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EDITORIAL ANALYSIS



AUGUST 21



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1. Centre's fiscal outlook faces geopolitical, revenue risks (THE HINDU)
2. Can free public technology break the private coaching industry? (THE HINDU)
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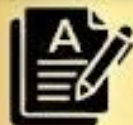
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Centre's fiscal outlook faces geopolitical, revenue risks

Geopolitical headwinds in the background of recently introduced tax changes would shape the Centre's fiscal outlook for 2026-27. Despite pressure on tax revenues and subsidies, strong non-tax receipts and policy interventions may keep fiscal outcomes broadly on track.

Centre's revenue receipts

As per the The Controller General of Accounts (CGA) data, the Centre's gross tax revenues (GTR) grew only by 3.7% in the first quarter of 2026-27. This was the result of subdued revenue performance of personal income tax (PIT) and Goods and Services Tax (GST), both of which were subjected to substantive modifications in 2025-26. In both cases, extensive rate rationalisation was undertaken. In the case of GST, there was a substantive rate reduction. The expectation was that while these reforms would entail an initial revenue sacrifice, subsequent expansion of the tax base would offset the revenue loss over time. PIT revenue growth in 2025-26 was only 0.037%, implying a buoyancy of zero. For the second half of 2025-26, GST revenue growth was 4.67%. The revenue reducing effect of these major tax interventions has continued in 2026-27. PIT shows a growth of 6.8% in the first quarter of 2026-27 while GST revenues showed a contraction of (-)18%.

In the meantime, the Indian economy was beset by the West Asian crisis and its related impact, including high and volatile global crude oil prices and other supply-side uncertainties. As retail fuel prices rose, the government reduced excise duties to ease the burden on consumers. This had a direct bearing on revenue from Union excise duties, which contracted by 22.4% in the first quarter of 2026-27.

In order to make up for the shortfall in revenue receipts, the government initiated some remedial measures. First, a Health Security or National Security (HSNS) Cess was introduced with effect from February 1, 2026 even as the GST Compensation Cess was discontinued. Second, the windfall tax on exports of diesel, petrol and aviation turbine fuel was increased effective August 3, 2026. Third, there was an increase in



C. Rangarajan

Former Chairman,
Prime Minister's
Economic Advisory
Council and former
Governor,
Reserve Bank of India



D.K. Srivastava

Member, Advisory
Council to the
Sixteenth Finance
Commission and
former Director of
the Madras School
of Economics

Central
government
finances for
2026-27 may
remain close to
budgeted levels

import duties through increased rates on gold and silver bullion and other specific precious metal articles, sweepings, and clad metals. One additional factor is the likelihood of a higher nominal GDP growth rate as compared to the budgeted growth of 10.04%. We expect the 2026-27 nominal GDP growth to be in the range of 12.5% to 13%. This projection reflects an expected real GDP growth of about 7% together with an Implicit Price Deflator (IPD)-based inflation of 5%-5.5%, consistent with the present trajectories of Consumer Price Index (CPI) and Wholesale Price Index (WPI) inflation at 3.9% and 9.3%, respectively, in the first quarter of 2026-27. We note that even with a higher nominal GDP growth rate, the magnitude of nominal GDP as per the 2022-23 base series is estimated at ₹391 lakh crore. This will be lower than the budgeted level at ₹393 lakh crore. On the whole, we consider that the estimated GTR would be realised or fall short by a small margin. At some suitable time, the reduction in excise duty on fuel prices must be restored.

Transfers to States

In estimating net tax revenue from GTR, a factor of 65%, which was the ratio of net to gross tax revenues in 2025-26 and 2026-27 (BE), can be applied since the Sixteenth Finance Commission (FC16) retained the share of States in the divisible pool of central taxes at 41%. There may be a marginal reduction in the shareable pool due to the introduction of the non-shareable HSNS Cess although some part of the revenues from this cess may go to the States as non-FC grants.

In the first quarter of 2026-27, there was a sharp contraction in tax devolution to the States to the extent of (-)89.5%. In subsequent months, there is an expectation of an increase in the assignment of central tax revenues to the States. Based on the FC16's recommendation, the FC grants for the States are budgeted to contract by an amount of ₹23,556 crore in 2026-27.

The Reserve Bank of India provided major fiscal support in the form of dividends, which were transferred to the Centre in May 2026. As a result, 77% of the budgeted dividends and profits for the full year had already been covered in the

first three months. We expect the budgeted amounts for non-tax and non-debt capital receipts to be realised.

The Centre's non-tax revenues contributed 37% of its net revenue receipts in the first quarter of 2026-27. During the quarter, major subsidies had to be increased by 37.4% due to the unexpected rise in global crude oil prices, although the growth in revenue expenditure was contained at 7.4%. The Centre was able to front-load its capital expenditure in the first quarter of 2026-27, which grew by 23.7%, compared with a contraction of (-)23.3% in the fourth quarter of 2025-26.

For the year as a whole, the crisis in West Asia is likely to continue keeping global crude oil prices under pressure. If the major subsidies in the first quarter are extrapolated to estimate the annual subsidy requirement, realised subsidies are expected to exceed the budgeted amount by about ₹50,000 crore.

Debt and deficit

Using first-quarter data, the Centre's fiscal deficit accounted for 18.2% of the annual budgeted magnitude, while the corresponding share of the revenue deficit was 0.4%. The impressive revenue account balance is mainly due to the contribution of non-debt receipts.

Fiscal deficit, calculated as the increment in debt, is estimated at ₹18.16 lakh crore. If this is realised, the fiscal deficit-to-GDP ratio, with respect to the new GDP series, is estimated at 4.6%. Correspondingly, the debt-to-GDP ratio is estimated at 55.8%. This is close to the budgeted level, taking into account the impact of the new GDP series. Some slippage may still occur due to a shortfall in tax revenues, an unbudgeted increase in revenue expenditure arising from additional subsidies, and a slightly higher external debt amid sustained pressure on the Indian rupee. As of now, significant deviations from the budgeted fiscal outcomes appear unlikely. However, an escalation of the war could deliver a major jolt to the economy and central finances.

The views expressed are personal

- **Key Terms and Conceptual Framework**

- **Gross Tax Revenue (GTR) vs. Net Tax Revenue (NTR):**

- *Gross Tax Revenue* represents the total tax collection accrued by the Union Government before any constitutional devolutions. It encompasses direct taxes (Corporation Tax, Personal Income Tax) and indirect taxes (GST, Customs, Central Excise).
- *Net Tax Revenue* is the actual amount retained by the Union after subtracting the mandatory devolution to States under Article 270 and adjusting for collection costs and non-shareable cesses/surcharges.

- **Tax Buoyancy vs. Tax Elasticity:**

- *Tax Buoyancy* measures the responsiveness of tax revenue growth to changes in nominal Gross Domestic Product (GDP), capturing both organic economic growth and discretionary policy changes (such as tax rate revisions and base adjustments):
- Tax Buoyancy = $\frac{\% \Delta \text{ Tax Revenue}}{\% \Delta \text{ Nominal GDP}}$
- A buoyancy of zero or near-zero indicates that revenue collection remains flat despite GDP growth, typically occurring when rate rationalisations temporarily suppress immediate yields.
- *Tax Elasticity*, by contrast, isolates the automatic response of revenue to GDP growth, strictly controlling for statutory changes.

- **Divisible Pool of Central Taxes (Article 270):**

- The Constitutional pool of central taxes shared with State governments based on recommendations of the Finance Commission.
- *Excluded Components:* Cesses and surcharges levied under Article 271 for designated purposes (e.g., Road and Infrastructure Cess, Health and Education Cess, HSNS Cess) bypass the divisible pool and remain entirely with the Union.

- **Implicit Price Deflator (IPD):**

- The comprehensive measure of price inflation across the whole economy, derived as the ratio of nominal GDP to real GDP:
- $IPD = \left(\frac{\text{Nominal GDP}}{\text{Real GDP}} \right) \times 100$
- Unlike the Consumer Price Index (CPI) or Wholesale Price Index (WPI), which track specific baskets of consumer or producer goods, IPD covers all domestically produced goods and services.

- **Special Additional Excise Duty (Windfall Tax):**

- A calibrated, dynamic tax levied on domestic crude producers and fuel exporters when international energy prices spike abnormally, preventing super-normal profits at the expense of macro-stability.

- **Fiscal Deficit and Debt-to-GDP Dynamics:**

- *Fiscal Deficit* reflects the total net borrowing requirement of the government during a financial year (*Total Expenditure – Total Non-Debt Receipts*).
- *Debt-to-GDP Ratio* measures total outstanding government liabilities as a percentage of nominal GDP, serving as the core anchor for sovereign solvency under the Fiscal Responsibility and Budget Management (FRBM) architecture.

- **Core Analytical Dynamics & Macroeconomic Balance**

- The fiscal trajectory reflects an intricate interplay between structural tax restructuring, external geopolitical shocks, and countercyclical expenditure management.

- **The J-Curve Phenomenon in Direct and Indirect Tax Reforms:**

- Substantive structural rate cuts in Personal Income Tax (PIT) and GST aim to widen the long-term tax base, eliminate compliance friction, and stimulate private consumption.
- In the immediate horizon, these rationalisations create a transitional revenue contraction (or near-zero buoyancy) before broad-based compliance and economic formalisation offset the initial revenue sacrifice.

- **The Energy Trilemma: Inflation Mitigation vs. Revenue Safeguards:**

- Geopolitical flare-ups in energy-exporting hubs (e.g., West Asia) generate severe imported cost-push inflation via crude oil channels.
- To prevent destructive consumer inflation and supply-side bottlenecks, the Union reduces central excise duties on retail transport fuels, trading off revenue from petroleum products against domestic price stability.

- **Non-Tax Revenue as a Shock Absorber:**

- Unanticipated revenue gaps in Gross Tax Revenues are systematically cushioned by robust non-tax receipts, prominently driven by the Reserve Bank of India's surplus dividend transfers and public sector enterprise payouts.
- This non-debt capital buffer shields capital expenditure programmes from abrupt mid-year fiscal compression.

- **The Expenditure Quality Pivot:**

- Even under revenue headwinds and swelling non-discretionary subsidy commitments (specifically for fertilizers, food, and LPG), fiscal consolidation is preserved by front-loading high-multiplier Capital Expenditure (*CapEx*) while strictly monitoring organic Revenue Expenditure (*RevEx*).

- **Federal Devolution Compression:**

- Because tax devolution tracks central gross tax receipts in real time, sudden contractions in excise, GST, or income tax yields compress the absolute transfers made to States in early quarters, demanding disciplined cash-flow management across sub-national treasuries.

