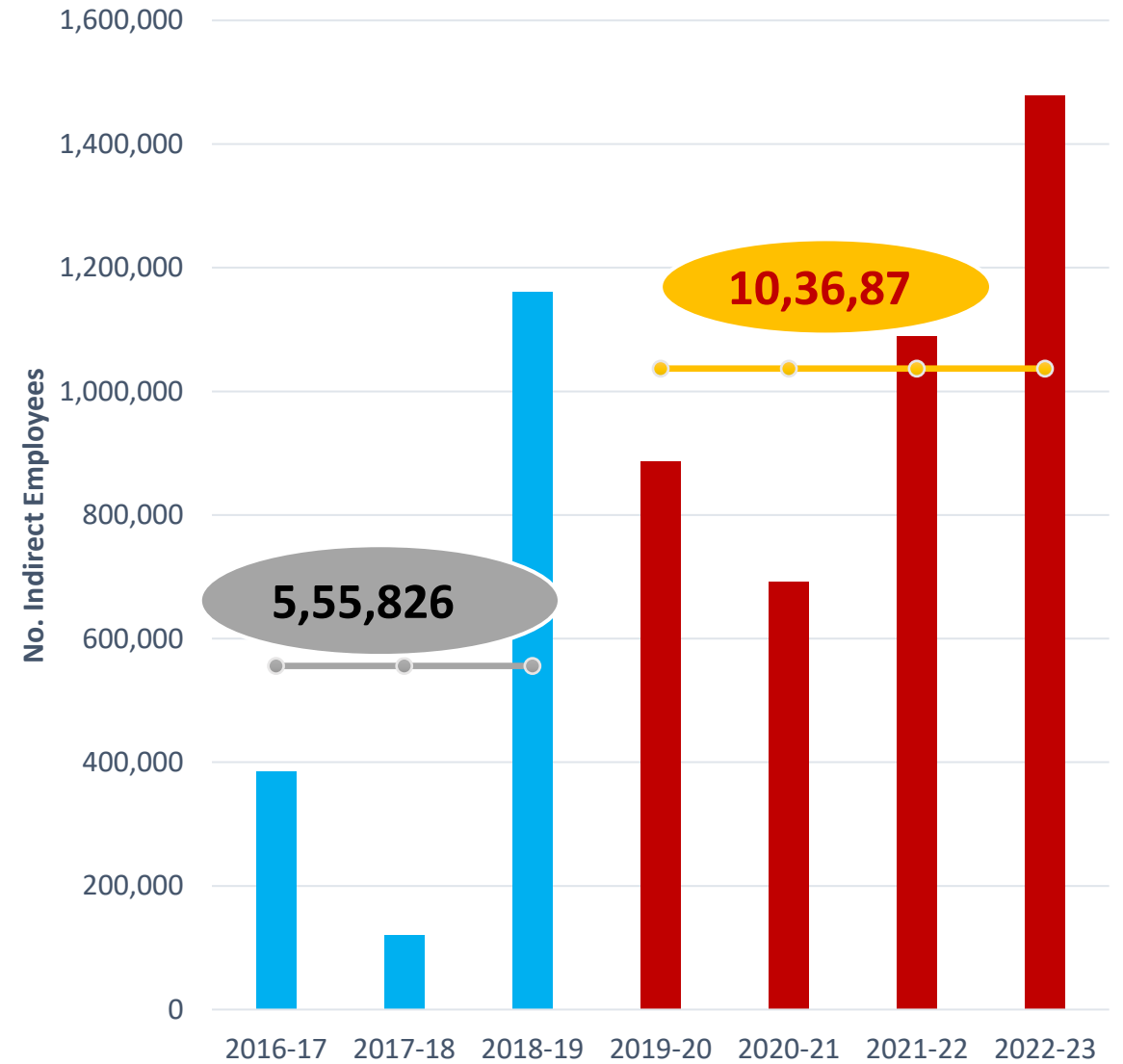
- Gross Value of Output = DVA + FVA
- FVA: value added generated in other countries due to foreign linkages (imports).
- The share of DVA in output increased from an average of 8.8% in Phase 1 to 22.2% in Phase 2



Direct Employment



Indirect Employment



Takeaway: resilience through integration, not autarky

Scale before the DVA ratio: a large, growing absolute DVA creates more jobs and income than a high ratio in a small, protected industry.

- China and Vietnam started with low DVA ratios and scaled first
- Local content rules raise costs, cut exports, and can lower absolute DVA
- Implication: aim to be a large node in diversified GVCs, not a self-sufficient island
- Success in mobile phones provides a blueprint for the broader electronics sector

Thank You

Backup: Estimating DVA, Job Creation & Income Growth

- **Direct effects estimated using:**
 - Plant-level data from the ASI
 - Measures include value added, employment, and wage income
- **Indirect effects captured through:**
 - Construction of Domestic Use Tables (DUTs) using highly disaggregated ASI data
 - DUTs reflect purchases between over 5,000 product sectors (7-digit NPCMS level)
 - Covers the period 2016–17 to 2022–23
- **Technical Coefficient Matrix (TCM):**
 - Derived from DUTs
 - Shows input requirements between product sectors - i.e., technological dependencies
- **Leontief Inverse:**
 - Calculates economy-wide ripple effects of mobile phone production
 - Captures job and income impacts across upstream industries (e.g., sub-assemblies, components)