Resilience through Integration?

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

C. Veeramani
Centre for Development Studies, Thiruvananthapuram

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

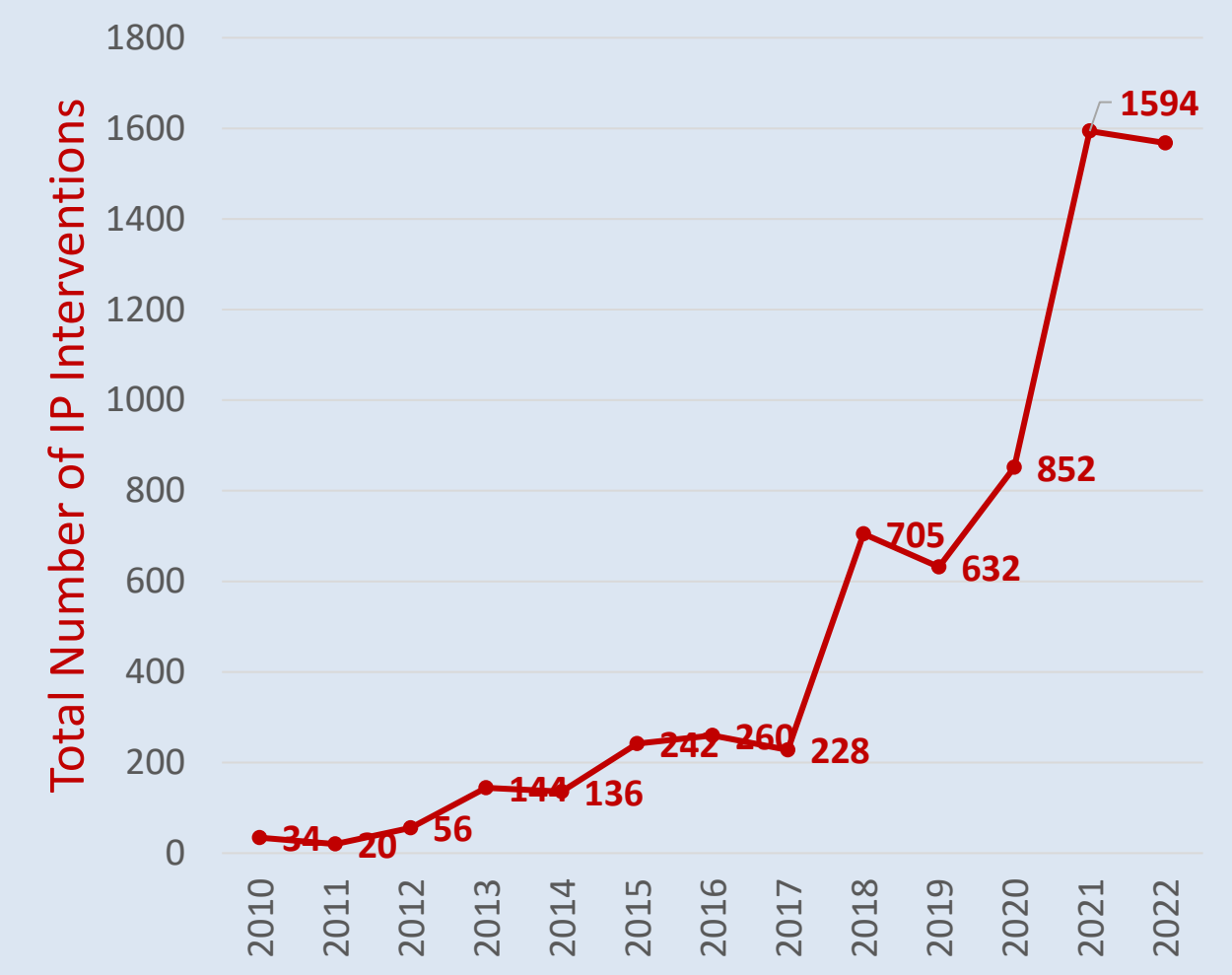
14

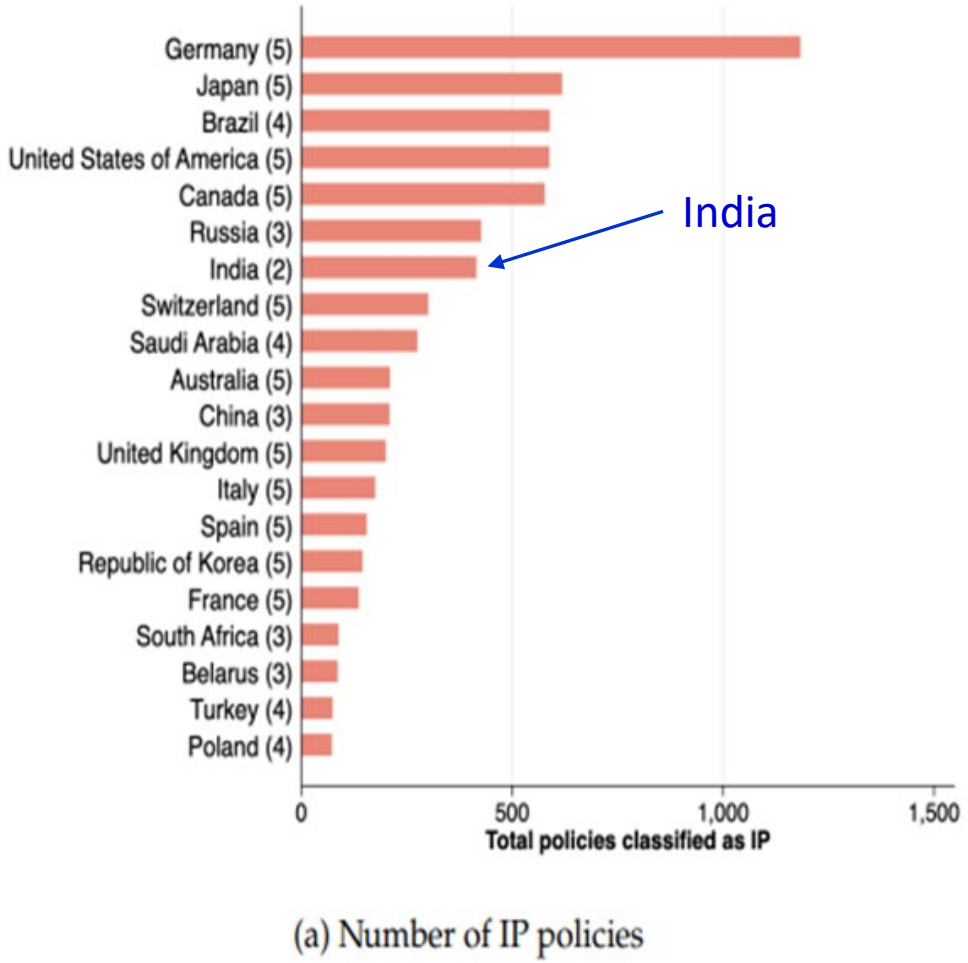
sectors covered by India's PLI schemes

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.

