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EDITORIAL ANALYSIS

MAY 7

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Op Sindoor enforced our red lines

A future crisis with Pakistan must be treated as part of a wider collusive challenge

LT GEN DS HOODA (RETD)
FORMER NORTHERN ARMY COMMANDER

INFO WARFARE | Even though Pakistan suffered extensive damage, its narrative claimed victory over India. FILE PHOTO

ONE year ago, on the night of May 6-7, 2025, India carried out precision strikes on nine terrorist targets in Pakistan, including the headquarters of Lashkar-e-Taiba at Muridke and of Jaish-e-Mohammed at Bahawalpur. This came in response to the horrific massacre of Indian tourists in Pahalgam by terrorists linked to Lashkar-e-Taiba. Code-named Operation Sindoor, it marked a new phase in India's resolve to enforce its counter-terrorism red lines.

The crisis escalated as Pakistan launched hundreds of drones into Indian airspace. As the fighting continued, the Indian Air Force carried out damaging strikes on Pakistani airbases at Chaklala, Rafiqui, Rahim Yar Khan, Sargodha, Bholari and Jacobabad on the night of May 9-10. On May 10, Pakistan's Director General of Military Operations called up his Indian counterpart with a request for a ceasefire, which was accepted.

Operation Sindoor lasted only 88 hours, but its brevity should not be confused with limited significance. It offers important lessons for how the Indian military should prepare for the next crisis with Pakistan. Four imperatives stand out.

The first is an intense and compressed battle cycle. Operation Sindoor demonstrated how quickly a crisis can escalate, both vertically through the expanding use of force and horizontally across a wider geography. While the operation was largely confined to the land and air domains, the next crisis could extend to the maritime domain, with naval forces playing a more active role. The geography of conflict will also expand into the digital realm, with cyber operations targeting critical infrastructure.

In such a conflict, war will no longer unfold in a neat sequence. Intelligence, targeting, precision strike, air defence, drone warfare, escalation management, diplomatic outreach and information operations will occur almost simultaneously. This demands a high state of military readiness as the side that enters the crisis with prepared options will enjoy a decisive advantage over the side that improvises under pressure.

This is also where jointness will be tested. In a short, high-intensity conflict, delays caused by service silos can become strategic vulnerabilities. What is essential is integrated planning, common target folders, interoperable communications, shared situational awareness and pre-agreed escalation options. Jointness, therefore, must not be treated as a fashionable slogan but the fundamental operational grammar of the compressed battle cycle.

Second, new technologies are no longer lessons to be drawn from distant wars but are already present on our battlefields. Operation Sindoor was described as South Asia's first drone war. In the year since, we are seeing a much greater induction of drones in the inventories of both militaries. Drone warfare will be central in the next conflict.

> India must be prepared for a compressed crisis that unfolds in hours and the larger war that may follow if escalation is not contained.

Future crises are also likely to see greater use of long-range standoff weapons and precision missiles, allowing air forces to strike without crossing borders. Because such attacks are launched from a distance and viewed on screens far from the battlefield, they can appear controlled, clinical and almost risk-free. That makes them politically attractive. But this perception is dangerous. When both sides believe they can strike from afar without paying an immediate price, the threshold for using force may lower, and escalation can become faster.

Third, information warfare is no longer a sideshow, but a central theatre of conflict. In Operation Sindoor, even as kinetic strikes were being carried out, a fierce parallel battle of perceptions unfolded across television screens, media outlets and social networks. The information space was flooded with fake news, exaggerated claims, misinformation and disinformation. Even though Pakistan suffered extensive damage, its narrative claimed victory over India.

Pakistan has attempted to frame India's counter-terrorism response as an unprovoked attack, and its own response as measured and aimed at protecting its territorial integrity. India must not allow that framing to take hold. The information campaign must, therefore, begin before the first strike, with credible evidence, prepared diplomatic briefs, rapid public communication and a clear explanation of the threshold that has been crossed.

There is also a domestic lesson. Some sections of the Indian television media became amplifiers of misinformation during Operation Sindoor. Such behaviour undermines national credibility and must be checked by the government. When media institutions distort reality, they inhibit India's ability to project a legitimate picture to the global audience.

The fourth and perhaps the most important lesson concerns the China-Pakistan nexus. India was not dealing with Pakistan in isolation. It was dealing with a Pakistani military system increasingly equipped, enabled and diplomatically cushioned by China. The clearest warning came from India's Deputy Chief of Army Staff, Lt Gen Rahul R Singh, who said after the operation that India had "one border" but was facing more than one adversary, with Pakistan in front and China providing support.

The old distinction between the western and northern fronts is becoming less clear. China need not open a front in Ladakh to influence an India-Pakistan crisis. It can do so through platforms, sensors, intelligence feeds and diplomatic signalling. Operation Sindoor was not only an India-Pakistan clash, but a preview of collusive pressure below the threshold of a formal two-front war.

The implication for India is clear. A future crisis with Pakistan must be treated as part of a wider collusive challenge. Operational planning must account for Chinese-origin platforms in Pakistan's inventory, real-time data support and the likelihood that every engagement will be studied by Beijing as a live test of Indian tactics and strategy. Operation Sindoor showed that Pakistan may be the immediate adversary, but the system behind it is increasingly Chinese-enabled. India's preparedness must reflect that reality.

A final caution is necessary. Operation Sindoor offers important lessons for the next India-Pakistan crisis, but it should not be taken as a template for all future wars. It was largely an air and missile campaign, with the Army and the Navy playing peripheral roles. A longer war, especially one involving major ground operations and sustained maritime conflict, would impose very different demands in terms of logistics, reserves, industrial capacity and national endurance. India must be prepared for both a compressed crisis that unfolds in hours and the larger war that may follow if escalation is not contained.

- **Key Terms and Explanations**
- **Red Lines:**

Red lines are limits beyond which a State signals that it will respond firmly. In India's security context, this means that major terror attacks backed from across the border cannot be treated as routine law-and-order incidents. They become matters of national security, deterrence and sovereignty.

- **Counter-Terrorism:**

Counter-terrorism refers to the use of intelligence, policing, military action, diplomacy, financial tracking and legal measures to prevent, punish and deter terrorism. For India, this includes action against terror infrastructure, handlers, financing networks and ideological ecosystems.

- **Compressed Crisis:**

A compressed crisis is a security situation that escalates very quickly within hours or days. Decisions on intelligence, military response, diplomacy, media messaging and escalation control must happen almost simultaneously.

