APPSC GROUP-I MAINS — STUDY NOTES

LOW GROWTH IN MANUFACTURING

Make in India • PLI • MSMEs • Semiconductors • Industrial Corridors

Paper IV — Economy & Development | Day 4 (02 Apr 2026)

SECTION 1: SUMMARISED NOTES

1.1 India's Manufacturing Deficit

Manufacturing is the missing engine of India's growth story. Services drive GDP (53.6% share) and agriculture employs the majority, but manufacturing has stagnated at ~17% of GDP for decades — far below the 25% target set by Make in India (2014). This matters because manufacturing alone can simultaneously deliver: mass employment (absorbing agricultural labour), export competitiveness, technology upgrading, and inclusive growth (factory jobs require less education than IT services). East Asian economies industrialised by moving workers from farms to factories; India largely bypassed this step, leaving millions trapped in low-productivity informal work.

The Economic Survey 2025-26 shows signs of recovery: manufacturing GVA grew 7.72% (Q1) and 9.13% (Q2) in FY26; medium and high-technology now accounts for 46% of manufacturing value added; and PLI schemes have attracted ₹2.0 lakh crore of investment and 12.6 lakh jobs. But the structural share remains stuck at ~17%.

1.2 Why Manufacturing Matters — The Jobs Argument

India needs to create productive jobs for ~1 crore new entrants annually, with the demographic dividend peaking around 2030. Services create high-value but fewer jobs per unit of investment. Agriculture is oversaturated at 42% workforce for <18% GDP. Manufacturing is the only sector that can provide mass employment at moderate skill levels. The ASI for FY24 showed 6% YoY increase in manufacturing employment — over 10 lakh additional jobs. PLI generated 12.6 lakh jobs. But India needs 8-10 crore new manufacturing jobs this decade.

1.3 Causes of Low Manufacturing Growth

1.3.1 Land Acquisition Complexity

The RFCTLARR Act 2013 introduced extensive consent and social impact assessment requirements, dramatically increasing time and cost of industrial land assembly. Vietnam acquired land for Samsung's factory in months; India's equivalent projects take years. States have created industrial parks and land banks as workarounds, but the fundamental challenge persists.

1.3.2 Labour Law Rigidity

India historically had 44 central and ~100 state labour laws. The 2019-20 consolidation into 4 Labour Codes (Wages, Industrial Relations, Social Security, Occupational Safety) was significant reform — raised retrenchment threshold to 300 workers (from 100), recognised gig workers, and simplified compliance. However, most states have not notified rules, so old laws effectively continue. The compliance burden discourages firms from scaling beyond the MSME threshold.

1.3.3 Infrastructure & Logistics Costs

Despite massive progress — NHs expanded ~60% (91,287 to 1,46,572 km), airports 74→164, power capacity 509.74 GW, rail 99.1% electrified, Centre's capex increased 4.2x to ₹11.21 lakh crore (FY26 BE) — logistics costs at ~14% of GDP remain nearly double developed economies (~8%). PM Gati Shakti coordinates 16+ ministries for multimodal logistics. India ranked 4th globally in Greenfield investment announcements (2024), but converting announcements to operational factories requires reliable last-mile infrastructure.

1.3.4 Low R&D Investment

India's R&D at 0.64% of GDP is one-quarter of China's (2.4%) and one-seventh of Israel's (4.9%). Business R&D share at 41% (vs China's 77%) means innovation is government-dependent. Without R&D, manufacturing stays confined to low-value assembly rather than high-value design. The Economic Survey explicitly calls for India to shift 'from import substitution to scale, competitiveness, innovation, and deeper integration into global value chains.'

1.3.5 MSME Fragility

MSMEs are India's manufacturing backbone: ~30% of GDP, ~45% of manufacturing output, ~48% of exports. But 93% are micro-enterprises with limited technology. PMMY (Mudra Yojana) has disbursed ₹36.18 lakh crore across 55.45 crore loan accounts, but the average loan size (~₹60,000) is too small for manufacturing investment. Demonetisation and GST transition devastated many MSMEs. The sector needs technology upgradation, formal credit access, and global value chain integration.

1.3.6 Chinese Import Dependence

India imports ~$100+ billion annually from China, mostly intermediate goods for electronics, pharma, and engineering. The India Semiconductor Mission (₹1.60 lakh crore, 10 projects, 6 states) and PLI schemes aim to build domestic capacity. The Economic Survey's 'Disciplined Swadeshi' 3-tier framework addresses this: Tier 1 (critical: semiconductors, rare earths), Tier 2 (feasible: pharma, defence), Tier 3 (gradual transition). Strategic, not blanket, indigenisation.