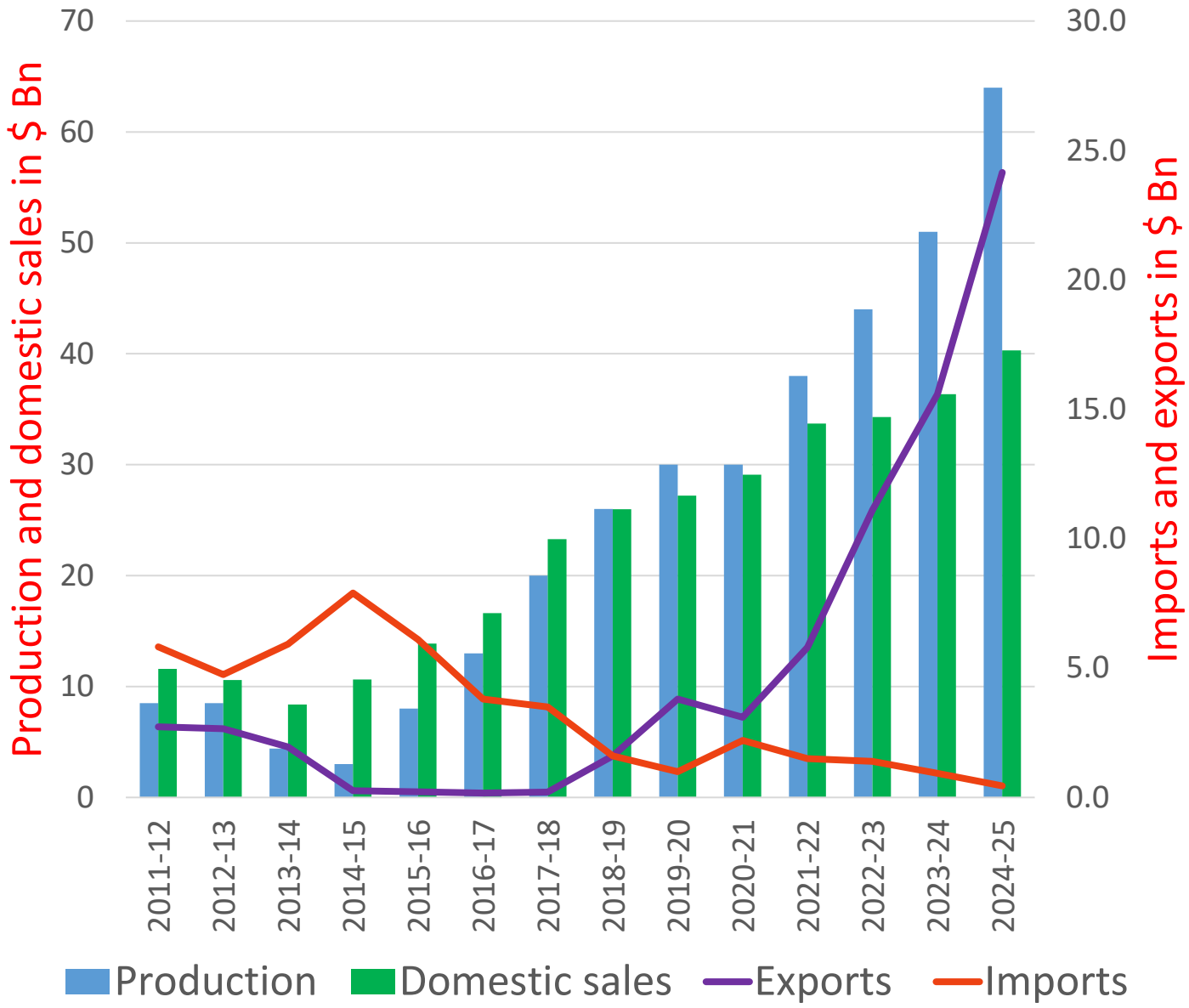
India's Mobile Phone Industry

- **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