- **Escalation Management:**

This means responding strongly without allowing the situation to spiral into full-scale war. It requires political control, military precision, diplomatic messaging and calibrated use of force.

- **Drone Warfare:**

Drone warfare involves unmanned aerial systems used for surveillance, targeting, attacks and psychological pressure. It reduces immediate risk to soldiers but increases the speed and ambiguity of conflict.

- **Precision Strikes:**

These are targeted military actions aimed at specific terror camps, military assets or infrastructure while avoiding wider civilian or uncontrolled damage.

- **Information Warfare:**

Information warfare is the battle over public perception. It includes propaganda, misinformation, disinformation, fake news, selective leaks and psychological operations.

- **Two-Front Challenge:**

India's security planning must account for simultaneous or coordinated pressure from Pakistan and China. This includes military, cyber, diplomatic and technological dimensions.

- **Main arguments**
  - **Core thesis**

- The central argument is that India's response established that cross-border terrorism will now be treated through harder and more direct deterrent signalling, but future crises cannot be viewed only as India versus Pakistan because the broader strategic backdrop includes Chinese support, technology, and diplomatic cushioning for Pakistan.
- Thus, the real lesson is not just tactical success; it is the need to prepare for rapid, multi-domain, politically intense crises that may expand horizontally and vertically.

- **Substantive claims**

- First, the operation showed that crises can escalate quickly from a counter-terror strike to drone exchanges, airbase targeting, and ceasefire bargaining within a very short time window.
- Second, older assumptions of a neat sequence—terror attack, diplomatic protest, gradual military response—are no longer adequate, because modern conflict now merges intelligence, precision firepower, cyber tools, drones, and media operations almost at once.
- Third, information warfare has become a strategic front of its own, as Pakistan's domestic narrative reportedly projected success despite sustaining damage, revealing that perception management can dilute military signalling.
- Fourth, the wider concern is geopolitical: Pakistan may be the immediate adversary, but its military resilience is increasingly linked to Chinese systems, platforms, and strategic backing.

- **Supporting reasoning**

- The article supports its thesis by highlighting the speed of escalation, the broadening of the battlespace, the role of drones, and the media struggle over legitimacy and interpretation.
- It also underlines that future crises may open pressure points beyond the India-Pakistan axis, especially in relation to the northern frontier and technologically enabled support systems.

- **Counterarguments**

- A counter-view would hold that such operations may deter terror temporarily but may not dismantle the structural incentives of state-sponsored proxy warfare.
- Another criticism is that tactical success can be overstated if the adversary converts military setback into domestic political consolidation or a grievance narrative.
- A third concern is escalation risk: short, intense crises can produce miscalculation, especially when both sides possess nuclear weapons and use public rhetoric for signalling.

- **Historical evolution**
- **Pre-independence roots**

- The deeper roots lie in colonial frontier management, communal politics, and the strategic partition of the subcontinent in 1947, which created unresolved territorial and identity disputes, especially over Jammu and Kashmir.
- Partition violence and the first India-Pakistan war embedded security distrust into the very birth of the two states.

- **Post-independence phases**

- 1947–48 established Kashmir as the central dispute and militarised bilateral relations early.
- 1965 reinforced the pattern of conventional conflict linked to revisionist pressure from Pakistan.
- 1971 transformed the regional balance and deepened Pakistan's search for asymmetric tools after the creation of Bangladesh.
- The late 1980s onward saw Pakistan-backed cross-border militancy emerge as a more sustained instrument in Kashmir.
- 1998 nuclearisation changed the strategic environment by creating a paradox: full war became costlier, but subconventional conflict under the nuclear shadow became more tempting.

- **Contemporary milestones**

- The 1999 Kargil conflict showed limited war under nuclear conditions.
- The 2001 Parliament attack and 2008 Mumbai attacks sharpened India's debate on restraint versus retaliation.
- The 2016 surgical strikes signalled willingness to cross the Line of Control for limited punitive action.
- The 2019 Balakot airstrikes marked a further departure by striking beyond the immediate contested zone into mainland Pakistan-linked space.
- The 2025 Operation Sindoor, as described in the article and related reporting, pushed the doctrine toward a combination of precision targeting, multi-domain signalling, drone-era escalation, and explicit red-line enforcement.

- **Long-term policy evolution**

- Broadly, India's trajectory has moved from strategic restraint, to controlled retaliation, to a doctrine of calibrated but visible punishment.
- At the same time, the conflict frame has widened from terrorism alone to terrorism embedded in a larger collusive strategic environment involving technology, diplomacy, and regional power competition.

AXIA IAS ACADEMY PREMIER ANALYSIS: SHIFTING PARADIGMS IN SOUTH ASIAN SECURITY

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1. KEY TERMS EXPLAINED

Red Lines
Red lines are undled in and solt al secretary explaination within the homs of exchanoment.

Collusive Challenge
Collusive challenge is mamor collanation of chinese misreon unifent and-egrone challenges.

Jointness
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Info-Warfare
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2. MAIN ARGUMENTS

- **The Shift from Reactive to Proactive**
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- **The One Border Reality**
  The One border law khing interenss to lity to neactive reality as clear flow-dorment in the boerders.
- **Tech as a Force Multiplier**
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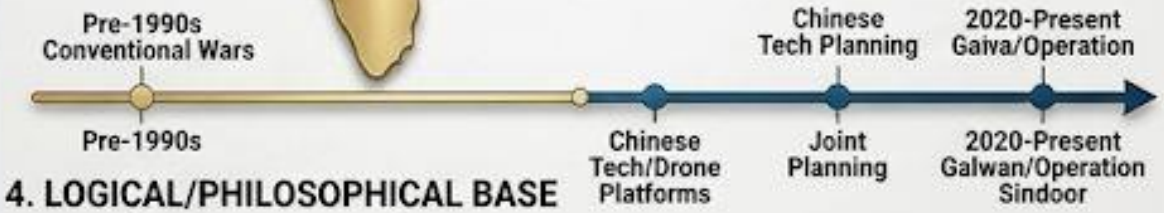
- **The Perils of Narrative**
  The perils of targams ronemenat and prectintion realiting, and imfo detusive contents io the perils of narrative

3. HISTORICAL EVOLUTION



4. LOGICAL/PHILOSOPHICAL BASE

Realism

Deterrence Theory

5. UNIQUE FEATURES

- **Compressed Crisis**
  Compressed crisis-nunics Crisis
- **Drone-Centric**
  Drone-as-axcepted Drone Platforms
- **Pre-emptive Information Maneuver**
  Pre-emptive frotquirements

6. MULTIDIMENSIONAL ANALYSIS

Key point
Social dater in recessory

Political in Legal ericssure under planning

Key point
International Economic

Key point
Internation/ information indemanding

Key point
Pre-emptical Information Maneuver

Ethical Internationalsr ascolainueic and maiting

7. CHALLENGES AHEAD

Implementation Gaps
Implementation gaps to enoaliture coneratons to implementation.