- **Historical Evolution of Fiscal Federalism & Tax Reforms**
- India's revenue distribution and taxation framework has evolved through distinct phases of institution building, crisis management, and market-oriented integration.
 - **Colonial Architecture and Constitutional Institutionalisation (1935–1950):**
 - *Government of India Act, 1935*: Established the original scheme of revenue division between the Federal Centre and Provinces, introducing the concept of assigned taxes and shared pools.
 - *The Deshmukh Award (1950)*: Provided an interim allocation of income tax proceeds to states following partition.
 - *Constitutional Codification (1950)*: Framed Articles 268 to 281, creating the Finance Commission (Article 280) as a quasi-judicial, five-yearly mechanism to balance vertical and horizontal fiscal imbalances.
 - **The Planned Era and Cascading Indirect Taxes (1950s–1980s):**
 - Characterised by complex import-substitution industrialisation, high marginal personal income tax rates (peaking above 90% in the 1970s), and heavy reliance on cascading central excise duties.
 - *L.K. Jha Committee (1976)*: Recommended the introduction of a Value Added Tax (VAT) principle on manufactured goods (MANVAT) to mitigate cascading taxation.
 - **Post-1991 Reforms and the Chelliah Framework (1991–2002):**
 - *Tax Reforms Committee (Raja Chelliah, 1991)*: Championed moderate tax rates, simplification of direct tax slabs, drastic reduction in peak customs tariffs, and broadening the base through service taxation.
 - *80th Constitutional Amendment Act (2000)*: Enacted the "Alternative Scheme of Devolution" recommended by the 10th Finance Commission, transforming the divisible pool from selected taxes (PIT and Central Excise) to *all* Union taxes.
 - **Fiscal Consolidation and Sub-National Modernisation (2003–2016):**
 - *FRBM Act, 2003*: Established binding numerical statutory targets for eliminating revenue deficit and restricting fiscal deficit to 3% of GDP.
 - *State-Level VAT Rollout (2005)*: Replaced fragmented state sales taxes, establishing an input-tax credit mechanism across states.
 - *14th Finance Commission (2015)*: Recommended an unprecedented hike in tax devolution to States from 32% to 42%, transitioning financial autonomy away from discretionary Planning Commission grants.
 - **The Unified Indirect Tax Era and Contemporary Challenges (2017–Present):**
 - *101st Constitutional Amendment Act (2016)*: Rolled out the Goods and Services Tax (GST), subsuming 17 central and state levies under a cooperative federal council.
 - *15th and 16th Finance Commissions*: Maintained vertical devolution at 41% (post-Jammu & Kashmir reorganisation) while navigating the sunset of the GST Compensation Cess, cess-driven divisible pool shrinkage, and post-pandemic debt consolidation paths.



**GEOPOLITICAL HEADWINDS:
WEST ASIAN CRISIS**

**HIGH & VOLATILE
GLOBAL CRUDE OIL PRICES**



RECENT TAX REFORMS (2025-26):
PIT and GST Rate Rationalisation.
Initial Revenue Sacrifice expected
for long-term Base Expansion.



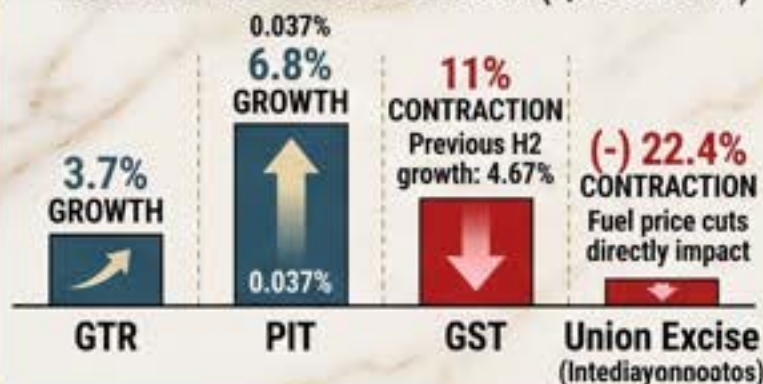
**ACADEMY'S
LEARNING GRID**

NCERTs
(Class XII: Macroeconomics
- Government Budget;
Class XI: Indian Econ. Dev.
- Reforms)

SYLLABUS
(GS III - Fiscal Policy,
Taxation, Budgeting,
Subsidies;
GS II - Federalism,
Finance Commission)

PYQs
(Themes: Tax Buoyancy
[2023 Prelims], Finance
Commission Devolution
[2021 Mains], CapEx vs
RevEx [2023 Mains])

THE REVENUE CHALLENGE (Q1 2026-27)



REMEDIAL MEASURES & STABILISERS



MULTI-DIMENSIONAL IMPACT

ECONOMIC DYNAMICS

- CAPITAL EXPENDITURE (CapEx) FRONT-LOADED (+23.7% in Q1) vs. Revenue Expenditure (RevEx) Contained (+7.4%)
- Focus on Fiscal Multipliers.

ETHICAL & SOCIAL IMPACT

- SUBSIDY BURDEN RISES (+37.4% expected +₹50k Cr) due to oil prices
- Targeted support for fertilizer/food vs fiscal slippage.

FEDERAL FEDERALISM

- TRANSFERS TO STATES
 - Divisible Pool (41%) → 19.5% Contraction in Q1 (due to GTR shortfall)
- Non-shareable Cesses (HSNS) creating federal friction.

FISCAL DEFICIT TO GDP RATIO:
Estimated 4.6%.

DEBT TO GDP RATIO:
Estimated 55.8%.
(Close to budgeted, impact of new GDP series)

Key factors: Geopolitical stability and restoration of fuel excise duties. ESCALATION OF WAR is the major risk.

- **Logical and Philosophical Foundations**
- Fiscal policy operates at the intersection of classical public finance theory, welfare economics, and constitutional jurisprudence.
- **The Supply-Side Paradigm and the Laffer Curve:**
 - The structural rationalisation of direct and indirect taxes rests on the economic premise that lower marginal tax rates reduce the incentive for tax avoidance, increase disposable income, and stimulate broader corporate and consumer activity.
 - The policy assumes that the initial dip in tax elasticity will eventually be superseded by volume expansion across formalised transactions.
- **Keynesian Countercyclical Stabilisation:**
 - When external supply-side shocks (such as high energy import prices) threaten real household consumption, classical orthodoxy would dictate cutting spending to match shrinking revenues.
 - The modern countercyclical framework deliberately expands targeted transfers (fertilizer and food subsidies) and cuts fuel excise levies, utilizing sovereign borrowing and central bank surpluses to cushion aggregate demand.
- **The Rawlsian Contract in Fiscal Redistribution:**
 - Under John Rawls' difference principle, socioeconomic inequalities are justifiable only if they work to the maximum benefit of the least advantaged.
 - Allocating revenue windfalls (from corporate excess profits and bullion import duties) directly toward insulating basic food, energy, and fertilizer prices fulfills the state's redistributive duty toward vulnerable strata during macro volatility.
- **Intergenerational Equity in Debt Management:**
 - Borrowing to fund ongoing operational expenses (*Revenue Deficit*) passes debt burdens to future generations without creating productive assets.
 - Borrowing exclusively to fund long-life capital infrastructure (*CapEx*) is ethically justified, as future taxpayers inherit physical and digital assets capable of yielding enhanced economic productivity.

- **Multidimensional Impact Assessment**

- **1. Economic Dimension**

- **Expenditure Multipliers:** Capital investments generate high fiscal multipliers (typically $2.5 \times$ to $3.5 \times$ over a multi-year horizon), creating crowding-in effects for private investments, whereas uncalibrated revenue expenditure yields a multiplier of less than $1.0 \times$.
- **Inflation Deflator Dynamics:** Divergence between Wholesale Price Index (WPI) and Consumer Price Index (CPI) alters the Implicit Price Deflator, resulting in higher nominal GDP projections that statistically expand borrowing headroom within deficit ratios.

- **2. Political & Federal Dimension**

- **Asymmetric Devolution Friction:** The extensive use of non-shareable cesses (such as HSNS) alongside fuel excise cuts shrinks the net divisible pool, causing friction between the Union and States regarding cooperative fiscal federalism.
- **Sub-National Fiscal Space:** Early-quarter contraction in tax devolutions strains state-level liquidity, requiring states to increase reliance on Ways and Means Advances (WMA) and State Development Loans (SDLs).

- **3. Legal & Constitutional Dimension**

- **Constitutional Integrity of Article 271:** While Article 271 permits the Union to levy surcharges and cesses for specific purposes, systemic reliance on these tools to bypass Article 270 devolution tests the spirit of the Constitutional division of taxation powers.
- **Statutory Compliance with FRBM Mandates:** Balancing emergency geopolitical interventions with target trajectories requires legislative flexibility in defining escape clauses under severe fiscal disruptions.

- **4. Ethical & Social Dimension**

- **Targeted vs. Blanket Subsidies:** The ethical imperative of protecting agricultural productivity via fertilizer subsidies must be balanced against the risk of fiscal slippage, which can weaken sovereign credit metrics.
- **Progressive Tax Incidence:** Adjusting personal income tax slabs to relieve middle-income households while extracting windfall duties from super-normal resource extraction aligns with vertical equity principles.

- **5. International & Geopolitical Dimension**

- **Energy Import Vulnerability:** India's dependency on imported crude (exceeding 85%) leaves the domestic fiscal deficit directly exposed to geopolitical conflict corridors, shipping bottlenecks, and exchange rate fluctuations.
- **Currency Pass-Through Effects:** Rupee depreciation against the US Dollar raises the cost of external debt servicing and expands the total landed subsidy bill for critical commodities.

Conceptual Linkages with NCERT Textbooks

NCERT Book & Class	Chapter Name	Specific Thematic Linkage
Class XII: Introductory Macroeconomics	Chapter 5: Government Budget and the Economy	• Direct vs. Indirect Taxes and non-tax receipts. • Calculation of Fiscal, Revenue, and Primary Deficits. • Multiplier effects of government expenditure and automatic stabilisers.
Class XI: Indian Economic Development	Chapter 3: Liberalisation, Privatisation, and Globalisation	• Historical evolution of post-1991 tax reforms. • Reduction in customs/excise tariffs and rationalisation of tax rates.
Class XI: Indian Constitution at Work	Chapter 7: Federalism	• Financial relations between the Union and States. • Role and functioning of the Finance Commission (Article 280). • Asymmetry in resource allocation powers.
Class XII: Politics in India Since Independence	Chapter 3: Politics of Planned Development	• State-led public investments, developmental expenditures. • Balancing equity, redistribution, and fiscal prudence.

- **UPSC CSE & State PSC Syllabus**

- **General Studies Paper II (Governance, Constitution & Polity):**

- *Functions and responsibilities of the Union and the States:* Issues and challenges pertaining to the federal structure, devolution of powers, and finances up to local levels.
 - *Constitutional Bodies:* Powers, functions, and recommendations of the Finance Commission.

- **General Studies Paper III (Economic Development):**

- *Indian Economy and issues relating to planning, mobilisation of resources, growth, development, and employment.*
 - *Government Budgeting:* Revenue receipts, tax rationalisation, direct tax reforms, GST restructuring, and the management of Fiscal and Revenue Deficits.
 - *Subsidies and Food Security:* Rationalisation of fertilizer, fuel, and food subsidies.

- **General Studies Paper IV (Ethics, Integrity & Aptitude):**

- *Public/Civil Service Values and Ethics in Public Administration:* Ethical dilemmas in resource allocation, balancing short-term electoral welfare with intergenerational fiscal sustainability.

- **Essay Paper & Optional Subjects:**

- *Essay Themes:* "Cooperative Federalism: Rhetoric vs Reality," "Fiscal Prudence vs Social Welfare: The Developing Nation's Dilemma."
 - *Economics Optional:* Public Finance, Tax Buoyancy and Elasticity, Inter-governmental Fiscal Transfers, Debt Sustainability Models.
 - *Public Administration Optional:* Financial Administration, Budgetary Process, Control over Public Expenditure.
-

- **Way Forward & Policy Roadmap**

- **Rationalisation and Sunset Clauses on Cesses/Surcharges:**

- Establish a statutory cap on the proportion of cesses and surcharges relative to Gross Tax Revenue (e.g., restricted to under 10%).
- Mandate clear sunset clauses on all special levies, integrating them into standard GST and Direct Tax schedules to rebuild the core divisible pool for States.

- **Deepening the Tax Base through Data Triangulation:**

- Rather than altering statutory rates frequently, leverage automated data-matching between the Goods and Services Tax Network (GSTN), Central Board of Direct Taxes (CBDT), and financial intelligence databases to detect evasion and expand the active tax base.