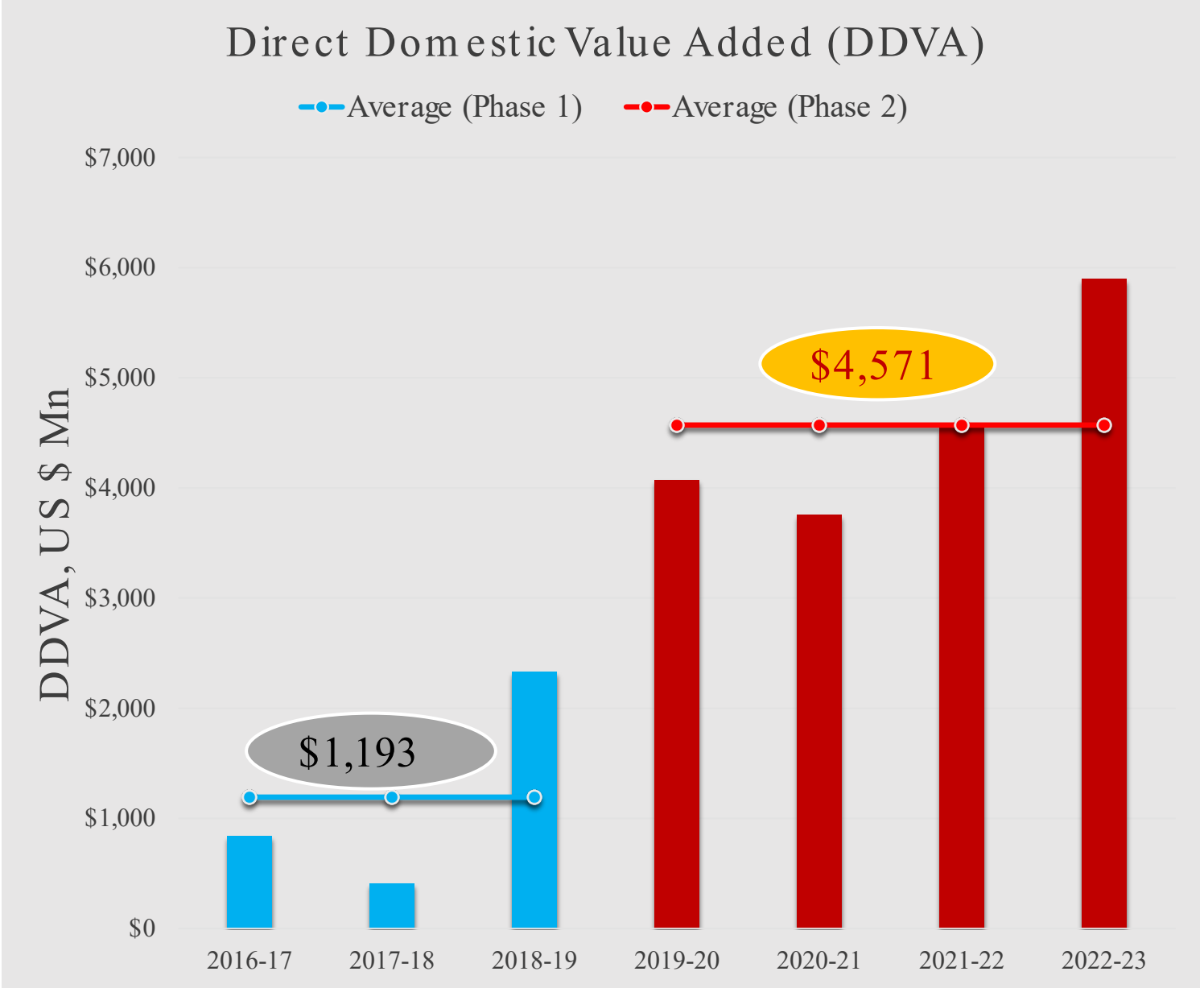
Old Vs New IP: India's Mobile Phone Manufacturing