Escalation Ladder
Escalation ladder in encnungement to porenttura ontientomoneraities

8. WAY FORWARD

Accelerate Theaterization
Accelerate theaterizend inforsoomevination

Information Command
Information command, tnchannr.to nexuroute

Indigenous Tech Hubs
Indigenous tech hubs, and oromsrekers

Diplomatic Proactivity
Dirlomate romdimate diplomatic proactivity

9. UPSC/NCERT LINKAGES

Syllabus Paper
- Matiers I
- Information Kiill
- Pratiiers IV
- Diplomatic Inractivity

Syllabus Paper
- Accelerate Theaterization
- Information Command / Indigenous Tech
- Diplomatic Proctiivity Botions & Portonwans

PYQ FOCUS & MODEL ANSWERS

AXIA PREMIER INSIGHT

- **Logical and philosophical base**
- **Strategic logic**

- The underlying logic is deterrence by punishment: if sponsorship of terror continues without visible cost, the adversary's incentives remain intact; therefore, controlled retaliation seeks to raise the price of proxy warfare.
- A second layer is deterrence by credibility: red lines matter only if enforced.
- A third layer is signalling under constraints: the operation aims to be forceful enough to shape behaviour, but limited enough to avoid uncontrolled war.

- **Assumptions**

- One assumption is that the adversary is capable of cost-benefit reasoning and can be influenced by calibrated military pain.
- Another is that domestic and international audiences will distinguish between counterterror retaliation and general aggression if messaging is disciplined.
- A further assumption is that technological superiority, intelligence quality, and escalation dominance can be maintained in short crises.

- **Philosophical foundations**

- At one level, the article draws from the realist tradition in international relations, where survival, power, deterrence, and strategic preparedness outweigh moral idealism.
- It also reflects the just war concern of proportionality: the state claims to act against terror-linked infrastructure rather than civilians, thereby seeking ethical legitimacy.
- A deeper philosophical point is the tension between Gandhian restraint in political culture and Kautilyan realism in statecraft; modern Indian security policy often tries to combine moral legitimacy with hard capability.

Multidimensional Analysis

Social Dimension:
Terror attacks generate public anger and grief. A mature society must support national security while resisting hatred, rumour and communal targeting.

Political Dimension:
Strong response can build public confidence in the State. However, excessive politicisation of military action may weaken institutional professionalism.

Legal Dimension:
India must balance national defence with international law, humanitarian principles and constitutional accountability.

Ethical Dimension:
The ethical test is proportionality. The State must target terror infrastructure and hostile capability, not civilians or collective identities.

International Dimension:
The issue affects India's global image as a responsible power. Diplomatic messaging must show that India seeks deterrence, not war.

Economic Dimension:
Conflict affects markets, investment, trade, tourism, insurance, energy security and fiscal priorities. A prolonged crisis can divert resources from development.

- **Linkages with NCERTs**
- **Class 9 Democratic Politics – Constitutional Design:**

Useful for understanding sovereignty, State responsibility and constitutional morality.

- **Class 10 Democratic Politics – Power Sharing and Federalism:**

Relevant because internal unity, border States and national security require coordination between Union and States.

- **Class 11 Political Theory – Freedom, Equality, Justice:**

Helps analyse the ethical balance between security, liberty and justice.

- **Class 11 India Constitution at Work – Executive, Legislature and Judiciary:**

Important for understanding civilian control over defence, executive responsibility and parliamentary accountability.

- **Class 12 Contemporary World Politics – Security in the Contemporary World:**

Directly linked to terrorism, human security, traditional security, non-traditional threats and military strategy.

- **Class 12 Politics in India Since Independence:**

Useful for tracing India-Pakistan relations, wars, national integration and foreign policy evolution.

- **Class 12 Themes in Indian History:**

Indirectly useful for understanding Partition, borders, identity and historical memory.

- **Linkages with UPSC CSE Syllabus**
- **GS Paper 2:**

International relations, India and its neighbourhood, bilateral disputes, effect of policies of developed and developing countries on India's interests.

- **GS Paper 3:**

Internal security, terrorism, border management, cyber security, defence technology, money laundering and organised crime.

- **GS Paper 4:**

Ethics in governance, moral responsibility of the State, proportionality, public trust and accountability in decision-making.

- **Essay Paper:**

Possible themes include national security and democracy, technology and warfare, terrorism and ethics, sovereignty in a globalised world.

- **Political Science Optional:**

Security dilemma, realism, strategic autonomy, India's foreign policy, nuclear deterrence and regional security.

- **Public Administration Optional:**

Crisis management, inter-agency coordination, decision-making, accountability and civil-military relations.

- **Sociology Optional:**

Nationalism, social cohesion, media influence, identity, collective memory and public opinion.

- **Way Forward**
- India needs a doctrine for compressed crises. Such a doctrine should clearly define thresholds, response options, escalation control and communication strategy.
- Jointness must move from slogan to structure. Integrated theatre commands, common logistics, interoperable communication and joint operational planning are essential.
- India must invest heavily in drones, counter-drone systems, cyber defence, satellite surveillance, electronic warfare and precision-strike capability.
- Strategic communication must be professionalised. Government briefings should be timely, credible and fact-based so that propaganda does not fill the vacuum.
- Domestic media responsibility must improve. National security reporting should avoid sensationalism, fake claims and competitive nationalism.
- India must strengthen defence industrial capacity. A country facing a two-front challenge cannot depend excessively on foreign supply chains.
- Diplomatically, India should build global consensus against cross-border terrorism while maintaining strategic autonomy.
- Finally, India must preserve democratic balance. Strong national security and constitutional discipline must move together.

UPSC Mains

2023 – GS Paper 3
Cyber security and digital threats related questions are relevant for information warfare and cyber operations.

2022 – GS Paper 3
Questions on border management and internal security are relevant to cross-border terrorism.

2021 – GS Paper 3
Questions on linkages between organised crime and terrorism are directly relevant.

2020 – GS Paper 3
Questions on cyber warfare and national security connect with the digital dimension of modern conflict.