- **Targeted De-Risking of the Subsidy Architecture:**

- Transition from input subsidies (blanket price supports on energy and fertilizers) to direct income support mechanisms via targeted Direct Benefit Transfer (DBT).
- Implement dynamic pricing on retail fuels alongside direct cash offsets strictly reserved for bottom-quintile consumers.

- **Transitioning to a Medium-Term Debt-to-GDP Anchor:**

- Align fiscal governance with the recommendations of the N.K. Singh FRBM Review Committee, adopting the general government debt-to-GDP ratio (target: 60% combined; 40% Union, 20% States) as the primary operating anchor, using annual fiscal deficit targets as operational variables.

- **Protecting and Institutionalising the Quality of Expenditure:**

- Maintain public capital expenditure growth above the nominal GDP growth rate to drive infrastructure formation.
- Incentivise State governments through tied, 50-year interest-free capital loans linked strictly to structural reforms and real-asset verification.



- **UPSC CSE Mains**

- **[2023 - GS III]** Explain the distinction between capital budget and revenue budget. Discuss the significance of increasing the share of capital expenditure in the total budget of the government.
- **[2021 - GS II]** How have the recommendations of the 14th and 15th Finance Commissions affected the fiscal space of the State governments? Examine critically.
- **[2019 - GS III]** Do you agree that the Indian economy has witnessed a shift from a tax-inelastic system to a tax-buoyant system in recent years? Give reasons in support of your answer.
- **[2018 - GS III]** The public expenditure management is a challenge to the Government of India in the context of budgeting while maintaining fiscal prudence. Discuss.
- **[2016 - GS II]** Discuss the rationale for introducing the Goods and Services Tax (GST) in India. Assess how it alters the fiscal federalism architecture of the country.

- **State Public Service Commission (APSC / Other PSCs)**

- **[APSC CCE Mains - GS V / GS III]** "The proliferation of cesses and surcharges has emerged as a major bone of contention in Union-State financial relations." Discuss with special reference to resource-constrained states like Assam.
- **[APSC CCE Mains - GS III]** Discuss the role of non-tax revenues in stabilizing the finances of the Central Government during periods of global economic turbulence.

Can free public technology break the private coaching industry?



Buddha Chandrasekhar

Chief
Coordinating
Officer of the All
India Council of
Technical
Education
(AICTE) and
CEO, Anuvaid
AI, run under
the Ministry of
Education



Anubhav Shrivastava

Co-founder of
Theory of
Physics

PART 1

In his 2026 Independence Day address, Prime Minister Narendra Modi announced that the government will roll out free online coaching for competitive exams using India's digital public infrastructure. The announcement was made in a bid to reach out to the Gen-Z youth, especially following the widespread student protests against the National Eligibility cum Entrance Test (NEET) paper leak. The objective of the PM's announcement was to save poor and middle-class families thousands of crores while also helping students prepare without leaving their homes. However, can free public technology break the private coaching industry? Buddha Chandrasekhar and Anubhav Shrivastava discuss the question in a conversation moderated by Malini Parecha.

How do you view the announcement made by PM Modi to provide free online coaching?

Buddha Chandrasekhar: Prime Minister Modi's announcement on August 15 is a major intervention in education equity. We need to see it as an opportunity to redesign the entire competitive exam preparation ecosystem so that the probability of success depends less on family income, geography and access to an elite coaching centre. India has digital public infrastructure, teachers and talent. We can create a better personalised and customised free online coaching network.

Anubhav Shrivastava: I see it as an announcement that can bring reforms in the education system. But accessibility and affordability are not the main issues here; the issue is deeper. It is about the dependency of the Indian education system on coaching. We need to see whether the launching of this new programme will effectively kill this dependency (on private elite coaching); if not, it will just be another free access platform where videos will be uploaded every day. It will just be another video library.

Will the prospect of free online coaching really kill the dependency on private and elite coaching? Also, India has an existing public digital infrastructure with education platforms such as Swayam, Sathya and so on. How then can shifting to online modules be an alternative to the coaching industry?

BC: The existing platforms are very traditional in nature. We need to create Agentic AI-based systems suitable for Gen Z youth where they can experiment without going to the classroom. They want everything to be mobile based and



Students engaged in last-minute preparation for the NEET re-examination in front of an exam centre in Salem, Tamil Nadu on June 21. (ANIL KUMAR SANKARANARAYAN)

they want quick content delivery in different formats. We are not able to meet these expectations. It is not that our systems are bad; our systems are not designed for them. This is the problem statement that needs to be accepted so that we can create better systems.

Why do we need coaching centres when we have very good schools and colleges? Because there is a fundamental difference between what is taught in school and what is asked in competitive exams. The school aims to conceptualise learning and focuses on board examinations whereas competitive exams ask a student a question to understand whether they can outperform millions of other students under severe time pressure. These are two different dimensions altogether. And that basically requires a separate skill set altogether. In coaching centres, students learn how to do rapid problem solving and deploy different test strategies. If you know how to eliminate the wrong options and figure out the right answer, you will get a better rank in competitive exams.

But online coaching cannot cover everything. What about personalised feedback and a competitive peer environment? I'm sure after your parents and friends, you still remember your school teachers. The reason is because they emotionally and academically mentor you. I think we need to create a hybrid mechanism. As the National Education Policy (NEP), 2020 encourages skill hubs, we need to make sure there are skill hubs in schools which students can attend physically and get mentored in regular intervals along with online classes. We need to create a digital twin of everything. If you have a digital twin, students will tweak it and use it as per their needs. Gen Z wants an immersive experience – so it needs to be digital first, along with human assistance.

AS: The main objectives of school and board



Just providing free access to lectures is not going to work for the students. We need to find out what the coaching industry provides to the students which they don't get from anywhere else. The classes are structured and deliver on what they promise

ANUBHAV SHRIVASTAVA

examinations are totally different. In Class 9 and 10, students are less dependent on coaching. In Class 11 and 12, when they start preparing for the joint Entrance Examination (JEE) and NEET, they start depending on coaching because they have to solve complex questions. The curriculum is not designed in a way that can make a student well prepared for the upcoming examinations. So there's a huge gap between the objectives of the two.

Just providing free access to lectures is not going to work for the students. We need to find out what the coaching industry provides to the students which they don't get from anywhere else. The classes are structured and deliver on what they promise – there are weekly assessments and doubt solving forums. Moreover, in the coaching industry, not all courses cost lakhs and thousands. Some tutors like me create an application which offers students all this for a minimum application charge of around ₹700-₹800. The government has ample funds, with Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs) at their disposal. They can make coaching free of cost; but not just the lectures, this entire structure has to be incorporated.

India has over 100 major national-level exams, including the UPSC, JEE and NEET that attract millions of aspirants. To build coaching for all of them at one point will be diluting quality, so what should be the scope of such a plan?

BC: The current thought process of the government is one course per exam. But instead, we can create a common competitive learning stack. About 70% to 80% of these exams have similar kinds of requirements for reasoning, language, general awareness, and current affairs. We can create a national competitive learning and opportunity grid and have a layered way of selection. The student can easily adopt layers depending on the exam.

AS: I don't feel the common stack model works. I teach physics for both NEET and JEE aspirants.

There is a huge difference in teaching the subject for both exams. While fundamental concepts are the same, the nature of the examination is different. So, you have to take different classes for them. A common grid could be a futuristic plan but I don't think it's currently feasible. There should be one proper dedicated platform per examination.

There are millions of students who face a double hurdle. One is that there is a lack of reliable, high-speed internet and electricity for online coaching and that exam centres are located hundreds of kilometres away. So how do you bridge the last mile?

BC: 5G and 4G level implementation in our country has already reached tribal areas. But let us assume it's a very difficult terrain, where Internet penetration is very less and there are frequent disconnects – there satellite technology can be explored. A small, compact ground antenna box can be installed at a remote exam centre. Instead of relying on local broadband or mobile networks, the antenna connects directly to Low Earth Orbit (LEO) or Geostationary (GEO) satellites – similar to satellite TV broadcasting. The base station receives the question paper from the satellite, stores it locally, and acts as an offline server to display or transmit it short-range to students. Students write their answers using pen and paper placed over a small smart digital pad (equipped with short range wireless capabilities such as NFC/radio waves). As the student writes, the digital pad captures the answers, encrypts the data locally, and saves it in real time – requiring no active Internet connection during the test. Once the exam ends and a satellite link connects, the local base station securely uploads all encrypted answer files back to the central examination authority.

This is the way TV broadcasting works. So when we can watch OTTs like this, why can't we can conduct an exam using it? There are some gaps as of now, but we can cover this.

AS: For catering to the last mile student, we have existing infrastructure – we just have to improve it. We can install smart boards as I have been doing near cities where we deliver classes. You can provide them with all the lectures, and a mentor can play the video and make students understand concepts by doing some of the activities in front of them.



To listen to the full interview
Scan the code or go to the link
www.thehindu.com

• Key Terms and Explanations

- **Digital Public Infrastructure (DPI) in Education:** Interoperable, open-source digital networks and platforms built for public benefit that enable identity verification, content delivery, and assessment at population scale.
 - *Example:* India Stack components adapted for learning, such as DIKSHA (Digital Infrastructure for Knowledge Sharing), SWAYAM, and the SATHEE platform developed with IIT Kanpur.
- **Shadow Education System:** The private, fee-charging tutoring and coaching apparatus that operates parallel to, and often overshadows, the formal schooling system.
 - *Example:* Commercial coaching hubs in cities like Kota, Sikar, and Mukherjee Nagar that specialize strictly in test-taking mechanics.
- **Agentic AI in Pedagogy:** Autonomous artificial intelligence systems capable of diagnosing a student's learning gaps, generating customized test modules, resolving doubts in real time, and adapting instructional pacing without continuous human prompting.
 - *Example:* An AI tutor that detects a student's recurring errors in rotational mechanics and dynamically serves foundational sub-topic videos and targeted drills.
- **Digital Twin in Education:** A comprehensive, virtual real-time model of a student's academic profile, learning habits, speed, and cognitive retention. It allows algorithms to simulate performance trajectories and personalize interventions.
- **Common Competitive Learning Stack:** A modular, layered digital curriculum framework where universal competencies (logical reasoning, quantitative aptitude, language comprehension, and general awareness) form a foundational base, upon which exam-specific modules (such as advanced physics for JEE or administrative ethics for UPSC) are layered.
- **LEO/GEO Satellite-Enabled Edge Assessment:** A decentralized testing architecture where remote exam centers download encrypted question papers via Low Earth Orbit (LEO) or Geostationary (GEO) satellites onto local offline servers.
 - *Example:* Using smart digital pads that capture pen-and-paper strokes offline with local encryption, transmitting data back only when satellite connectivity reconnects, eliminating local internet vulnerabilities.

- **Main Arguments and Substantive Debates**
- The push to democratize competitive test preparation through public technology exposes fundamental debates regarding pedagogy, market incentives, and state capacity.
- **Equity versus Structural Dependency:** Providing free digital coaching lowers financial barriers for marginalized students, but free content alone does not eliminate the psychological dependency on commercial coaching. The true moat of elite institutes lies in discipline enforcement, continuous peer benchmarking, and structured testing routines.
- **The Pedagogical Schism (Schooling vs. Entrance Exams):** Mainstream school education is structured around holistic learning, descriptive writing, and subjective understanding for board certifications. In contrast, high-stakes competitive examinations are elimination filters prioritizing rapid problem-solving, cognitive shortcuts, and negative-marking risk management.
- **The "Video Repository" Fallacy:** Static digital libraries (such as unguided lecture uploads) suffer from high attrition rates and low engagement. Effective competitive preparation requires continuous evaluation loops, adaptive doubt-resolution mechanisms, and emotional mentoring.
- **Horizontal Convergence versus Vertical Specialization:**
 - *Pro-Convergence:* 70% to 80% of competitive exams share foundational syllabi (reasoning, quantitative aptitude, general knowledge), justifying a unified national digital learning grid.
 - *Pro-Specialization:* High-stakes technical examinations (e.g., JEE Advanced versus NEET-UG) require fundamentally divergent conceptual depths and test-taking orientations, making a single generalized stack insufficient.
- **The Hybrid "Phygital" Imperative for the Last Mile:** Purely digital delivery falters in rural and tribal belts due to digital poverty, screen fatigue, and lack of home study environments. Bridging this gap requires physical touchpoints—converting local schools into after-hours skill hubs equipped with smart displays, satellite-linked offline servers, and local human mentors.