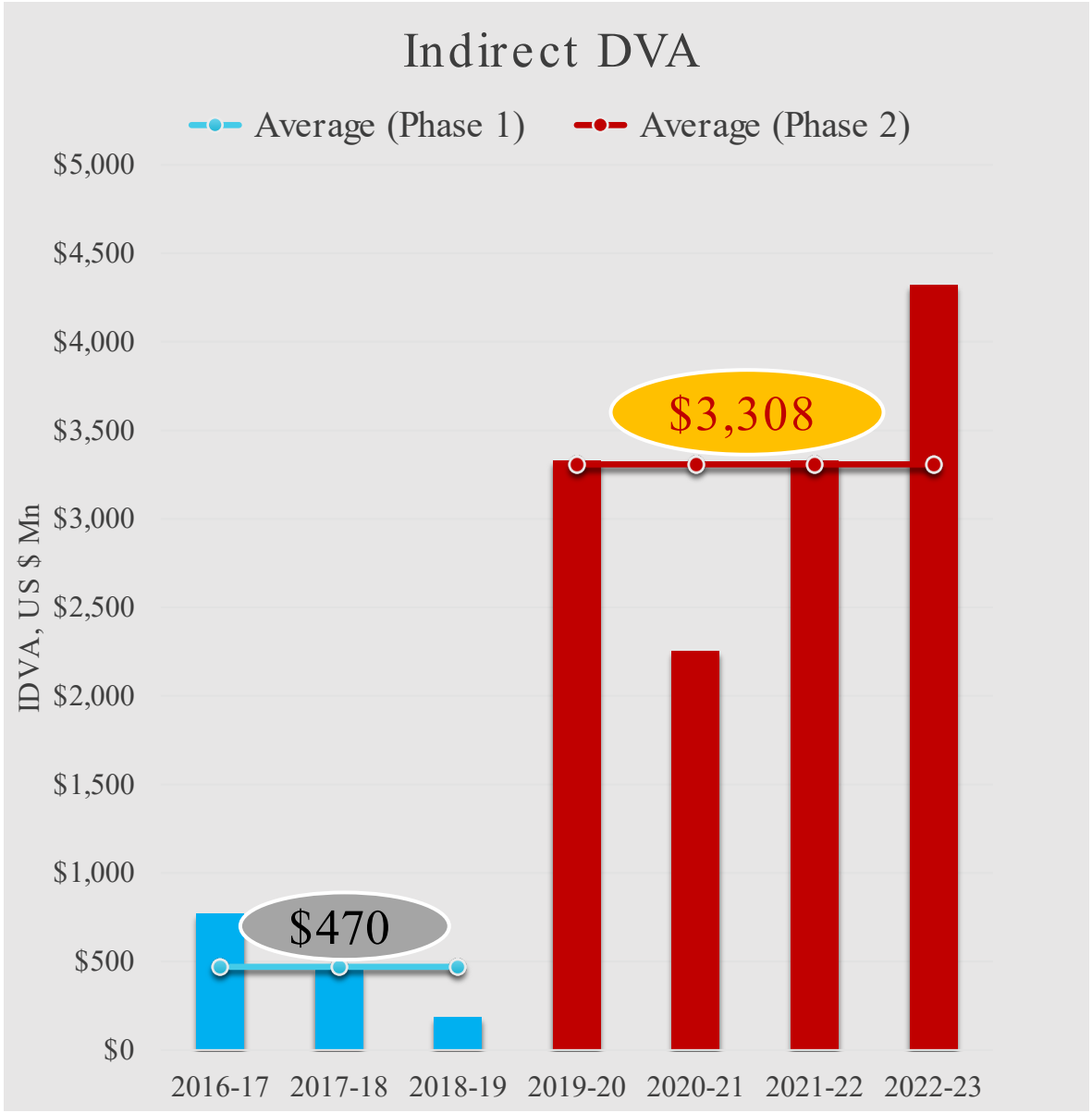
	Old IP: PMP in 2016	New IP: NPE and PLI in 2019
Objective	✓ To boost domestic production through import substitution.	✓ To position India as a global manufacturing hub, emphasizing integration with GVCs and exports.
Policy instrument	✓ High import tariffs for final mobile phones and components, alongside 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