2019 – GS Paper 3
Questions on terrorism, border security and intelligence coordination are relevant.

2018 – GS Paper 3
Questions on security challenges in border areas and role of external State/non-State actors are useful.

2017 – GS Paper 3
Questions on internal security threats and social media misuse connect with information warfare.

2016 – GS Paper 3
Questions on cross-border terrorism and security challenges link strongly with India-Pakistan conflict dynamics.

2015 – GS Paper 3
Questions on terrorism, money laundering and security architecture are relevant.

UPSC Essay Themes

National security, terrorism, technology, democracy, ethics of power, information disorder and India's neighbourhood can all be linked.

India in reverse Goldilocks

With on-again, off-again tariffs and whimsical wars, the US has become a friend without benefits

ILLUSTRATION: BINAY SINHA

IF TRUTH BE TOLD

AJAY CHHIBBER

With passage through the Strait of Hormuz still restricted, the spectre of stagflation that I outlined in my April column is now becoming an even starker reality for India and the world. Oil prices are now likely to be about $20 per barrel higher than previously expected in 2026 due to the war, according to the World Bank's latest commodity forecast. This would mean that the International Monetary Fund's world gross domestic product (GDP) growth forecast for 2026 of 3.4 per cent will drop down to around 3 per cent. Global inflation would also rise by almost 1 percentage point over the baseline forecast.

India will be even harder hit. GDP growth will drop from over 7 per cent to around 6-6.5 per cent in 2026 and inflation will rise to over 5 per cent, according to the IIM's Business Expectations Survey, well above the inflation target of 4 per cent. While at the end of 2025, India was described as a Goldilocks economy, it is now in what is being called "reverse Goldilocks". The hold on petrol pump price increases because of key state elections cannot last too long without damaging the finances of oil public-sector enterprises (PSEs) and the fiscal deficit targets. LPG prices have already been increased and export duties on diesel and jet fuel have been imposed. The rupee has breached 95 against the dollar and is amongst the weakest currencies in Asia. The Reserve Bank of India (RBI) intervened briefly but realised that this was a losing battle as foreign portfolio investors have pulled over $22 billion from Indian markets since the start of the Iran war due to the oil shock.

The rupee, however, weakened even before the Iran war (*see chart 1*) and was the weakest Asian currency in 2025, as foreign portfolio investors pulled over $19 billion out of Indian markets. This was due to the tariff shock, with India ending up with 50 per cent tariffs, surprising everyone. But also contributing to this was the much less discussed artificial intelligence (AI) shock, where India's information technology (IT) sourcing model is perceived to be a loser.

The government has countered this perception through a much-hyped AI summit and announced a comprehensive AI mission to build a robust AI ecosystem by 2030, including creating indigenous smaller AI models and fostering startups and public-private AI projects. But questions remain on whether AI will be a boon or a bane, as India's big IT companies have not seen fit to invest in AI research and their outsourcing model is taking a hit. How quickly they can use AI to revamp their business model remains to be seen.

Nevertheless, India emerged reasonably well from 2025. But now, the oil shock and war-related supply disruptions have again driven funds out of India and significantly weakened the rupee. The tariff shock has ebbed, as India now pays only a 10 per cent import duty into the United States, the same as others. But Donald Trump is getting trade reviews done and intends to return to selective country tariffs — that dog might still bite; stay tuned.

Oil prices may eventually reverse, but for now, India's currency has been hit hard again, despite its sizeable reserve holdings (*see chart 2*), and is among Asia's weakest currencies. Cumulatively, the Indian rupee has weakened by 10 per cent against the US dollar since the beginning of 2025. As a result, according to the IMF, in dollar terms, India has been eclipsed by the United Kingdom and is now the sixth-largest, not the world's fifth-largest, economy, with even Bangladesh's per capita income is now higher than India's.

The rapid exchange rate depreciation will, of course, help counter another big worry, the current account deficit, which in 2026 may exceed 2 per cent of GDP, a danger level. By making imports more costly and encouraging exports, a weaker rupee will help reduce the current account deficit. But this may be thwarted by weaker global demand. All past empirical work shows that exports are dependent hugely on global growth — which is weakening. India's exports to the Gulf states — a major market — have also been hugely impacted by the war. This means finalising and executing the free-trade agreements (FTAs) India has signed, especially with the European Union, the United Kingdom, Australia and now New Zealand will be critical.

The war has affected not just oil but also gas and fertiliser. While reports say India has managed to obtain sufficient fertiliser for the Kharif crop, this might be a time for much-needed reforms in fertiliser, where subsidies will rise by 20 per cent under a business-as-usual model. The over-reliance on subsidised urea (nitrogen) has severely affected soil nutrient ratios, requiring a shift towards nitrogen, phosphorous, and potassium balance. Moving towards direct cash transfers to farmers (e.g., a flat per-acre payment) to replace the current input-based subsidy, allowing market-driven pricing for fertilisers to truly solve inefficiency is long overdue.

India must also look for diversification in its gas needs. The US is a potential source, but the next US administration may not be so keen to export and may cancel plans, as happened under the Biden administration. Had Joe Biden not banned LNG exports, India would not be in so much trouble today with its gas needs. Australia, Russia, Malaysia, and Indonesia may provide a more reliable solution in the future to diversify from the Gulf.

The oil shock will hopefully lead to a faster shift to renewables. The supply disruptions have shown that more physical buffers in oil and other critical inputs are desirable. Longer-term oil contracts with dependable partners like Russia should be made, despite US pressure. While a trade deal with the US is vital, India must signal that it cannot be pushed around at will and has certain key strategic interests.

It is time to come together with like-minded countries, such as Australia, Canada, and the EU, as well as its Brics+ partners, and be counted in this volatile world, instead of trying to please an unpredictable American administration and getting rebuffed repeatedly. If the US can wage a whimsical war with such huge costs to the rest of the world, and inflict on-again, off-again tariffs at will, it has become a friend without any benefits.