1.4 Policy Response — National

- **Make in India (2014):** Aimed at 25% GDP from manufacturing. Liberalised FDI in 25 sectors. India's EODB ranking rose from 142nd to 63rd. But 25% target remains unmet.
- **PLI (14 sectors):** ₹2.0 lakh crore invested; ₹18.7 lakh crore production; 12.6 lakh jobs. Sectors: mobiles, electronics, pharma, textiles, auto, white goods, steel, telecom, solar PV, batteries, drones, medical devices, food processing, semiconductors. Mobile manufacturing is standout success — India went from importing 78% (2014) to manufacturing 98% domestically.
- **Semiconductor Mission:** 10 projects, 6 states, ~₹1.60 lakh crore. Building chip fabrication and packaging capacity. Critical for electronics, defence, automotive, AI.
- **Labour Codes (2019-20):** 4 codes replacing 44 laws. Retrenchment threshold raised to 300. Gig workers recognised. But implementation pending in most states.
- **Infrastructure Push:** NIP ₹111L Cr; capex 4.2x increase; PM Gati Shakti; NHs +60%; Airports 74→164; rail electrification 99.1%.
- **Disciplined Swadeshi:** 3-tier framework: self-reliance → strategic resilience → strategic indispensability.
- **MSME Support:** PMMY ₹36.18L Cr; Credit Guarantee Scheme; Udyam registration portal (simplified); Emergency Credit Line (ECLGS) during COVID.

1.5 AP as Case Study

AP's manufacturing contributes ~11% to GSDP (AP Survey 2024-25). Industry GVA growth has been volatile: from -0.41% (2019-20) to +18.86% (2020-21). Post-bifurcation, AP lost Hyderabad's industrial clusters but has distinct advantages:

- **Coastline & Ports:** 3rd longest coastline; 6 operational ports (Visakhapatnam, Krishnapatnam, Kakinada, Gangavaram).
- **Industrial Corridors:** VCIC (Vizag-Chennai), Chennai-Bangalore corridor. Part of national industrial corridor programme.
- **SIPB:** 8 mega projects, ₹2,45,275 crore committed, 65,541 jobs expected.
- **6 New Policies (2024-29):** Industrial Development 4.0, MSME 4.0, Food Processing 4.0, Electronics Manufacturing, EV & Sustainable Mobility, Plug & Play Industrial Parks.
- **Sector Focus:** Sustenance sectors (auto, pharma, chemicals, textiles) + Propelling sectors (aerospace, defence, EVs, semiconductors, green energy, shipbuilding).
- **Swarna Andhra 2047:** $2.4 trillion GSDP target requiring 15% annual growth — impossible without manufacturing transformation.

Challenge: AP's MSME profile shifted post-bifurcation towards capital-intensive industries. Capital city delays and skill gaps constrain growth. The Google $15B data centre in Vizag signals services-tech potential but manufacturing needs parallel acceleration.

SECTION 2: KEY DIMENSIONS TO COVER

Examiner angles.

1. **The 17% Stagnation:** Why manufacturing's GDP share hasn't moved. India ~17% vs China 27%, Vietnam 25%. Root causes are structural, not cyclical.
2. **Employment Imperative:** Manufacturing = only route to mass jobs at moderate skills. Demographic dividend peaks ~2030. Services can't substitute.
3. **PLI Assessment:** ₹2L Cr invested, 12.6L jobs. Mobiles = success story. But is fiscal incentive-driven growth sustainable? Bridge vs destination.
4. **Semiconductor Sovereignty:** ₹1.60L Cr, 10 projects. Chips = 'oil of 21st century.' Strategic vulnerability.
5. **MSME Backbone:** 30% GDP, 45% manufacturing, 48% exports. But 93% micro. Credit, technology, compliance gaps.
6. **Labour Codes:** 44 laws → 4 codes. But implementation pending. Impact on formalisation.
7. **China+1 Opportunity:** Post-COVID supply chain restructuring. India's chance to attract relocating manufacturing.
8. **Disciplined Swadeshi:** 3-tier framework. Not blanket protectionism but strategic indigenisation.
9. **AP Case:** 11% GSDP. SIPB ₹2.45L Cr. 6 policies (4.0 series). VCIC. Post-bifurcation challenges.

SECTION 3: PRELIMS MUST-REMEMBER FACTS

Crisp factual points.