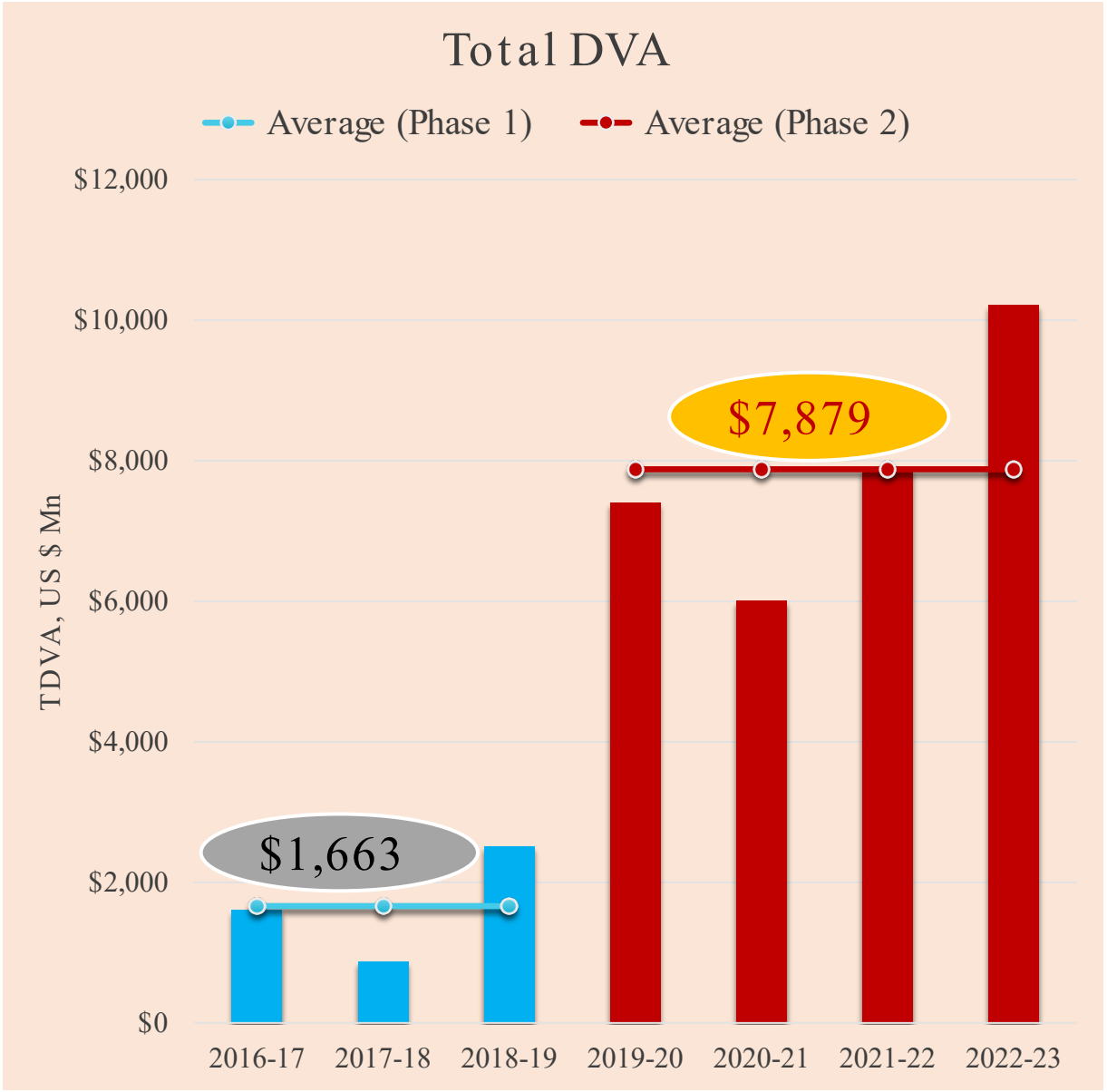
- Mobile phone production increased over 20x between 2014-15 and 2024-25
  - Growth driven primarily by exports - outpaced domestic demand
  - India has emerged as the world's third-largest manufacturing-based exporter
- Imports have declined sharply
- India became a net exporter of mobile phones since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