- **Historical Evolution of the Issue**

- The separation of formal schooling from competitive selection mechanisms in India is rooted in historical shifts in state policy, demographics, and economic structures.

- **Colonial Foundation (1835–1947):**

- *Macaulay's Minute (1835)* & *Wood's Despatch (1854)* established an English-centric administrative education aimed at civil service recruitment.
- Competitive entrance examinations for the Indian Civil Services (ICS), held initially in London, created the earliest archetype of high-stakes, exclusionary testing.

- **Post-Independence Institution Building (1947–1980s):**

- The establishment of premier public institutions (IIT Kharagpur in 1951, AIIMS New Delhi in 1956) created centers of excellence with limited seating capacities.
- Entrance exams emerged as transparent, merit-based rationing tools to allocate scarce, highly subsidized higher-education seats.
- Localized, teacher-centric private tutoring circles began emerging in urban centers like Mumbai, Delhi, and Patna.

- **Liberalization and the Rise of Coaching Hubs (1990s–2010s):**

- The 1991 economic reforms expanded the middle class, driving demand for engineering, medical, and administrative careers as engines of social mobility.
- Kota (Rajasthan) transformed into an industrial-scale coaching hub, popularizing integrated schooling ("dummy schools"), standardized study packages, and high-pressure test factories.

- **The EdTech Boom and Digital Interventions (2015–2023):**

- Affordable 4G mobile broadband (the India telecom boom post-2016) catalyzed venture-backed EdTech platforms, promising democratization of test prep.
- The Union Government launched open educational repositories like SWAYAM, DIKSHA, and the National Digital Library.
- Despite lower digital costs, high-fee hybrid coaching models persisted due to market demand for personalized mentorship and peer competition.

- **Crisis, Regulation, and Digital Public Infrastructure (2024–Present):**

- Nationwide disruptions, including exam integrity breaches (such as the 2024 NEET-UG paper leak controversy), underscored the vulnerabilities of paper-based centralized testing.
 - Enactment of the *Public Examinations (Prevention of Unfair Means) Act, 2024* and the *Ministry of Education Guidelines for Regulation of Coaching Centers (2024)*.
 - Policy shifted toward positioning competitive exam coaching directly as a **Digital Public Good**, utilizing AI-driven, multilingual state platforms to dismantle private coaching monopolies.
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FREE PUBLIC TECHNOLOGY vs. PRIVATE COACHING: A COMPREHENSIVE STRATEGIC ANALYSIS

THE PEDAGOGICAL SHIFT



VS.



Conceptual
Schooling vs.
Test-Taking
Heuristics

Mental Health &
High-Pressure
Test Factories



Breaking the Dependency
Loop on Private Tutors

LAST-MILE DIGITAL SOLUTIONS



LEO/GEO
Satellite

Satellite-Enabled
Edge Assessment

Offline Local Servers
at Remote Centers

Encrypted Smart Pads
for Pen-and-Paper
Capture

Bridging Rural, Tribal,
and Gender Gaps

THE ROADMAP FOR BEYOND LECTURES



Agentic AI: Dynamic
Personalization &
Custom Drills



Modular National Competitive
Learning Grid (Common
Stack with Layered Layers)



Phygital School Skill Hubs
with Human Assistance



Curricular Realignment with
NEP 2020

SOCIAL EQUITY

- Bridge Regional & Economic Disparities
- Empower Marginalized Candidates



ECONOMIC SAVINGS

- Save Families
Thousands of Crores
- Correct Market Failure of
Over-Commercialization



ETHICAL REFORM

- Tackle Dummy Schools
& Paper Leaks
- Restore Holistic
Childhood Education



AXIA : RISE ABOVE THE REST

- **Logical and Philosophical Base**

- **Distributive Justice and the Rawlsian Lens:** John Rawls' *Difference Principle* posits that socio-economic inequalities are justifiable only if they work to the maximum benefit of the least-advantaged. When private coaching monetizes test strategies, the equality of opportunity guaranteed under liberal democracies becomes illusory. State-backed free preparation aims to equalize the initial starting line.
- **Cultural Capital and Habitus (Pierre Bourdieu):** The private coaching industry functions as a market mechanism converting economic capital into academic and cultural capital. Affluent families purchase specialized training, test heuristics, and elite institutional access, reproducing class privileges under the guise of objective merit.
- **The "Banking" Model of Education (Paulo Freire):** High-stakes entrance examinations incentivize a mechanical pedagogy where students are treated as receptacles to be filled with formulaic tricks and pattern recognition. This directly contradicts Freire's ideal of problem-posing, emancipatory education, turning candidates into efficient test-takers rather than critical thinkers.
- **Public Goods Theory and Market Failure:** High-quality instructional design and test strategies exhibit the characteristics of public goods—non-rivalry and non-excludability—when deployed over digital networks. Because private markets under-provide equitable access to low-income aspirants, state intervention through Digital Public Infrastructure corrects a structural market failure.

- **Multidimensional Analysis**
- **Social Dimension**
 - **Mitigating the Rural-Urban and Gender Divide:** Female aspirants and rural candidates often face mobility constraints, safety concerns, and family reluctance to fund residential coaching in distant cities. Digital public coaching enables access directly from home environments.
 - **De-escalating Mental Health Crises:** Commercial coaching hubs have seen sustained student distress, alienation, and suicides stemming from isolation and intense peer pressure. Decentralized, home-based learning environments offer better family and community support structures.
- **Political Dimension**
 - **Channeling the Youth Demographic Dividend:** With over 65% of India's population under 35, youth frustration over exam integrity, unemployment, and costly coaching poses a significant socio-political challenge. Proactive state interventions help restore trust in public recruitment and merit-based selection.
 - **Federal Alignment and State Welfare Schemes:** State-level programs (e.g., *Mukhyamantri Abhyudaya Yojana* in Uttar Pradesh, *Jai Bhim Mukhyamantri Pratibha Vikas Yojana* in Delhi) must be integrated with a national learning grid to avoid resource duplication and inter-state quality disparities.
- **Legal and Governance Dimension**
 - **Constitutional Mandates:**
 - *Article 14:* Equality before the law, ensuring that economic background does not restrict access to public offices and higher education.
 - *Article 21A & Article 46:* Promoting the educational and economic interests of Scheduled Castes, Scheduled Tribes, and weaker sections.
 - **Regulatory Enforcement:** Effective operationalization of the *Public Examinations (Prevention of Unfair Means) Act, 2024*, coupled with Central Consumer Protection Authority (CCPA) crackdowns on deceptive success claims and misleading advertisements by private coaching institutes.
- **Ethical Dimension**
 - **The Illusion of Pure Meritocracy:** Treating competitive entrance ranks as pure reflections of individual talent ignores the hidden curriculum of expensive coaching, socio-economic stability, and elite schooling advantages.
 - **Commercialization of Childhood and Schooling:** The rise of non-attending "dummy schools" hollows out the ethical mission of secondary schooling, stripping students of holistic development, sports, social interaction, and civic values in pursuit of test scores.
- **Economic Dimension**
 - **Relieving Household Financial Stress:** Middle- and lower-income families often liquidate assets, exhaust life savings, or take high-interest loans to finance private coaching, causing significant financial strain.
 - **Market Dynamics and Macroeconomic Efficiency:** The private coaching industry generates tens of thousands of crores annually. Transitioning toward public digital platforms redirects household capital toward productive savings, nutrition, and diverse higher education opportunities.
- **International Dimension**
 - **The East Asian Experience (South Korea's EBS System):** South Korea integrated high-stakes college entrance exam (*Suneung*) prep directly with the public Educational Broadcasting System (EBS), mandating that up to 70% of exam questions link directly to free EBS public lectures and textbooks to curb private *Hagwon* spending.
 - **China's "Double Reduction" Regulatory Model:** In 2021, China barred for-profit tutoring institutions in core school subjects, mandating non-profit operations and limiting commercial coaching to ease family financial burdens and promote social equity.

Linkages with NCERT Textbooks

Class & Textbook	Chapter / Unit	Conceptual Linkage to the Issue
Class 11 Sociology (Introducing Sociology)	Chapter 3: Understanding Social Institutions	Analyzes education as a formal social institution that functions both as an engine of social mobility and as a mechanism for reproducing existing class stratifications.
Class 12 Sociology (Social Change & Development)	Chapter 4 & 6: Change in Rural Society; Globalisation & Social Change	Explores the commercialization of public social services, the widening rural-urban digital divide, and the emergence of private market actors in traditional welfare sectors.
Class 11 Political Science (Political Theory)	Chapter 4: Social Justice	Examines John Rawls’ theory of justice, the distribution of social goods, affirmative action frameworks, and the distinction between formal equality and substantive equality of opportunity.
Class 11 Economics (Indian Economic Development)	Chapter 5: Human Capital Formation in India	Directly links access to quality education with labor productivity, economic growth, and the state’s obligation to provide affordable social infrastructure.
Class 12 Political Science		

- **Linkages with UPSC CSE Syllabus**
- **General Studies Paper 1: Indian Society**
 - *Salient features of Indian Society, Diversity of India*: The structural divide between rural and urban aspirants in accessing higher education and prestigious public jobs.
 - *Social Empowerment and Poverty*: Education and competitive exams as the primary vehicles for intergenerational upward mobility among marginalized communities.
- **General Studies Paper 2: Governance, Polity & Social Justice**
 - *Welfare Schemes and Interventions for Vulnerable Sections*: State-backed free test preparation and scholarship ecosystems as targeted social justice policies.
 - *Issues Relating to the Development and Management of Education and Human Resources*: School education reform, regulation of private coaching, and the integration of national testing frameworks.
 - *Role of Civil Services in a Democracy*: Integrity, transparency, and administrative standardization in recruiting personnel via national competitive examinations.
- **General Studies Paper 3: Technology & Economic Development**
 - *Digital Public Infrastructure and Science & Technology*: Leveraging Agentic AI, LEO/GEO satellite communications, and mobile learning ecosystems to solve last-mile delivery bottlenecks.
 - *Human Capital Formation and Employment*: Addressing youth underemployment, demographic dividend management, and bridging the gap between education and industry skill demands.
- **General Studies Paper 4: Ethics, Integrity & Aptitude**
 - *Human Values and the Role of Educational Institutions*: The ethical costs of converting education into a high-stress commercial commodity.
 - *Public Service Values and Ethical Governance*: Institutional accountability, preventing leaks, tackling corruption in public examination machinery, and safeguarding systemic trust.