The author is distinguished visiting scholar, Institute for International Economic Policy, George Washington University

Asian currencies against USD

% change	In 2025
Malaysian ringgit	9.64
Thai baht	8.86
Singapore dollar	5.61
Taiwan dollar	3.94
Chinese yuan	3.67
HK dollar	-0.16
Japan yen	-0.16
Korean won	-0.63
Philippine peso	-1.44
Indonesian rupiah	-3.98
Indian rupee	-4.35

Movement since the Iran war

% change	
Chinese yuan	0.34
HK dollar	-0.16
Taiwan dollar	-0.71
Singapore dollar	-1.28
Malaysian ringgit	-1.98
Japan yen	-2.78
Korean won	-3.23
Indonesian rupiah	-3.58
Indian rupee	-4.26
Thai baht	-5.51
Philippine peso	-6.53

- **Key Terms and Explanations**
- **Reverse Goldilocks Economy**
- A Goldilocks economy means growth is neither too hot nor too cold: inflation is moderate, growth is stable, and policy space is comfortable. A reverse Goldilocks situation is the opposite: growth slows while inflation remains high. For India, this means the economy may face lower GDP growth, higher import costs, weaker currency, and pressure on fiscal management at the same time.
- **Tariffs**
- Tariffs are taxes imposed on imports. If the United States raises tariffs on Indian goods, Indian exporters become less competitive in the American market. For example, if Indian textiles or engineering goods face higher duties, their final price rises for US consumers, reducing demand.
- **Oil Shock**
- An oil shock occurs when crude oil prices rise suddenly due to war, supply disruption, sanctions, or geopolitical tension. Since India imports most of its crude oil, higher oil prices increase the import bill, widen the current account deficit, raise inflation, and weaken the rupee.
- **Current Account Deficit**
- Current account deficit means a country spends more foreign exchange on imports, services, income payments, and transfers than it earns from exports and remittances. A high CAD weakens the rupee because more dollars are needed to pay for imports.
- **Exchange Rate Depreciation**
- When the rupee weakens against the dollar, imports become costlier. For example, crude oil bought in dollars becomes more expensive in rupee terms, even if global oil prices remain unchanged.
- **Foreign Portfolio Investment**
- FPI refers to foreign investment in Indian shares, bonds, and financial markets. It is useful but volatile. In times of global uncertainty, foreign investors often withdraw money, causing stock market pressure and currency depreciation.
- **Artificial Intelligence Shock**
- The AI shock refers to the perception that India may lose competitiveness if its IT outsourcing model does not adapt quickly to artificial intelligence. India’s traditional strength in software services may be challenged if global firms automate coding, customer support, analytics, and back-office functions.
- **Free Trade Agreement**
- An FTA is an agreement between countries to reduce tariffs and trade barriers. India’s FTAs with the UK, EU, Australia, and others are important for export diversification, market access, and reducing dependence on one country.

- **Main Arguments and Substantive Parts**
- **Core Thesis**
- India is facing a difficult external economic moment where multiple pressures are converging: higher oil prices, tariff uncertainty, AI-related competitiveness concerns, currency depreciation, and geopolitical instability. The central argument is that India cannot rely too heavily on one partner, one export model, or one energy source.
- **Growth-Inflation Pressure**
- India's growth outlook may weaken due to oil shocks and global uncertainty, while inflation may rise because crude oil, fertiliser, transport, and imported goods become costlier. This creates a policy dilemma: raising interest rates may control inflation but hurt growth; cutting rates may support growth but worsen inflation and currency pressure.
- **US as an Uncertain Partner**
- The United States remains vital for trade, technology, investment, and strategic cooperation, but erratic tariffs and geopolitical unpredictability reduce trust. India may need cooperation with the US, but it must avoid strategic dependence.
- **Rupee Weakness**
- The rupee's depreciation reflects oil import pressure, capital outflows, and global risk aversion. A weaker rupee may help exports in theory, but if global demand is weak and Indian exports are import-dependent, the benefit becomes limited.
- **AI and IT Sector Challenge**
- India's IT sector historically benefited from outsourcing. But AI can automate parts of the outsourcing model. India's response through AI missions, indigenous models, start-up support, and public-private projects is positive, but the speed of adaptation remains crucial.
- **Energy and Fertiliser Vulnerability**
- Oil and LNG disruptions expose India's dependence on West Asian energy routes. Fertiliser imports and subsidies also become vulnerable during war or supply shocks. Reforming fertiliser use, reducing excessive urea dependence, and shifting to direct cash support are suggested as structural reforms.
- **Strategic Diversification**
- India must diversify export markets, energy sources, trade agreements, supply chains, and diplomatic partnerships. Like-minded countries such as Australia, Canada, EU members, and BRICS+ partners can reduce overdependence on any one power.

- **Historical Evolution of the Issue**
- **Colonial and Pre-Independence Phase**
- India’s external trade was shaped by colonial priorities. Raw materials were exported, manufactured goods were imported, and India had limited autonomy over trade and currency policy. Energy dependence was not yet a modern strategic issue, but trade dependence was deeply embedded.
- **1950s–1980s: Import Substitution Era**
- After independence, India adopted import substitution industrialisation. The aim was self-reliance through state-led industrialisation, licensing, public sector enterprises, and foreign exchange control. This reduced exposure to global markets but also created inefficiencies and low export competitiveness.
- **1991 Liberalisation**
- The balance of payments crisis forced India to liberalise trade, devalue the rupee, open to foreign investment, and integrate with the global economy. Since then, external trade, remittances, IT exports, and foreign capital became central to India’s growth model.
- **2000s: IT and Globalisation Boom**
- India emerged as a global IT services hub. Outsourcing, software exports, back-office operations, and skilled English-speaking manpower became major strengths. The US became a key market for Indian technology firms.
- **2010s: Energy Security and Strategic Partnerships**
- India deepened ties with the US, Gulf countries, Japan, Australia, ASEAN, and Europe. At the same time, crude oil imports remained a major vulnerability. Rupee depreciation, oil price shocks, and current account pressures repeatedly affected macroeconomic stability.
- **Post-2020: Supply Chain and Geopolitical Shocks**
- COVID-19, Russia-Ukraine war, Red Sea disruption, US-China rivalry, sanctions, and AI disruption changed the global economy. Countries began prioritising resilience over pure efficiency. India started focusing on production-linked incentives, semiconductor missions, renewable energy, digital public infrastructure, and trade diversification.
- **Present Phase**
- India now faces a world where old assumptions are less reliable. The US is useful but unpredictable, energy routes are vulnerable, AI is disrupting services, and global trade is fragmenting. India’s policy challenge is to remain open but not exposed, strategic but not isolated.