1. Manufacturing share: ~17% of GDP. Make in India target: 25%. Never achieved. China: 27%; Vietnam: 25%.
2. Manufacturing GVA FY26: Q1 = 7.72%; Q2 = 9.13%. Medium & high-tech = 46% of value added. (Eco Survey)
3. PLI: 14 sectors; ₹2.0L Cr invested; ₹18.7L Cr production; 12.6L jobs (Sep 2025). (Eco Survey)
4. Mobile manufacturing: India went from importing 78% (2014) to manufacturing 98% domestically. PLI standout.
5. Semiconductor Mission: 10 projects, 6 states, ~₹1.60L Cr investment. (Eco Survey)
6. MSMEs: ~30% GDP; ~45% manufacturing output; ~48% exports. PMMY: ₹36.18L Cr / 55.45 Cr accounts. (Eco Survey)
7. ASI FY24: 6% YoY manufacturing employment increase = 10L+ new formal manufacturing jobs. (Eco Survey)
8. R&D: India 0.64% GDP vs China 2.4%, Israel 4.9%, S. Korea 4.8%. Business R&D: India 41% vs China 77%. (Eco Survey)
9. Infrastructure: NHs +60% (1,46,572 km); Airports 74→164; Power 509.74 GW; Rail 99.1% electrified. Logistics ~14% GDP. (Eco Survey)
10. Centre capex: 4.2x increase — ₹2.63L Cr (FY18) to ₹11.21L Cr (FY26 BE). Effective capex: ₹15.48L Cr. (Eco Survey)
11. Labour Codes: 4 codes (Wages, IR, SS, OSH). Retrenchment threshold: 300 workers. Gig workers recognised. Most states pending.
12. GII: 38th (2025), up from 66th (2019). India 4th globally in Greenfield investment announcements (2024). (Eco Survey)
13. Disciplined Swadeshi: 3-tier — Tier 1 (semiconductors, rare earths), Tier 2 (pharma, defence), Tier 3 (gradual). (Eco Survey)
14. AP: Manufacturing ~11% GSDP. Industry GVA growth 2024-25: 6.58%. Range: -0.41% (2019-20) to +18.86% (2020-21). (AP Survey)
15. AP SIPB: 8 mega projects, ₹2,45,275 Cr committed, 65,541 jobs. 3rd longest coastline, 6 ports. (AP Survey)
16. AP: 6 new policies (2024-29). VCIC + Chennai-Bangalore corridor. Swarna Andhra 2047 = $2.4T target. (AP Survey)

SECTION 4: MAINS MUST-WRITE POINTS

Each can form a paragraph.

1. **The 17% Trap:** India's manufacturing share has stagnated at ~17% of GDP for two decades despite Make in India, PLI, and massive infrastructure spend. China maintains 27%; Vietnam 25%; even Bangladesh 21%. This reflects deep structural barriers: land acquisition complexity (RFCTLARR Act), labour law rigidity (44 laws, 4 codes pending), logistics costs (~14% GDP vs 8% in developed countries), R&D deficit (0.64% GDP), and MSME fragility (93% micro-enterprises). Moving from 17% to 25% would require manufacturing to grow at 12-14% annually for a decade — demanding fundamental reforms, not incremental policies.
2. **PLI — Bridge or Destination?:** PLI across 14 sectors is India's most ambitious industrial policy since liberalisation. Results are promising: ₹2 lakh crore investment, ₹18.7 lakh crore production, 12.6 lakh jobs. Mobile manufacturing is the standout — India went from importing 78% of phones (2014) to manufacturing 98% domestically. But PLI raises fundamental questions: Are we creating genuine competitiveness or subsidised assembly? Will firms stay after incentives expire? The Economic Survey's answer — shift from import substitution to innovation and global integration — suggests PLI should be a bridge to self-sustaining competitiveness, not a permanent crutch.
3. **Semiconductor Sovereignty:** The Semiconductor Mission (₹1.60 lakh crore, 10 projects) addresses India's most critical strategic vulnerability. Chips are the 'oil of the 21st century' — essential for everything from smartphones to missiles to AI. India's total dependence on imported chips (Taiwan, South Korea) creates both economic and national security risks. The Economic Survey's 'Disciplined Swadeshi' places semiconductors in Tier 1 (highest strategic urgency). Success would fundamentally transform India's industrial structure.
4. **MSMEs — The Real Manufacturing India:** India's manufacturing is fundamentally an MSME story: ~45% of output, ~48% of exports. But MSMEs are fragile: 93% micro-enterprises with limited technology, informal employment, and precarious finances. PMMY disbursed ₹36.18 lakh crore, but average loan (~₹60,000) is too small for real manufacturing investment. The sector needs: technology upgradation (cluster development, common facilities), formal credit access, and integration into global value chains — not just survival support.
5. **China+1 — Historic Window:** Post-COVID, multinationals are diversifying manufacturing from China due to geopolitical risks and rising costs. Vietnam, Mexico, and India are competing for this 'China+1' opportunity. Apple's expanding Indian supply chain (PLI-driven) is the most visible example. But India competes with countries that offer faster land acquisition, simpler labour laws, and lower logistics costs. The window is narrow: if India doesn't capture relocating manufacturing in this decade, it will go permanently to Vietnam, Indonesia, or Bangladesh.
6. **Labour Code Reform — The Unfinished Revolution:** Consolidating 44 central labour laws into 4 codes was bold reform. But with most states yet to notify implementation rules, the old regime effectively continues. The retrenchment threshold increase (100 to 300 workers) should encourage firm scaling; gig worker recognition reflects modern realities; and social security portability supports labour mobility. Full implementation is essential — every year of delay is a year of lost manufacturing jobs.
7. **AP's Manufacturing Ambition:** AP's 11% manufacturing share of GSDP reflects the post-bifurcation challenge — Hyderabad's industrial clusters went to Telangana. But AP has