- **Way Forward**

- **Curricular Realignment under NEP 2020:** Reduce the structural gap between secondary school assessments and competitive entrance formats. School board examinations must pivot away from rote descriptive reproduction toward critical thinking, application-oriented reasoning, and analytical problem-solving.
 - **Deploying a Hybrid "Phygital" Hub-and-Spoke Network:** Convert higher secondary government schools, *Kendriya Vidyalayas*, and *PM SHRI* schools into evening study centers. Equip these spaces with high-speed satellite downlinks, smart boards, and physical proctors to recreate structured peer learning environments for underprivileged students.
 - **Building an Agentic AI-Driven National Learning Stack:** Upgrade public platforms (such as SWAYAM, SATHEE, and DIKSHA) into interactive, AI-enabled engines. The system should automatically assess student diagnostic tests, generate personalized remediation paths, and offer 24/7 multilingual doubt clearance.
 - **Standardized Offline Edge Assessment for Remote Geographies:** Implement tamper-proof, satellite-connected local server boxes paired with smart digitizing writing pads at remote test centers. This removes reliance on unstable local wired internet while securing exam paper delivery and return pipelines.
 - **Comprehensive Regulation and School Integrity:** Enforce strict compliance with the *2024 Coaching Center Guidelines*, explicitly curbing the practice of non-attending "dummy schools." Tie school accreditations to verified student attendance, sports participation, and balanced psychological evaluation.
 - **Expanding Higher Education Capacity (Addressing Supply Scarcity):** The coaching industry thrives primarily because of the extreme mismatch between applicant numbers and available seats in top-tier institutions. The state must rapidly scale seat capacities, faculty recruitment, and infrastructure across Tier-2 and Tier-3 universities, IITs, IIITs, NITs, and AIIMS.
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- **UPSC Civil Services Main Examination**
 - **GS Paper 2 (2023):** "The right to education is a fundamental right, but without equitable access to quality education and fair evaluation, it fails to achieve social justice." Critically examine in light of the commercialization of competitive examinations in India.
 - **GS Paper 2 (2020):** "National Education Policy 2020 is in conformity with the Sustainable Development Goal-4 (2030). It intends to restructure and reorient the education system in India." Critically examine the statement.
 - **GS Paper 3 (2022):** "Digital Public Infrastructure (DPI) has emerged as a cornerstone of India's inclusive socio-economic growth." Discuss how DPI can be leveraged to bridge the regional and economic disparity in education and skill development.
 - **GS Paper 4 Ethics (2021):** "The high commercialization of education has degraded the noble profession of teaching into a market-driven transaction, severely impacting student mental health and societal values." Discuss the ethical dimensions of this transition and suggest systemic institutional remedies.
 - **UPSC Essay (2019 / 2022):**
 - *"Education is what remains after one has forgotten what one has learned in school."*
 - *"The process of self-discovery has now been technologically outsourced."*
- **State Public Service Commission (APSC) Questions**
 - **APSC CCE Mains (GS 2 - 2023):** "The digital divide remains a formidable obstacle in extending online educational services to the rural and tea-garden communities of Assam." Analyze the challenges and suggest a strategic roadmap incorporating digital public infrastructure.
 - **APSC CCE Mains (GS 5 - Assam Specific):** Discuss the institutional initiatives undertaken by the Government of Assam to provide free coaching and mentoring to civil service and entrance exam aspirants from underprivileged backgrounds. Evaluate their on-ground efficacy.



The Vanashakti verdict is balanced and pragmatic

The Supreme Court of India's landmark judgment delivered on July 29, 2026 in *Vanashakti vs Union of India* has brought much-needed clarity to one of the most debated issues in environmental regulation: the fate of projects that commenced without obtaining prior Environmental Clearance (EC).

Wider policy impact

While the judgment firmly reiterates that obtaining prior EC is a mandatory legal requirement under the Environment Impact Assessment Notification (EIA) Notification, 2006, it also provides an important policy direction that could have far-reaching implications for thousands of industries, infrastructure projects and real estate developments across India.

The Court has categorically held that project proponents who commenced construction or operations without obtaining prior EC and that did not apply under the earlier violation mechanisms, cannot now seek regularisation under the 2017 Notification or the 2021 Standard Operating Procedure (Office Memorandum). Those mechanisms are no longer available for fresh cases.

At first glance, this may appear to shut the door completely on pending violation projects. However, a closer reading of the judgment reveals a far more balanced and pragmatic approach. One of the most significant aspects is the Court's recognition that the central government continues to possess the statutory power under Section 3 of the Environment (Protection) Act, 1986 to frame a fresh statutory mechanism for dealing with violation cases, if considered necessary in the larger public interest.

The Court has made an important distinction between an administrative office memorandum, which cannot override the requirement of prior EC, and a statutory notification issued under the powers conferred by the Environment (Protection) Act. While the former has been held to be legally unsustainable, the latter remains a permissible legislative option, provided it is



Kalaiselvan Periyasamy

Environmental and social expert

carefully designed within the framework of environmental law.

This observation is likely to have significant policy implications. Across India, numerous industrial units, commercial developments, infrastructure projects and public utility projects remain in violation of the EC requirements for various reasons. Some projects proceeded due to regulatory uncertainty, others due to an incorrect interpretation of the law, while some simply failed to obtain the necessary approvals before commencement. Many such projects never applied under the earlier violation windows and have therefore been left without a legal pathway following the closure of the 2017 scheme and the striking down of the 2021 Office Memorandum.

The present judgment acknowledges this practical reality without compromising the fundamental principle that prior EC remains mandatory.

Where there is a balancing act

Importantly, the Court has not directed the central government to introduce a new regularisation scheme. Instead, it has clarified that the government may, if it considers it necessary, in the larger public interest, issue a fresh statutory notification providing a one-time opportunity for specified categories of violation projects.

The Court has also indicated the safeguards that such a notification must incorporate. Any future scheme cannot become a permanent "violate first, regularise later" mechanism. Instead, it should be strictly one-time, supported by statutory authority, and should include comprehensive environmental safeguards such as environmental damage assessment, remediation measures, environmental compensation and strict compliance conditions.

This balanced approach attempts to reconcile two equally important objectives. On one hand, environmental laws cannot encourage deliberate violations by allowing routine post-facto approvals, while on the other, indiscriminate

closure or demolition of every violation project may not always serve either environmental protection or the larger public interest, particularly where projects are otherwise environmentally acceptable and substantial investments have already been made.

The judgment therefore reinforces the principle that environmental governance should combine strict enforcement with practical and scientifically sound regulatory solutions.

For project developers, industries and infrastructure agencies, the immediate message is straightforward. No fresh applications can now be made under the earlier violation mechanisms. However, the judgment also leaves open the possibility that the central government may formulate a fresh statutory framework to address pending violation cases in an environmentally responsible manner.

The regulatory road ahead

Whether such a policy initiative will be undertaken now rests entirely with the central government. Given the large number of pending projects across various sectors, industry associations, infrastructure developers, environmental professionals and other stakeholders are expected to closely watch the government's next steps. The judgment has effectively closed the old regulatory route but has simultaneously acknowledged that Parliament's environmental legislation still provides sufficient statutory authority for a carefully structured one-time solution, should the government consider such intervention necessary.

The July 2026 judgment is therefore significant not merely because it settles the legal validity of earlier violation mechanisms, but also because it charts the contours of any future policy on environmental regularisation. It preserves the integrity of the prior EC regime while leaving sufficient legislative space for the government to address genuine legacy violations through a lawful, transparent, and environmentally robust statutory framework.

The top court's verdict closes existing environmental clearance regularisation routes while leaving scope for a new framework

- **Key Terms and Concepts**

- **Prior Environmental Clearance (Prior EC):** A mandatory statutory permission required before initiating any construction, land preparation, or operational activity for specified developmental projects under the Environment Impact Assessment (EIA) Notification, 2006.
 - *Example:* A thermal power plant or a large real estate project exceeding 20,000 m² of built-up area cannot break ground until an Expert Appraisal Committee (EAC) reviews its environmental management plan and grants clearance.
- **Ex-Post Facto Environmental Clearance:** The grant of retrospective approval to a project that commenced construction or operations without obtaining prior EC. It regularizes an illegality post-commencement.
 - *Example:* An industrial unit that has operated for three years without an appraisal seeking retroactive validation through monetary penalties to avoid demolition.
- **Environment Impact Assessment (EIA) Notification, 2006:** Subordinate legislation issued under the Environment (Protection) Act, 1986, categorizing projects into Category 'A' (appraised at the central level by MoEFCC) and Category 'B' (appraised at the state level by SEIAAs) based on spatial extent, resource usage, and ecological risk.
- **Section 3 of the Environment (Protection) Act (EPA), 1986:** An overarching statutory provision empowering the Central Government to take all necessary measures to protect and improve environmental quality, coordinate state actions, and establish regulatory frameworks.
- **Office Memorandum (OM) vs. Statutory Notification:**
 - *Office Memorandum (OM):* An internal administrative instruction issued by an executive ministry for routine governance; it cannot amend, dilute, or override statutory rules.
 - *Statutory Notification:* A formal legal instrument published in the Official Gazette under delegated parliamentary authority (e.g., Section 3 of EPA, 1986) carrying the force of enforceable law.
- **Doctrine of Fait Accompli:** A legal principle where an unlawful action is treated as an unchangeable reality simply because reversing it (e.g., demolishing a fully built port) would cause disproportionate economic or infrastructural loss.
- **Polluter Pays & Restitution Principles:** Environmental jurisprudence concepts mandating that a defaulting party must not only pay financial fines but also bear the full cost of restoring degraded ecosystems to their baseline state.

- **Core Arguments and Substantive Issues**

- The legal discourse surrounding environmental non-compliance balances constitutional mandates for ecological preservation with economic and infrastructural considerations.

- **The Inviolability of Prior Clearance**

- The foundational architecture of environmental jurisprudence treats prior appraisal as non-negotiable. Environmental damage is often irreversible; once an aquifer is contaminated or a forest corridor fragmented, financial compensation cannot restore baseline ecological functionality. Subordinate mechanisms that normalize retrospective regularisation dismantle the deterrent effect of environmental laws, incentivizing developers to build first and negotiate penalties later.

- **Invalidity of Administrative Short-Cuts**

- The executive branch cannot alter statutory mandates through executive circulars or Office Memoranda. When administrative guidelines introduce rolling, open-ended windows for regularizing violations, they act *ultra vires* (beyond the legal power) of the principal parent statute. Procedural regularisation cannot be sustained through casual administrative orders that lack legislative sanction and structured public scrutiny.

- **The Dilemma of Sunk Capital vs. Ecological Rule of Law**

- Indiscriminate demolition of functional infrastructure, public utilities, and industrial plants where substantial public capital has been committed can create severe socioeconomic disruptions, job losses, and non-performing assets. A balanced regulatory framework recognizes the sovereign legislative power under Section 3 of the EPA, 1986, to devise a strictly bounded, non-recurring, one-time statutory window for specific legacy projects—provided it enforces comprehensive damage assessments, deterrent financial compensation, and verifiable remediation plans.