AXIA
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INDIA'S ECONOMY IN REVERSE GOLDILOCKS: A COMPREHENSIVE UPSC ANALYSIS

IF TRUTH BE TOLD

BY AJAY CHHIBBER

A. Macro Vulnerabilities

GLOBAL SHOCKS

OIL PRICE SPIKE:
Strait of Hormuz Restriction

CURRENCY WARS

DOMESTIC PRESSURES

INFLATION BREACH
(>5%)

GROWTH SLOWDOWN
(6-6.5% GDP)

SECTORAL VULNERABILITIES

AI THREAT TO IT SERVICES
(Labor vs Knowledge Arbitrage)

FISCAL BURDEN
(LPG, Fertilizer Subsidies)

B. Emerging Threats

RUPEE DEPRECIATION
(-10% vs USD, >95/USD)

-6USD;
-OOT

+FPI'/SD.
$2TLOWS

Vulnerability Compass

INDIA'S MACROECONOMIC TIGHTROPE

ECONOMIC FALLOUT

VS

INDIA ECLIPSED BY UK
as 5th Largest Economy

FPI/FDI OUTFLOWS
($21 Billion)

C. A Way Forward

STRATEGIC ENERGY AUTONOMY

SPR and Diversified Gas (Australia, Canada, Russia)

AI INTEGRATION MISSION

Incentivize Indigenous AI Models

C. A Way Forward

STRATEGIC ENERGY AUTONOMY

SPR and Diversified Gas (Australia, Canada, Russia)

AI INTEGRATION MISSION

Incentivize Indigenous AI Models

SUBSIDY REFORM

Transition to Acre-based direct benefit transfer

FTAs ACCELERATION

Finalize UK, EU Trade Deals

UPSC Syllabus Linkages

GS-II IR | GS-III Economy | GS-III Infrastructure | Ethics

- **Logical and Philosophical Base**

- **Economic Logic of Vulnerability:** The arguments rest on the Mundell-Fleming trilemma for an open economy—India cannot simultaneously maintain a fixed exchange rate, free capital flows, and an independent monetary policy. When external shocks hit, capital outflows force depreciation or reserve loss. The RBI's futile intervention illustrates this constraint.

- **Realist International Relations Theory:** The view that the US is a "friend without benefits" reflects a realist critique. States act in self-interest; alliances are transactional. US tariffs and whimsical wars signal that India cannot rely on the liberal narrative of shared values; it must prioritise strategic autonomy.

- **Critique of Neoliberal Outsourcing Model:** The AI shock challenges the assumption that comparative advantage in low-cost labour is permanent. Philosophically, it questions the sustainability of "services-led" growth that does not invest enough in foundational research and technology creation.

- **Dependency and Energy Security:** The article draws heavily from the dependency school—reliance on a narrow geographic source (Persian Gulf) for critical imports creates structural vulnerability. Diversification and self-reliance (renewables, strategic reserves) become ethical imperatives.

- **Goldilocks as Market Equilibrium Narrative:** The Goldilocks metaphor borrows from a storytelling tradition: just right conditions. When that equilibrium breaks, the "reverse" state jars public confidence. The psychological effect influences markets and policy.

- **Ethical Underpinning of Subsidies:** The argument to replace fertiliser subsidies with direct cash transfers is rooted in Rawlsian distributive justice: support the vulnerable while correcting ecological distortions caused by improper pricing.

- **Multidimensional Analysis**
- **Social Dimension**
- Oil shocks increase transport and food prices, hurting poor and lower-middle-class households. AI disruption can affect white-collar employment. Fertiliser reform affects farmers directly. Therefore, macroeconomic shocks eventually become household-level social issues.
- **Political Dimension**
- Governments face pressure to control inflation without hurting growth. Elections often delay fuel price adjustments and subsidy reforms. Political credibility depends on managing both economic nationalism and global engagement.
- **Legal Dimension**
- Tariffs, FTAs, subsidies, investment agreements, and energy contracts operate within domestic and international legal frameworks. India must preserve policy space while complying with trade obligations.
- **Ethical Dimension**
- The key ethical issue is fairness in burden-sharing. Should consumers pay higher fuel prices? Should taxpayers fund subsidies? Should future generations bear environmental costs? Ethical policy must protect the vulnerable while promoting efficiency.
- **International Dimension**
- India’s external vulnerability is shaped by US tariffs, Gulf instability, global oil prices, China’s economic position, and supply chain realignments. Strategic autonomy requires multiple partnerships.
- **Economic Dimension**
- The economy faces pressure through inflation, CAD, rupee depreciation, capital outflows, export slowdown, subsidy burden, and investor uncertainty. The solution lies in resilience, productivity, export competitiveness, and energy transition.

- **Linkages with NCERTs**

- **Class 11 – Indian Economic Development: Chapter 3 – Liberalisation, Privatisation and Globalisation: An Appraisal**

The chapter discusses the 1991 crisis triggered by high oil prices and the subsequent reforms. The current reverse Goldilocks scenario echoes similar external vulnerabilities, making the comparison instructive.

- **Class 12 – Macroeconomics: Chapter 6 – Open Economy Macroeconomics**

Concepts of balance of payments, current account deficit, foreign exchange reserves, and exchange rate determination are directly applicable. The article provides a real-world case of how capital outflows and a war-induced oil shock depreciate the rupee and widen CAD.

- **Class 12 – Indian Economic Development: Chapter 5 – Human Capital Formation and Chapter 7 – Employment**

The AI shock affecting IT jobs connects with the discourse on skill development, technological unemployment, and the need for education to adapt to disruptive technologies.

- **Class 12 – Indian Economic Development: Chapter 6 – Rural Development**

Fertilisers, soil health, agricultural subsidies, and credit are discussed. The proposal to introduce direct cash transfers in place of fertiliser subsidy is a direct extension of the chapter's agricultural reform themes.

- **Class 10 – Geography: Chapter 5 – Minerals and Energy Resources**

The distinction between conventional and non-conventional energy sources, and India's energy security, forms the base for understanding the oil shock and the push for renewables.

- **Class 11 – Political Theory: Chapter 10 – The Philosophy of the Constitution**

The value of strategic autonomy and the ethical dimension of protecting national interest while respecting international cooperation can be linked to the Indian Constitution's emphasis on sovereignty.

- **Linkages with UPSC CSE Syllabus**

- **GS Paper 3 – Indian Economy and Issues Relating to Growth, Development, Mobilisation of Resources:**

Reverse Goldilocks scenario encapsulates growth-inflation trade-off, CAD, fiscal deficit, capital flight, and exchange rate depreciation. The fertiliser subsidy reform and DBT proposals fall under “issues related to direct and indirect farm subsidies.”

- **GS Paper 3 – Infrastructure: Energy, Ports, Roads, Airports, Railways etc.**

Energy security, LNG diversification, strategic oil reserves, and renewable energy acceleration are direct linkages.