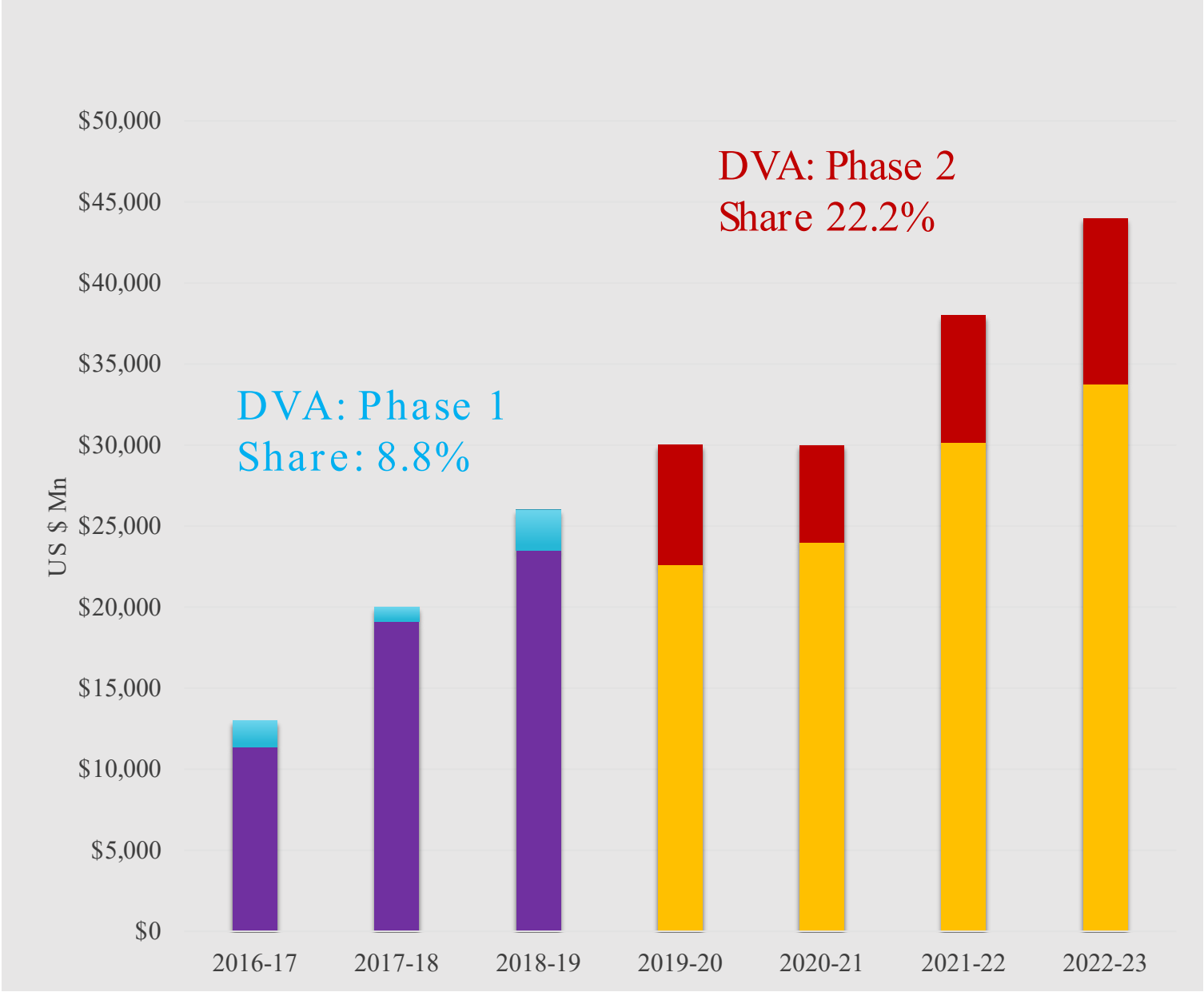



Indirect DVA
Average (Phase 1)
Average (Phase 2)
$5,000
$4,500
$4,000
$3,500
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
IDVA, US $ Mn
$470
$3,308
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23