- **Historical Evolution of the Environmental Clearance Regime**

- **Pre-1972 (Colonial and Early Post-Independence Era):** Environmental protection was fragmented across municipal statutes, the Indian Penal Code, 1860 (public nuisance provisions under Sections 268/290), and resource-specific laws like the Indian Forest Act, 1927. No systematic mechanism existed for assessing environmental risks before industrial commissioning.
 - **1972–1986 (Stockholm Conference to Bhopal Gas Disaster):** The 1972 UN Conference on the Human Environment prompted the 42nd Constitutional Amendment Act, 1976, inserting Articles 48A and 51A(g). Following the 1984 Bhopal Gas Tragedy, Parliament enacted the Environment (Protection) Act, 1986, serving as an umbrella statute empowering the Union Government to establish comprehensive environmental protection standards.
 - **1994 (First Formal EIA Notification):** Issued under the EPA 1986, making Environmental Clearance mandatory for 29 designated activities. It introduced institutionalized Environmental Impact Assessments and public hearings, administered centrally by the Ministry of Environment and Forests.
 - **2006 (Decentralized EIA Notification):** The clearance architecture was overhauled to decentralize project appraisal into Category 'A' (Central MoEFCC) and Category 'B' (State Environmental Impact Assessment Authorities - SEIAAs), introducing a four-stage process: Screening, Scoping, Public Consultation, and Appraisal.
 - **2017 (The One-Time Violation Window):** A 6-month statutory notification permitted projects operating without clearance to apply for regularisation subject to an Environmental Management Plan and financial penalties. While conceived as an exceptional one-off measure, it led to a backlog of pending cases.
 - **2021 (The Standard Operating Procedure via OM):** The executive introduced an ongoing, administrative SOP via an Office Memorandum to regularize violation cases continuously. This mechanism was challenged across high courts and tribunals for converting an exceptional window into a permanent parallel clearance track.
 - **Present Paradigm:** Administrative regularisation windows have been declared legally unsustainable. The baseline remains strict: prior clearance is mandatory, and any transition mechanism must be a one-time, non-extendable statutory measure grounded in Section 3 of the EPA, 1986, containing heavy penalties and ecological restitution.
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THE VANASHAKTI VS. UNION OF INDIA (2026) JUDGMENT: SUPREME COURT CLARITY ON ENVIRONMENTAL CLEARANCE (EC) DEBATES

PROJECTS OPERATING WITHOUT PRIOR EC



Projects Commencing Without Mandatory Prior Environmental Clearance (EC) under EIA Notification, 2006.

EIA 2006 (Mandatory EC) → Unauthorized Commencement → Debate on Regularization

OLD REGULARIZATION MECHANISMS CLOSED



Project Proponents Cannot Seek Regularisation under Defunct Paths.
FRESH CASES BARRED.



Administrative OM (Office Memorandum) - Legally Unsustainable

STATUTORY NOTIFICATION (Under Sec 3 EPA, 1986) - Permissible Legislative Option

Administrative Orders Cannot Override Statutory Requirements of PRIOR EC.

CENTRAL GOVERNMENT'S STATUTORY POWER RETAINED

Possibility of framing fresh STATUTORY MECHANISM if deemed necessary in larger public interest.



BALANCING ENVIRONMENTAL PROTECTION & PRACTICAL REALITY.



Strict but Practical Regulatory Solutions.

NO NEW APPLICATIONS UNDER OLD RULES. WATCH FOR NEW STATUTORY FRAMEWORK FROM GOVT.

- **Logical and Philosophical Base**

- The tension over environmental clearances represents a deeper conflict between competing jurisprudential and ethical models of development.
- **The Precautionary Principle:** Formulated internationally in the Rio Declaration (Principle 15) and integrated into Indian law via *Vellore Citizens' Welfare Forum (1996)*. It mandates that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not justify postponing cost-effective measures. Prior EC is the operational manifestation of precaution: assessing damage before it occurs.
- **The Public Trust Doctrine:** Originating in Roman law and applied in *M.C. Mehta vs. Kamal Nath (1997)*, this doctrine dictates that natural resources—forests, rivers, air, and coastal ecosystems—are held by the state in trust for the public. The state cannot casually waive environmental protections through executive orders.
- **Intergenerational Equity:** Development today must not compromise the environmental capital of future generations. Ex-post facto approvals undermine this balance by trading permanent ecological loss for short-term economic gains.
- **The Problem of "Moral Hazard":** Routine regularisation creates a perverse incentive structure: compliant industries face financial delays from rigorous appraisal, while non-compliant entities gain a competitive first-mover advantage by building unapproved sites, expecting small fines later.
- **Pragmatic Utilitarianism vs. Strict Rule of Law:** Pure ecological formalism requires the demolition of every non-compliant structure. However, developmental realism acknowledges that destroying critical infrastructure (such as wastewater plants, hospitals, or public transit corridors) wastes natural resources and human labor. The legal solution balances these concerns by combining strict prospective enforcement with structured, one-time remediation for historical anomalies.



- **Multidimensional Analysis**

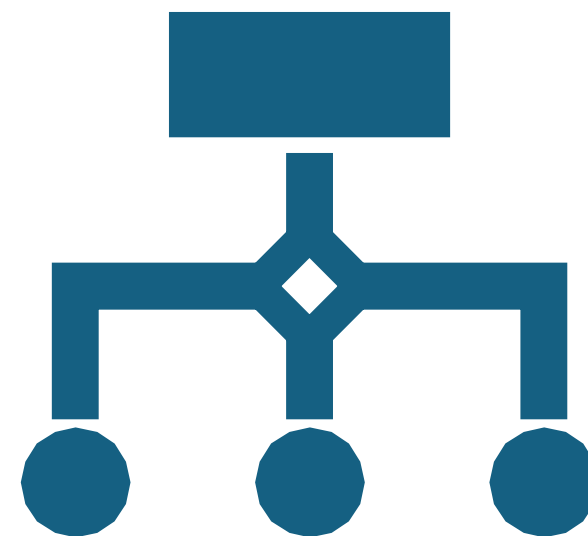
- **Legal Dimension:** Central to this issue is the boundary of subordinate legislation. Executive agencies cannot rewrite statutory regimes through administrative circulars. Section 3 of the EPA, 1986, allows central intervention, but it must conform to constitutional standards under Article 21 (Right to a Clean Environment) and pass the test of reasonableness under Article 14.
- **Economic Dimension:** Retrospective clearances often hinge on the "sunk capital" dilemma—billions invested in completed infrastructure. However, weak environmental oversight creates market distortions, penalizing law-abiding firms while degrading natural capital (e.g., groundwater depletion, air pollution), which imposes long-term systemic economic burdens on the country.
- **Political & Governance Dimension:** It highlights the operational dynamics of cooperative federalism. While the Union government formulates EIA frameworks, State Environmental Impact Assessment Authorities (SEIAAs) frequently face resource deficits, local political pressures, and severe technical backlogs, leading to prolonged delays that push developers toward non-compliance.
- **Social & Human Rights Dimension:** Environmental clearances require public consultation to protect frontline communities, agrarian workers, and indigenous populations. Bypassing prior EC circumvents the public hearing process, disempowering local stakeholders from voicing concerns over land loss, water contamination, and public health risks.
- **Ethical Dimension:** The regularisation debate pits anthropocentric utilitarianism (economic utility for human consumption) against ecocentrism (nature's intrinsic right to protection). Allowing a "pay-and-pollute" loophole reduces ecological stewardship to an accounting transaction.
- **International Dimension:** India is a signatory to the Rio Declaration, the Convention on Biological Diversity (CBD), and the Paris Agreement. A robust prior EIA process fulfills India's international obligations under Principle 17 of the Rio Declaration, maintaining the country's credibility in global climate diplomacy.



Linkages with NCERT Textbooks

Class & Textbook	Chapter Name	Analytical Core Connection
Class 11 Political Science: Indian Constitution at Work	Chapter 2: Rights in the Indian Constitution	Connects to Article 21 (Right to Life) expanded to include a healthy environment, alongside Directive Principles of State Policy (Article 48A) and Fundamental Duties (Article 51A(g)).
Class 11 Economics: Indian Economic Development	Chapter 9: Environment and Sustainable Development	Highlights carrying capacity, absorptive capacity, and the economic trade-offs between rapid capital formation and environmental degradation.
Class 12 Biology: Biology	Chapter 16: Environmental Issues	Examines the scientific basis of industrial pollutants, biological oxygen demand, air quality standards, and the ecological disruption caused by unregulated projects.
Class 12 Political Science: Contemporary World Politics	Chapter 8: Environment and Natural Resources	Details global environmental regimes, the Rio Earth Summit, sustainable development norms, and international commons governance.

- **Linkages with UPSC CSE Syllabus**
 - **General Studies Paper 1:**
 - *Urbanization, Infrastructure, and Environmental Geography:* Industrial corridor expansion, urban real estate growth, and the carrying capacity of regional ecosystems.
 - **General Studies Paper 2:**
 - *Executive vs. Judiciary:* Judicial review of subordinate legislation and administrative overreach.
 - *Statutory, Regulatory, and Quasi-Judicial Bodies:* Roles, structural limitations, and functioning of the National Green Tribunal (NGT), Central Pollution Control Board (CPCB), and SEIAAs.
 - **General Studies Paper 3:**
 - *Environmental Impact Assessment (EIA):* The structural process, clearance loopholes, and conservation versus development trade-offs.
 - *Economic Growth & Infrastructure:* Managing non-performing assets, industrial compliance costs, and ease of doing business without degrading natural ecosystems.
 - **General Studies Paper 4 & Essay:**
 - *Ethics in Governance:* The moral hazard of "pollute and pay," administrative integrity, corporate environmental responsibility, and value-based development planning.
 - **Optional Subjects:**
 - *Law:* Delegated legislation limits, *ultra vires* doctrine, public interest litigation, and international environmental law.
 - *Public Administration:* Regulatory capture, institutional friction between central and state appraisal authorities, and bureaucratic policy implementation.
 - *Geography:* Environmental degradation, industrial location analysis, and regional ecosystem planning.





- **Way Forward and Policy Recommendations**

- **Establish a Rigid, One-Time Statutory Framework:** If Parliament or the Union Government chooses to address legacy non-compliant units under Section 3 of the EPA, 1986, it must be framed through an unequivocal, non-extendable statutory notification rather than administrative circulars. This window must exclude high-impact, ecologically sensitive locations (e.g., Coastal Regulation Zone-I, wildlife corridors, and national parks).
- **Deterrent Restitution Escrow:** Financial penalties for violations must substantially exceed the profits gained from starting operations early. Penalties should be funneled into dedicated, auditable **Ecosystem Restitution Escrow Accounts**, spent exclusively on local bioremediation, afforestation, and water replenishment.
- **Institutional Upgrades for SEIAAs and EACs:** Many clearance violations stem from appraisal backlogs. Establishing professional, full-time secretariats for State Environmental Impact Assessment Authorities (SEIAAs), reducing bureaucratic interference, and mandating binding timeframes can prevent delays that drive developers toward illegal workarounds.
- **Digital Monitoring and Geo-Spatial Audits:** Integrate remote sensing and satellite data (e.g., ISRO/Bhuvan platforms) with the PARIVESH portal. Automated alerts triggered by unauthorized construction or land-use changes can detect non-compliance before projects become entrenched *faits accomplis*.
- **Independent, Accountable EIA Preparation:** Eliminate conflicts of interest where project proponents directly finance their own EIA consultants. Creating an independent, state-managed pool of accredited environmental appraisal agencies—funded through standardized proponent fees—will improve the baseline integrity of environmental impact reports.

- **UPSC CSE Mains**
 - **2020 (GS Paper 3):** "How does the draft Environmental Impact Assessment (EIA) Notification, 2020 differ from the existing EIA Notification, 2006?"
 - **2016 (GS Paper 3):** "Give an account of the development of the Environmental Impact Assessment (EIA) process in India. How does it help in achieving sustainable development?"
 - **2014 (GS Paper 3):** "Environmental Impact Assessment studies are increasingly undertaken before a project is cleared by the Government. Discuss the environmental impacts of coal-fired thermal power plants."
 - **2019 (GS Paper 2):** "The process of judicial review in environmental matters often encounters the dilemma of development versus conservation. Analyze with reference to recent judgments."
 - **2018 (GS Paper 4):** "State the ethical concerns involved in balancing industrial development with the rights of tribal communities and ecological stability."
- **APSC (Assam Public Service Commission)**
 - **APSC CCE Mains (GS Paper 5 - Environment):** "Analyze the importance of the Environmental Impact Assessment (EIA) process in the context of infrastructure development in ecologically fragile zones like Northeast India."
 - **APSC CCE Mains (GS Paper 3):** "Discuss the powers and functions of the State Environmental Impact Assessment Authority (SEIAA) in balancing industrial growth and ecological security in Assam."
 - **APSC CCE Prelims:** Questions on the Environment (Protection) Act, 1986, provisions under the National Green Tribunal Act, 2010, and notifications governing Eco-Sensitive Zones (ESZs) across Northeast India.