- **GS Paper 3 – Science and Technology: Developments and their Applications and Effects in Everyday Life; Indigenisation of Technology and Developing New Technology**

AI mission, its impact on IT services, and the need for indigenous AI models are covered under S&T.

- **GS Paper 2 – Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India’s interests:**

US tariff policy, Brics+, FTAs with EU, UK, Australia, and Indo-Pacific alliances are core to this section.

- **GS Paper 2 – Effect of Policies and Politics of Developed and Developing Countries on India’s interests:**

The US “whimsical wars”, tariff shocks, and AI policy shifts directly impact India, making this an apt case study.

- **GS Paper 1 – Effects of Globalisation on Indian Society:**

AI-driven job displacement in IT and the cultural-economic anxiety of the middle class can be discussed under the social dimension of globalisation.

- **Way Forward**

- **Diversify Energy Sources**
- India must reduce excessive dependence on West Asian routes by expanding long-term oil and gas contracts with multiple regions, building strategic reserves, and investing in LNG infrastructure.
- **Accelerate Renewable Transition**
- Solar, wind, green hydrogen, battery storage, and grid modernisation should be treated as energy security tools, not only climate tools.
- **Strengthen AI Capability**
- India must move from IT outsourcing to AI-enabled value creation. This requires compute infrastructure, data governance, domain-specific AI models, start-up support, and reskilling.
- **Manage Rupee Volatility**
- The RBI should prevent disorderly depreciation, but not defend any artificial exchange rate at excessive cost. External stability must be combined with export competitiveness.
- **Reform Fertiliser Subsidy**
- India should gradually shift from input-based subsidy to direct farmer support, promote balanced nutrient use, and encourage soil-health-based fertiliser application.
- **Deepen Trade Agreements**
- FTAs with the EU, UK, Australia, ASEAN partners, and other markets should be pursued with safeguards for domestic industry and MSMEs.
- **Build Export Competitiveness**
- India needs logistics reform, cheaper credit, quality standards, skilling, port efficiency, and integration into global value chains.
- **Protect the Vulnerable**
- Fuel and fertiliser reforms must be phased, targeted, and accompanied by social protection so that poor households and small farmers do not carry the burden alone.

- **UPSC CSE Mains (GS Papers):**

- **GS3 – 2023:** “Discuss the impact of rising crude oil prices on the Indian economy. What measures should India take to enhance its energy security?” (Near identical theme).

- **GS3 – 2022:** “Elucidate the policy measures undertaken by the Government to promote the growth of the IT sector and its contribution to the economy. How can the sector adapt to challenges posed by artificial intelligence and automation?” (AI shock linkage).

- **GS3 – 2021:** “Examine the implications of the current account deficit on the external sector stability of India. Suggest measures to attract stable capital inflows.”

- **GS2 – 2022:** “India’s strategic interests in West Asia are challenged by the region’s geopolitical instability. Discuss with reference to recent developments.” (Iran war, Hormuz).

- **GS2 – 2020:** “Quadrilateral and plurilateral groupings are a new reality of international relations. In this context, discuss India’s approach to such minilateral engagements and its benefits.”

- **GS3 – 2019:** “How do subsidies in the agricultural sector distort the cropping pattern and affect soil health? Suggest measures to rationalise the subsidy regime.” (Fertiliser DBT).

- **Essay – 2020:** “Technology is a useful servant but a dangerous master” (AI and job displacement).

- **GS1 – 2018:** “Discuss the effects of globalisation on the middle class in India.” (IT sector anxiety).

- **Ethics Case Studies – 2021:** A scenario involving balancing short-term public relief with long-term fiscal health (similar to fuel price freeze dilemma).

- **UPSC Prelims:**

- **Economy (2023):** Questions on terms like current account deficit, capital account convertibility, and foreign portfolio investment.

- **Economy (2021):** Question on stagflation: “Which of the following best describes ‘stagflation’?”

Hindustan Times

Subsidising the status quo: How BEE fails EV transition

Amitabh Kant

The conflict in West Asia delivers a stark reminder: Dependence on foreign energy is a strategic vulnerability. Many nations are responding by accelerating their transition to renewable energy and electric mobility. Electric vehicle (EV) adoption is a strategic, economic, and geopolitical imperative.

But India's Bureau of Energy Efficiency (BEE) is sending dangerously confused signals.

On the one side, we see bold and visionary leadership. Delhi's newly-released EV policy, which will phase out internal combustion engine (ICE) two- and three-wheelers starting next year, reflects the urgency and clarity of purpose required to drive real structural change.

On the other side, we see hesitation. BEE's latest draft Corporate Average Fuel Efficiency (CAFE) standards are a drag on India's ambitions for global leadership and economic security. BEE has hit the brakes at precisely the moment India needs to accelerate. The bureau's weak efforts are contradictory to the national goals of moving towards cleaner forms of energy and can be detrimental.

The visible regression in CAFE ambition is indefensible. The 2024 draft targeted 14-15% EV sales. The 2025 version diluted this to 11-12%. The 2026 draft reduces it to a feeble 8-9% by 2032. As the rest of the world advances towards electrification of vehicles to meet national security and energy independence goals, India's pivotal regulator seems to have retreated.

The global comparison is unforgiving — and unforgivable. Nepal has already achieved 75% electric car sales. Singapore and Vietnam have crossed 40%. Thailand is at 23%, Indonesia at 20%, and South Korea above 15%, followed closely by Brazil at around 10%. India, in 2025, had clocked a mere 2.5%. This is not a position of caution. It is a position of complacency and denial.

If India doesn't move forward, it will become the world's dumping ground for obsolete technologies. Nearly half of India's car market is controlled by companies that have been consistently and systematically outpaced in every global EV market. From Singapore to China to Indonesia to Brazil, the global market share of these so-called legacy manufacturers shrivels due to their inability to pivot.

There is an opportunity in the growing obsolescence of legacy manufacturers — a chance to surge ahead. BEE, apparently, sees the opposite — a chance to double down on past failures. The current CAFE draft is riddled with loopholes, distortions, and giveaways that undermine its very purpose.

First, the proposal offers unnecessary incentives to flex-fuel vehicles (FFVs). These vehicles receive a 22.3% carbon neutrality factor along with additional super credits, despite delivering only negligible real-world emissions reductions of 1-3% when operating on E85 fuel. More critically, E85 fuel infrastructure is virtually non-existent in India. This creates a compliance pathway that is easy for manufacturers but meaningless in the real world.