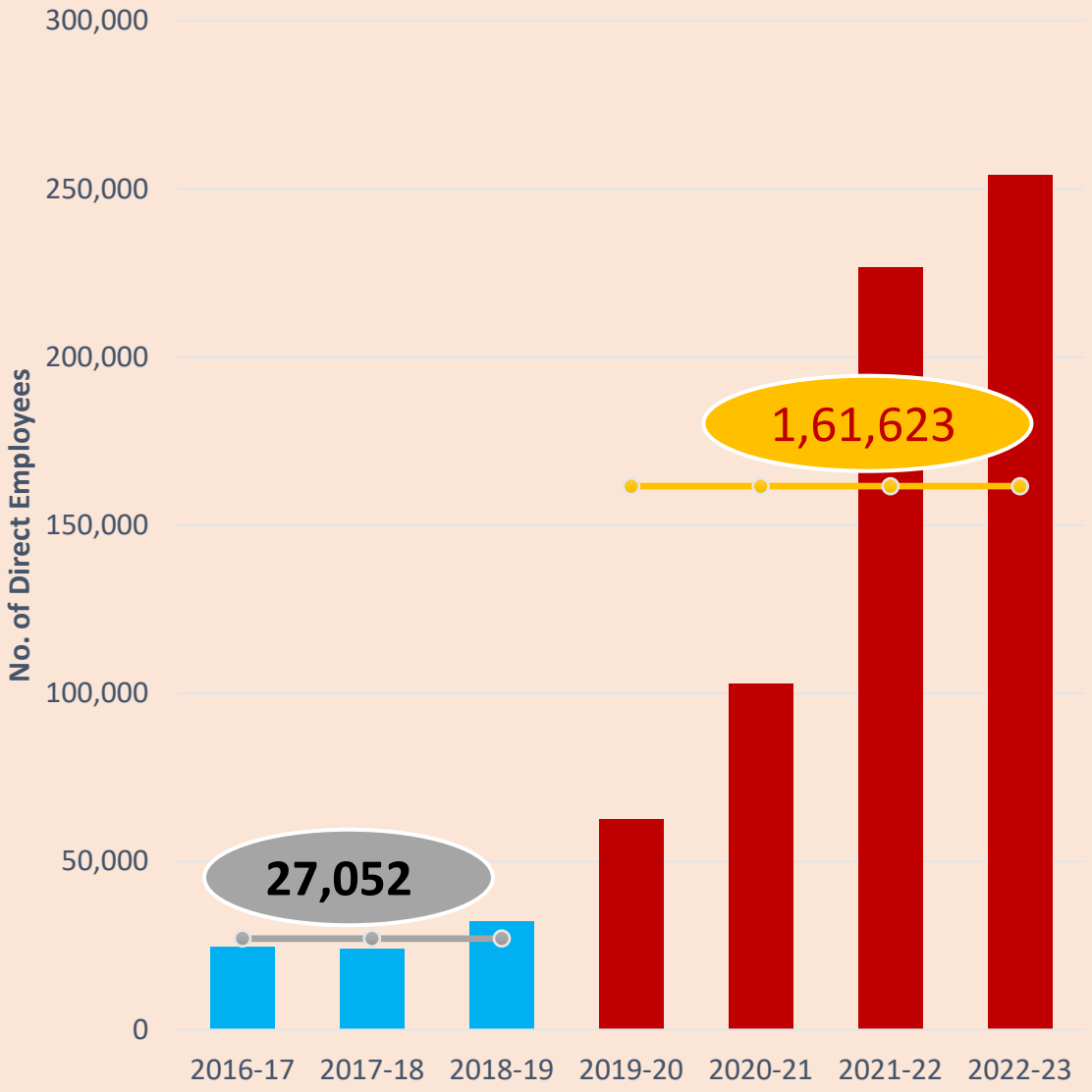

Total DVA
Average (Phase 1)
Average (Phase 2)
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
TDVA, US $ Mn
$1,663
$7,879
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23