India's manufacturing puzzle

INDUSTRY BLUES. Rise in capital intensity keeps Indian industry afloat, but its efficiency and job creation are doubtful



SUNIL KUMAR SINHA

Lack of growth and dynamism in India's manufacturing sector in relation to the services sector is often cited as one of the key reasons for the country not being able to generate adequate employment and take advantage of demographic dividend.

The government has announced policies for accelerating the growth of manufacturing sector, starting with National Manufacturing Policy in 2011, to Make in India in 2014 to Production Linked Incentive (PLI) Scheme in 2020 to Atmanirbhar Bharat also in 2020.

The latest data available for FY24, from the Annual Survey of Industries, has been analysed by categorising them into two periods — FY01-FY05, FY06-FY10, FY11-FY15, FY16-FY20 and FY21-FY24.

CAPITAL INTENSITY VS EFFICIENCY

Automation, artificial intelligence and lean manufacturing are driving the manufacturing landscape across the globe, and they are reducing the employment generation potential of the manufacturing sector. This would mean higher capital labour (fixed capital/worker) and output-capital ratio (value of output/fixed capital) ratio over the years.

However, ASI data show mixed results for India. While the capital labour ratio (capital intensity) has increased on a sustained basis over the FY01-FY24 period, the output-capital ratio (output intensity) shows a decline after FY06-FY10.

In fact, the turning point of the output-capital ratio nearly coincided with the global financial crisis as it fell sharply to 2.5% in FY10 from 3.3% in FY07. It could not recover to 3.0% till FY12. This is also reflected in the return on capital/capital efficiency, which rose till FY09 and then declined till FY20.

The data indicate a profound structural shift in the Indian manufacturing landscape with respect to capital intensity and capital efficiency. There was co-movement in capital intensity and capital efficiency during FY01 to FY09 due to strong domestic demand, global integration, and high capacity utilisation. However, after the global financial crisis decoupling occurred in capital intensity skyrocketed from 12.0% in FY09 to 27.3% in FY20, but capital efficiency plummeted from 19.8% in FY09 to 9.4% in FY20.

This looks like a classic case of diminishing returns on capital, orchestrated by structural bottlenecks such as high land/power costs, logistics inefficiencies, leading to deployment of more capital per worker just to stay competitive.

The recent years show a partial rebound in capital efficiency, stabilising around 15%, while capital intensity has reached an all-time high of 29.0% in

Capital labour ratio

(Fixed capital/worker)



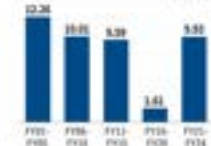
Output capital ratio

(Value of output/fixed capital)



Labour productivity growth

(% p.a.)



Source: Annual Survey of Industries

FY24. Corporate profitability though has recovered now from its pre-pandemic lows due to aggressive cost-cutting, formalisation, and corporate tax cuts, it is still significantly lower than FY05-FY09.

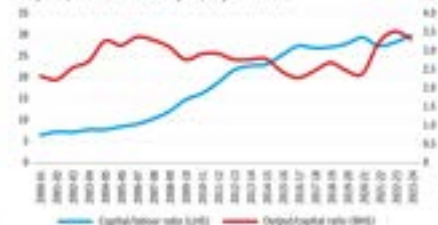
This persistent divergence between high capital requirements and moderate returns perhaps is the reason why a broad-based, secular private greenfield capex has remained elusive despite healthy corporate balance sheets in India.

To protect returns on capital, therefore, the focus has been on brownfield expansions which essentially means defuncting and expanding existing plants rather than building new one. The continuous rise of capital intensity is no doubt keeping Indian manufacturing globally competitive but is limiting formal employment generation. This, in turn, has dampened domestic consumption demand, creating a cyclical-feedback loop where corporations have held back investment because consumer demand isn't strong enough to absorb the production capacity.

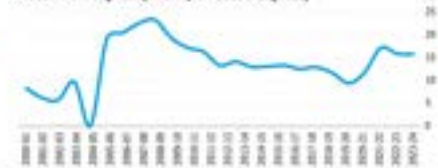
This is reflected in RBI's capacity utilisation data for the manufacturing sector which has remained in the range of 70-75 per cent since FY15.

LABOUR PRODUCTIVITY Labour productivity in the manufacturing shows a gaiting potential

Capital/labour and output/capital ratio



Return on capital (Profit/invested capital)



Source: Annual Survey of Industries

decline. It grew at an average annual rate of just 1.61 per cent during FY16-FY20 compared to 12.36 per cent and 10.01 per cent during FY01-FY05 and FY06-FY10 respectively.

However, it recovered to an average annual rate of 9.55 per cent during FY20-FY24, but remained quite volatile and dropped from 25.29 per cent in FY21 to 11.09 per cent in FY23 and further to 0.35 per cent in FY24.

This volatility in labour productivity though may be due to the pandemic impact, but such volatility has been observed even during normal years in the past.

This shows that Indian manufacturing sector which faced serious labour productivity challenge during the second half of the previous decade, is still not out of the woods and continues to face the productivity imperative.

Although the reasons for slowing down in labour productivity during the first quinquennial period considered would be different, the trend suggests that once the low hanging fruits of enhancing labour productivity were over, sustaining its growth became difficult in the absence of structural reforms which (i) fosters innovation, (ii) facilitates diffusion of new technology and (iii) governments are to structural reforms.

The persistent divergence between high capital requirements and moderate returns perhaps is the reason why a broad-based, secular private greenfield capex has remained elusive

reduces the resource misallocation of both capital and labour.

A more efficient reallocation of labour and capital from low productive to high productive sectors can improve both labour productivity growth and make it more sustainable. A study by Hsieh and Klenow (2009) shows that when capital and labour are hypothetically reallocated to equalise marginal products to the extent observed in the US, the total factor productivity (TFP) of India's manufacturing sector increases by 40-60 per cent.

On the other hand, when the reallocation mechanism stalls the aggregate Total Factor Productivity (TFP) growth tends to be lower. An RBI study for India on the resource

"reallocation effects" suggests that the contribution of resource allocation to TFP growth declined to 42 per cent of the aggregate TFP during 2011-2019 from 62 per cent during 2003-2010.

The productivity increases in India after 2010 have been driven mainly by within-industry TFP increases and less by resource reallocation effects across industries.

Longer and sustainable labour productivity growth, therefore, critically depends on how much businesses invest in innovation, knowledge and intangible capital and how committed governments are to structural reforms.

Therefore, unless the focus of policy is on addressing market distortions, reducing skill mismatches and ensuring greater product and labour market flexibility, accelerating manufacturing sector growth and its share rise to 25 per cent of GDP will remain a distant dream.

The author is Professor of Economics at Institute of Development and Communications (IDC) Chandigarh. Views expressed are personal.

• Key Terms and Explanations

- **Capital-Labour Ratio (K/L):** The proportion of fixed capital (machinery, physical infrastructure, technology) deployed per unit of labour in production.
 - *Example:* An automobile assembly line replacing manual welders with robotic arms raises its capital-labour ratio from 10 × to 28 ×, deploying more capital for every active factory-floor worker.
- **Output-Capital Ratio (Y/K):** A core metric of capital efficiency measuring the monetary value of output generated per unit of fixed capital invested.
 - *Example:* If an industrial plant worth ₹100 crore produces goods worth ₹300 crore annually, the output-capital ratio is 3.0 ×. A falling ratio indicates declining capital efficiency.
- **Return on Capital Employed (ROCE):** The ratio of operating profit to total capital invested, reflecting how remunerative industrial investments are over time.
- **Total Factor Productivity (TFP):** The portion of economic output growth not accounted for by increases in factor inputs (labour and capital). It reflects efficiency, technological innovation, skill levels, and managerial capabilities.
- **Resource Misallocation (Hsieh-Klenow Framework):** The sub-optimal distribution of capital and labour across firms within an economy. When distorted regulations trap capital and labour in unproductive enterprises instead of letting them move to high-productivity firms, aggregate national output drops significantly.
- **Greenfield vs. Brownfield Capex:**
 - *Greenfield Capital Expenditure:* Setting up completely new industrial facilities from scratch on undeveloped land.
 - *Brownfield Capital Expenditure:* Expanding, debottlenecking, or modernising existing industrial plants.
- **Capacity Utilisation:** The extent to which an industrial enterprise actually uses its installed productive potential. Persistent utilisation rates below 75--80% generally discourage businesses from undertaking fresh greenfield investments.
- **Premature Deindustrialisation:** A structural anomaly where an economy bypasses the traditional transition from agriculture to labour-intensive manufacturing, jumping straight into services without absorbing surplus low-skilled labour.

- **Main Arguments and Substantive Parts**

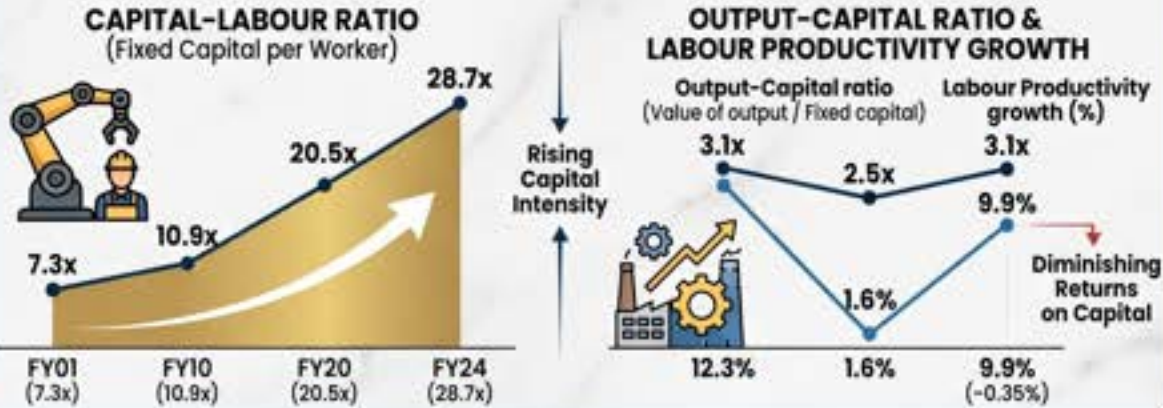
- **The Capital-Deepening Surge:** Over the last two decades (FY01 to FY24), Indian manufacturing has steadily shifted toward higher capital intensity, with the capital-labour ratio rising from 7.31 $\times$ to 28.68 $\times$. Automation, advanced machinery, and lean manufacturing have been deployed to maintain global competitiveness.
- **Decoupling of Capital Intensity and Efficiency:** While physical capital per worker quadrupled, capital efficiency did not keep pace. The output-capital ratio peaked during FY06–FY10 (3.1 $\times$) and fell to 2.5 $\times$ in FY16–FY20, recovering to 3.1 $\times$ only by FY21–FY24. Return on invested capital experienced a protracted decline from FY08 to FY20.
- **The Brownfield Investment Preference:** High initial capital requirements alongside moderate returns have made broad-based private greenfield capex sluggish. Corporates have focused primarily on brownfield debottlenecking to defend operating margins rather than building new manufacturing capacity.
- **The Aggregate Demand Feedback Loop:** Because capital-intensive manufacturing generates fewer direct shop-floor jobs, it restricts broad-based income growth. This curbs domestic consumption demand, which in turn keeps manufacturing capacity utilisation range-bound at 70–75% and delays private investment.
- **Productivity Growth Bottlenecks and Factor Misallocation:** Labour productivity growth slowed sharply to an average of 1.61% per year during FY16–FY20 before recovering to 9.93% in FY21–FY24, yet it remains volatile (dropping to –0.35% in FY24). The contribution of dynamic resource reallocation to Total Factor Productivity fell from 82% (2001–2010) to 42% (2011–2019), highlighting structural rigidities across land, labour, and capital markets.