natural advantages: 3rd longest coastline with 6 ports (maritime trade access), VCIC industrial corridor, abundant power, and competitive labour costs. The SIPB's ₹2,45,275 crore committed investment and 6 new industrial policies (4.0 series) signal ambition. The Swarna Andhra 2047 target of $2.4 trillion GSDP is achievable only if manufacturing's share doubles from 11% to ~22% — requiring the state to become India's next major manufacturing hub alongside Gujarat, Maharashtra, and Tamil Nadu.

SECTION 5: VALUE ADDITION

5 topic-specific dimensions for Low Growth in Manufacturing.

Data & Facts

- **Manufacturing share globally:** China 27%, S. Korea 25%, Vietnam 25%, Germany 19%, India 17%, US 11%. India's aspiration is to match East Asian levels, not Western deindustrialised economies.
- **Ease of Doing Business:** India rose from 142nd (2014) to 63rd (2019) before World Bank discontinued the index. Key improvements: starting a business, construction permits, trading across borders.
- **FDI inflows:** $119.5 billion during Apr 2021–Mar 2024. Manufacturing received ~25% of FDI. Electronics and auto components fastest growing.
- **GNPAs in industry:** Declined from peak of ~23% (FY18) to single digits, reflecting banking sector cleanup that now enables industrial credit flow.
- **GST collections:** Gross GST ₹17.4 lakh crore (Apr-Dec FY26). Formalisation of manufacturing has widened the tax base.

Schemes & Policies

- **PLI Scheme Details:** Largest allocations: semiconductors (₹76,000 Cr), auto/auto components (₹25,938 Cr), ACC battery (₹18,100 Cr), pharma (₹15,000 Cr), mobile electronics (₹12,195 Cr). Each scheme has 5-year incentive period linked to incremental production.
- **ECLGS (Emergency Credit Line):** COVID-era lifeline for MSMEs. ₹5+ lakh crore sanctioned. Prevented mass MSME bankruptcies. Extended multiple times.
- **National Industrial Corridor Development:** 11 industrial corridors across India. DMIC (Delhi-Mumbai), VCIC (Vizag-Chennai), CBIC (Chennai-Bangalore), AKIC (Amritsar-Kolkata). Each with smart industrial cities.
- **Startup India (Manufacturing):** Over 1.25 lakh start-ups recognised. Manufacturing start-ups in electronics, drones, EVs, defence gaining momentum through AIM and SIDBI support.
- **AP's Industrial Policy 4.0 (2024-29):** Sustenance sectors (auto, pharma, textiles) + Propelling sectors (aerospace, EVs, semiconductors). Single-window clearance through DICs. Capital subsidy, stamp duty exemption, power tariff subsidy for MSMEs.

International Dimensions

- **China+1 Strategy:** Post-COVID/geopolitical tension-driven diversification from China. Apple, Samsung, Foxconn expanding India operations. India competes with Vietnam (35% of Chinese textile relocation), Mexico (nearshoring for US), and Indonesia.
- **India in GVCs:** India's GVC participation has increased but remains below potential. The Economic Survey notes India needs to move from being a 'world's back office' to 'world's factory + back office.'
- **WTO & Manufacturing:** India's manufacturing subsidies (PLI) must be WTO-compatible. The SCM (Subsidies and Countervailing Measures) Agreement limits export subsidies. India designs PLI as production-linked (not export-linked) to maintain compliance.