Decomposition of Gross Exports of Mobile Phones into DVA and FVA

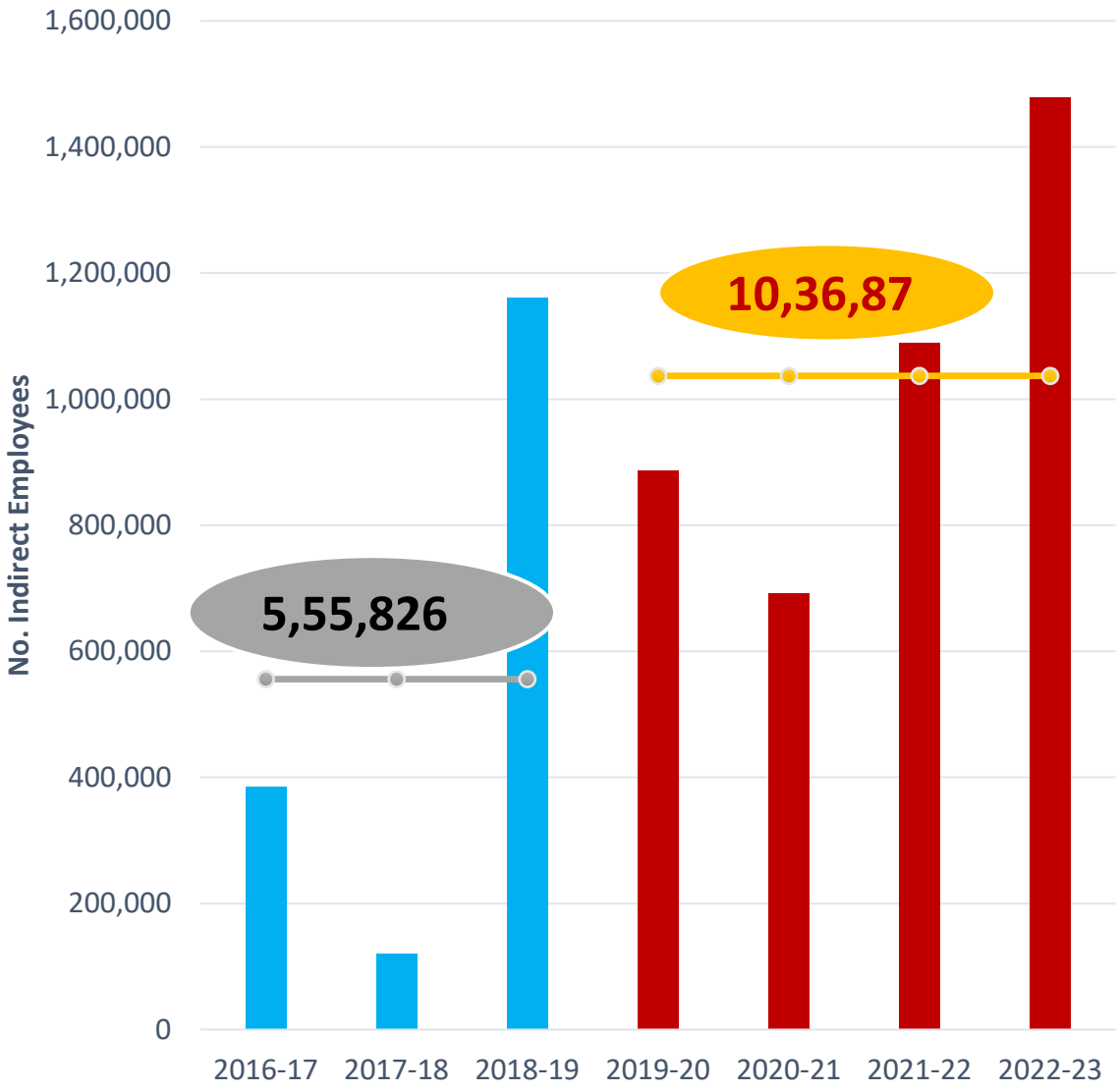
- Gross Value of Output = DVA + FVA
- FVA: value added generated in other countries due to foreign linkages (imports).
- The share of DVA in output increased from an average of 8.8% in Phase 1 to 22.2% in Phase 2



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)