- **Historical Evolution of the Issue**
 - **Colonial De-industrialisation (Pre-1947):** India was transformed into a supplier of raw materials and a market for British industrial goods. Traditional artisan manufacturing collapsed without a modern domestic industrial base taking its place.
 - **Heavy Industrialisation and Import Substitution (1950s–1970s):** Under the Nehru-Mahalanobis strategy (Second Five-Year Plan), the state prioritised state-led, capital-intensive heavy industries (steel, heavy machinery, power). While this built an industrial foundation, the Licence-Permit Raj, import controls, and small-scale industry reservations limited scale economies and private job creation.
 - **Gradual De-licensing and the 1991 LPG Reforms (1980s–1990s):** The 1991 balance-of-payments crisis catalyzed trade liberalisation, tariff rationalisation, and the dismantling of industrial licensing. However, India's growth path bypassed mass manufacturing and shifted directly from agriculture to high-skill services (IT, finance).
 - **The Credit and Capex Boom (2000–2008):** High global growth, infrastructure build-outs, and aggressive credit expansion generated a manufacturing upswing with high TFP gains and healthy output-to-capital ratios.
 - **Post-GFC Stagnation and Twin Balance Sheet Crisis (2009–2019):** After the 2008 Global Financial Crisis, overleveraged corporations and bad loans in public sector banks led to an investment freeze. Resource allocation stalled, capacity utilisation dipped, and capital returns declined.
 - **Modern Industrial Revival Policies (2020–Present):** Initiatives such as the National Manufacturing Policy, *Make in India*, the Production-Linked Incentive (PLI) schemes, corporate tax cuts, and *Atmanirbhar Bharat* sought to position India as a global manufacturing hub amid global supply chain shifts.

COMPREHENSIVE ANALYSIS: INDIA'S MANUFACTURING PUZZLE & PATHS FORWARD

UPSC CSE GUIDE: KEY TERMS, TRENDS, & REFORMS

THE QUANTITATIVE PICTURE: UNPACKING INDIA'S MANUFACTURING TRENDS



MAIN ARGUMENTS: THE PUZZLE UNVEILED



HISTORICAL EVOLUTION OF INDIA'S MANUFACTURING LANDSCAPE



KEY TERMS & EXPLANATIONS



MULTIDIMENSIONAL IMPACTS & CHALLENGES



UPSC & NCERT LINKAGES

NCERT		UPSC	
Class 11	Indian Economic Development Ch 2, 3, 7 (LPG, Jobless growth)	UPSC GS Papers GS-1: Urbanisation, Demographic dividend GS-2: Policies (PLI, Labour Codes) GS-3: Economy (Growth, Employment, TFP), Investment models GS-4: Ethics in automation Essay & Optionals	
Class 12	Macroeconomics Ch 2, 4 (Investment, Demand)		
Class 12	Geography Ch 8 (Industries)		



Logical and Philosophical Base		
Dimension	Underlying Premise	Applied Reality & Structural Tension
Lewis Dual-Sector Model	Surplus agrarian labour migrates to high-productivity urban manufacturing at subsistence wages, generating industrial capital accumulation.	Rising automation and capital intensity limit factory absorptive capacity, stranding surplus labour in informal work or low-yield agriculture.
Kaldor’s Growth Laws	The manufacturing sector acts as the primary engine of GDP growth, structural transformation, and economy-wide productivity spillovers.	Capital accumulation without proportional job creation restricts mass purchasing power, muting structural transformation.
Endogenous Growth Theory	Long-run productivity is driven by human capital, innovation, R&D, and knowledge spillovers rather than just physical machines.	Manufacturing gains driven by equipment upgrades reach a ceiling when not supported by workforce skill development and innovation.
Utilitarian & Capability Approaches	Industrial development should expand human freedoms, generate decent work, and improve baseline social welfare (Sen/Rawls).	Growth concentrated in capital-heavy sectors deepens wage-share disparities, prioritising capital returns over broad employment generation.

- **Multidimensional Analysis**

- **Social Dimension:** The gap between high output growth and low labour absorption fuels informalisation, job insecurity, and underemployment. Young workers seeking formal industrial work often remain underutilised, putting pressure on demographic dividend timelines.
- **Political Dimension:** Governments face the challenge of balancing capital subsidies (PLI, corporate tax cuts) with public demand for employment guarantees, direct cash transfers, and welfare support. Regional industrial clusters in Western and Southern coastal states continue to outpace Central and Eastern regions, widening sub-national economic divides.
- **Legal and Regulatory Dimension:** Strict legacy regulations on labour, contract employment, and land acquisition have historically incentivised firms to substitute labour with machinery. The four consolidated Labour Codes (Wages, Industrial Relations, Social Security, Occupational Safety) aim to rationalise compliance, but state-level notification and enforcement remain uneven.
- **Ethical Dimension:** Increasing automation in a labour-surplus country presents an ethical trade-off between maximizing firm-level efficiency and upholding the social responsibility of decent work creation. Widening gaps between capital income and labour income raise concerns over economic equity.
- **International and Geopolitical Dimension:** Global shifts toward "China+1" diversification, Western near-shoring, and high non-tariff barriers (like the EU's Carbon Border Adjustment Mechanism) require Indian manufacturers to adopt modern, low-emission technologies, reinforcing the shift toward capital intensity.
- **Economic Dimension:** Persistent capacity utilisation below 80% keeps private greenfield capex cautious. Without sustained factory hiring, consumer demand remains uneven, increasing dependence on public capital spending to drive the broader investment cycle.

- **Linkages with NCERT Textbooks**

- **Class 11 Economics (*Indian Economic Development*):**

- *Chapter 2: Indian Economy (1950–1990)*: Provides the context for the Mahalanobis strategy, structural import-substitution, and industrial licensing.
 - *Chapter 3: Liberalisation, Privatisation, and Globalisation*: Explains tariff rationalisation, industrial deregulation, and exposure to foreign competition.
 - *Chapter 7: Employment: Growth, Informalisation and Other Issues*: Directly addresses the challenge of jobless growth, declining employment elasticities, and the casualisation of the workforce.

- **Class 12 Economics (*Introductory Macroeconomics*):**

- *Chapter 2: National Income Accounting*: Details concepts of investment, capital formation, depreciation, and Gross Fixed Capital Formation (GFCF).
 - *Chapter 4: Determination of Income and Employment*: Explains how aggregate investment demand, the multiplier effect, and excess capacity interact to determine equilibrium output.

- **Class 12 Geography (*India: People and Economy*):**

- *Chapter 8: Manufacturing Industries*: Examines spatial patterns, raw material linkages, infrastructure access, and industrial clusters across Indian states.
-

- **Linkages with UPSC CSE Syllabus**

- **General Studies Paper 1:**

- *Salient features of Indian Society and Population Issues:* Realising the demographic dividend, managing distress migration from rural agriculture, and urbanisation pressures around industrial hubs.

- **General Studies Paper 2:**

- *Government Policies and Interventions:* Assessment of industrial schemes (*Make in India*, National Logistics Policy, PLI), centre-state industrial dynamics, and ease of doing business reforms.

- **General Studies Paper 3:**

- *Indian Economy and Issues Relating to Planning, Mobilisation of Resources, Growth, and Employment:* Capital formation, structural transformation, employment generation, Total Factor Productivity, manufacturing share in GDP, and logistics costs.

- **General Studies Paper 4:**

- *Ethics and Human Interface / Corporate Governance:* Ethical challenges of rapid automation in labour-rich societies, human-centred technological transitions, and corporate responsibility in workforce upskilling.

- **Essay Paper:**

- *Thematic Alignment:* Topics covering "India's demographic window of opportunity: Dividend or Disaster?", "Rethinking industrialisation in the era of artificial intelligence", and "Growth without jobs: The Indian paradox".

- **Optional Subjects:**

- *Economics:* Factor market distortions, Hsieh-Klenow misallocation models, Total Factor Productivity estimation, and structural change models (Lewis, Kaldor, Rodrik).
- *Public Administration:* Administrative bottlenecks, industrial policy implementation, regulatory compliance burdens, and public sector capex planning.
- *Geography:* Spatial agglomeration, industrial location theories (Weber), SEZs, and industrial corridors.

- **Way Forward**

- **Promote Labour-Intensive and High-Export Sectors:** Complement high-tech capital-intensive PLI sectors with targeted incentives for textiles, apparel, leather, footwear, gems, and food processing to generate large-scale formal employment.
- **Rationalise Factor Markets and Implement Labour Codes:** Work with states to operationalise the four Labour Codes, balancing operational flexibility for enterprises with verifiable social security nets and portable benefits for workers.
- **Lower Logistics and Infrastructure Costs:** Accelerate multi-modal infrastructure via the PM Gati Shakti Master Plan and the National Logistics Policy to reduce logistics costs from roughly 12--14% of GDP to global benchmarks (8%), helping offset non-labour costs for businesses.
- **Support MSMEs and Reduce Factor Misallocation:** Improve MSME access to formal credit through digital underwriting and TReDS, lower compliance costs, and facilitate cluster-based common facility centres to allow small firms to achieve scale economies.
- **Invest in Human Capital and Intangible Assets:** Align technical, vocational, and industrial training (ITI) curricula with Industry 4.0 requirements (robotics, CNC machining, IoT) while incentivising private R&D and design capabilities.
- **Support Industrial Clusters via Plug-and-Play Parks:** Develop ready-to-use industrial parks with pre-cleared environmental permissions, uninterrupted green power, and water connections to reduce upfront capital requirements for greenfield investments.

UPSC CSE Mains

- **2023 (GS 3):** "Faster economic growth requires an increase in the share of the manufacturing sector in GDP, particularly of MSMEs." Comment on the present policies of the Government in this regard.
- **2022 (GS 3):** Is inclusive growth possible in market economy? State the significance of financial inclusion in achieving economic growth in India.
- **2021 (GS 3):** "Account for the failure of manufacturing sector in achieving the goal of labour-intensive exports rather than capital-intensive exports." Suggest measures for more labour-intensive exports.
- **2019 (GS 3):** "Defining potential GDP and its determinants, explain the reasons that have been inhibiting India from realizing its potential GDP."
- **2017 (GS 3):** "Industrial growth rate has lagged behind in the overall growth of Gross-Domestic-Product (GDP) in the post-reform period." Give reasons. How far do the recent changes in industrial policy help improve the situation?

APSC (Assam Public Service Commission) Questions

- **APSC CCE Prelims (2022):** The 'Make in India' initiative was launched by the Government of India primarily to:
 - (a) Boost services exports
 - (b) Facilitate investment, foster innovation, and build world-class manufacturing infrastructure
 - (c) Subsidise agricultural raw materials
 - (d) Promote primary sector raw material export
- **APSC CCE Mains (2020, GS 3):** "Assam and the North-Eastern region suffer from historical industrial lag despite having rich natural resources." Critically analyze the structural constraints in industrialisation and discuss the role of the North East Industrial Development Scheme (NEIDS).
- **APSC CCE Mains (2022, GS 3):** Discuss how the Act East Policy can be leveraged to establish competitive, export-oriented manufacturing clusters in Assam and the North-Eastern region.



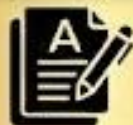
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