- **RCEP Exit:** India stayed out of RCEP (2019) to protect manufacturing from Chinese import surge. Debate continues on whether this was strategic prudence or missed opportunity for GVC integration.

Interlinkages

- **Manufacturing ↔ Agriculture:** Food processing (India processes only 10%) is the bridge. PLI for food processing connects farm output to manufacturing value addition. AP's Food Processing Policy 4.0 directly links its agricultural surplus to industrial processing.
- **Manufacturing ↔ Services:** Modern manufacturing is services-intensive (design, logistics, after-sales). The boundary is blurring (Industry 4.0, IoT, AI in factories). India's services strength can complement manufacturing — not replace it.
- **Manufacturing ↔ Employment:** Every ₹1 lakh crore of manufacturing investment creates ~1.5-2 lakh direct jobs and 3-4x indirect/induced employment. PLI's 12.6 lakh jobs demonstrate this multiplier.
- **Manufacturing ↔ Urbanisation:** Industrial corridors (VCIC, DMIC) drive planned urbanisation. Smart industrial cities prevent the unplanned urban sprawl that characterises Indian cities.

Way Forward

- **Complete Labour Code implementation:** States must notify rules for all 4 codes. The retrenchment threshold increase and gig worker recognition are transformative — but only if implemented.
- **Land reform for industry:** Pre-approved industrial land banks with all clearances should be scaled up. AP's 'Plug and Play' industrial parks policy is a model.
- **MSME technology upgradation:** Cluster-based common facility centres, digital adoption (Udyam portal, TReDS for receivables), and MSME-specific R&D support. Move MSMEs from survival mode to competitiveness mode.
- **R&D to 2%:** India must achieve the 2% R&D/GDP target set in 2003. NRF (₹50,000 Cr) is a start but private sector R&D must be incentivised through tax breaks, innovation procurement, and industry-academia partnerships.
- **Logistics cost reduction:** Target 8% of GDP from current ~14%. PM Gati Shakti implementation, multimodal logistics parks, port turnaround improvement, and dedicated freight corridors are critical.

SECTION 6: QUICK REVISION BOX

Last-minute glance.

▶ Manufacturing = ~17% GDP; Target 25% (Make in India)	▶ China 27%, Vietnam 25%, Bangladesh 21%
▶ PLI: 14 sectors; ₹2L Cr; 12.6L jobs; ₹18.7L Cr production	▶ Mobile: 78% imported (2014) → 98% domestic now
▶ Semiconductor: 10 projects; ₹1.60L Cr; 6 states	▶ Disciplined Swadeshi: 3-tier strategic framework
▶ MSMEs: 30% GDP; 45% mfg output; 48% exports	▶ PMMY: ₹36.18L Cr; 55.45 Cr accounts
▶ R&D = 0.64% GDP; Business R&D 41% (China 77%)	▶ GII: 38th (2025); Greenfield investment: 4th globally
▶ Logistics ~14% GDP (target 8%); NHs +60%	▶ Capex 4.2x increase; ₹11.21L Cr FY26 BE
▶ Labour: 44 laws → 4 codes; threshold 300; pending	▶ ASI FY24: +6% manufacturing employment
▶ AP: Mfg ~11% GSDP; SIPB ₹2.45L Cr; 65,541 jobs	▶ AP: 6 ports; VCIC; 6 new policies (4.0 series)
▶ China+1: Apple/Samsung expanding in India	▶ RCEP exit: protect mfg from Chinese imports
▶ Swarna AP 2047: $2.4T needs mfg doubling to 22%	▶ NIP: ₹111L Cr; Gati Shakti: 16+ ministries

SECTION 7: RECOMMENDED SOURCES

Official + textbooks.

Source	What to Read	Why
Economic Survey 2025-26	Industry & Infrastructure chapter; Disciplined Swadeshi	*PLI data, semiconductor, manufacturing GVA, logistics*
AP Socio-Economic Survey 2024-25	Ch. 6: Industries	*AP industry GVA, SIPB, policies, MSME profile*
Ramesh Singh — Indian Economy	Ch. on Industry (Make in India, Labour, MSMEs)	*Conceptual framework + policy evolution*
India Year Book (latest)	Industry chapter	*Updated scheme data, sector-wise production*
DPIIT Annual Report	Industrial policy implementation	*PLI progress, FDI data, EODB reforms*

Source	What to Read	Why
NITI Aayog — Strategy Documents	Manufacturing, logistics strategy	*Long-term vision for industrial competitiveness*