Second, emissions targets themselves — the heart of any CAFE standard — have been weakened. The targets of the current draft get tougher more slowly, and start from an easier baseline. Together, these two changes take most of the bite out of the regulation. What was once a projected 28% emissions reduction shrinks to just 13.8% after accounting for various loopholes.

Third, the draft grants disproportionately high super credits to plug-in hybrid electric vehicles (PHEVs). With a multiplier of 2.5 — nearly equivalent to battery electric vehicles, this approach ignores global evidence. Data show that PHEVs emit significantly more in the real-world than they do under laboratory conditions. Regulators in the EU, China, and the US saw that evidence and chose to phase out such incentives. Regulators at BEE, inexplicably, chose to do the opposite.

Fourth, the regulation includes generous credits for common technologies such as start-stop systems, mild hybrids, and LED lighting — features that are already widely deployed by Indian manufacturers and whose benefits are already accounted for. Instead of incentivising innovation, BEE is subsidising the status quo.

Other technical loopholes and workarounds abound in the current draft. Taken together, the message is unmistakable. Compliance is being made easier, while meaningful outcomes disappear.

This raises the fundamental question: Who does this regulation really serve?

Regulation cannot be reduced to a process of building consensus with industry players. Consultation is important to achieve technical excellence. But capitulation can never be the basis for effective regulation. BEE's mandate is to safeguard India's long-term interests, not to prop up outdated business models that are rapidly losing global relevance.

India's strategic direction is already abundantly clear. Prime Minister Narendra Modi has called for an eightfold increase in EV sales by 2030 under the Viksit Bharat vision. NITI Aayog has highlighted a $200 billion opportunity linked to achieving 30% EV penetration. Even India's largest automaker, Suzuki, has voluntarily committed to a 15% EV share by 2030.

BEE's current CAFE draft aligns with none of these clear imperatives. In reality, it actively undermines them.

India stands at a decisive moment. The global automotive industry is undergoing its most profound transformation in a century. Countries that move now will capture manufacturing, innovation, and market leadership. Those that hesitate will be left importing outdated technologies and new sources of pollution.

A weak CAFE regime not only slows progress, it locks India into technological obsolescence.

The next steps are clear. BEE must stop writing regulations for the status quo and start regulating for the country it serves. It is time it becomes progressive and forward-looking. The CAFE framework must be tightened, not diluted. It must push the industry towards real change, not provide escape routes to avoid it.

India does not need a regulator that manages decline. It needs one that drives transformation. Anything less adversely impacts India's economic future, energy security, and global leadership.

Amitabh Kant is chancellor of NIIT University, chairman, Fairfax Centre for Free Enterprise, former G20 Sherpa, India, and former CEO, NITI Aayog. The views expressed are his own.

- **Key Terms and Explanations**

- **Bureau of Energy Efficiency (BEE):** A statutory body under the Ministry of Power, created under the Energy Conservation Act, 2001. It sets standards for appliances, industrial equipment, and vehicles, and is responsible for implementing fuel efficiency norms. For example, BEE's star labeling on air conditioners helps consumers choose energy-saving models.

- **Corporate Average Fuel Efficiency (CAFE):** Regulations that set the average fuel efficiency (or CO_2 emission limits) an automobile manufacturer must achieve across its entire fleet of vehicles sold in a year. The target is weighted by sales volume. For instance, if a company sells a mix of petrol, diesel, and electric cars, the average must not exceed the specified CO_2 grams per kilometer.

- **Super Credits:** A multiplier mechanism in fuel economy regulations that allows a low- or zero-emission vehicle to be counted more than once when calculating a manufacturer's average emissions. For example, a multiplier of 2 means one EV is counted as two vehicles, making it easier to meet the fleet average even with many high-emission cars.

- **Flex-Fuel Vehicles (FFVs):** Vehicles capable of running on a blend of petrol and ethanol up to 85% (E85). The "22.3% carbon neutrality factor" means that in official calculations, 22.3% of the tailpipe emissions from fueling with E85 are ignored, assuming that the plants used to produce ethanol absorbed that much CO_2 while growing.

- **Carbon Neutrality Factor:** A regulatory offset for biofuels, based on the life-cycle argument that the CO_2 emitted during combustion was recently absorbed from the atmosphere by the crops. In practice, it often ignores land-use change, fertilizer emissions, and processing energy, leading to overestimated benefits.

- **Mild Hybrids and Start-Stop Systems:** Mild hybrids use a small electric motor to assist the engine but cannot drive the wheels on electric power alone. Start-stop systems shut off the engine when the vehicle is stationary and restart it when the accelerator is pressed. Both offer marginal fuel savings.

- **Regulatory Capitalisation:** A situation where a regulator prioritises the interests of the industry it is supposed to oversee over public interest, often due to close consultation, lobbying, or the revolving door phenomenon. In this context, it implies BEE might be designing norms that are comfortable for legacy automakers rather than transformative for society.

- **Viksit Bharat:** The vision of a developed India by 2047, articulated by Prime Minister Narendra Modi, which includes ambitious targets for clean energy and e-mobility as drivers of economic growth and energy security.

- **Main Arguments and Substantive Parts**
- **Core Thesis**
- The central argument is that India's fuel-efficiency regulatory framework should accelerate the transition towards electric mobility, but weak CAFE norms risk slowing it down. The concern is that regulatory flexibility, loopholes, and excessive credits may protect existing automobile business models instead of pushing real technological transformation.
- The issue is framed not merely as an environmental question but as a matter of national interest. Energy dependence, industrial competitiveness, climate commitments, and future manufacturing leadership are all connected to how India regulates vehicle emissions.
- **Argument 1: Energy Security Requires Faster EV Transition**
- India imports a large share of its crude oil requirement. Any instability in global oil-producing regions directly affects domestic inflation, current account balance, transport costs, and strategic autonomy.
- Electric mobility reduces this vulnerability by shifting the transport sector away from imported petroleum. Therefore, EV adoption is not only a climate measure but also a geopolitical and economic necessity.
- **Argument 2: Weak Regulation Protects the Status Quo**
- The criticism is that diluted emission standards allow manufacturers to continue selling conventional vehicles without significant pressure to innovate.
- When compliance becomes too easy, regulation loses its transformative function. Instead of forcing industry to upgrade, it becomes a shield for existing practices.
- **Argument 3: Loopholes Reduce Real-World Impact**
- The concern is that credits for flex-fuel vehicles, plug-in hybrids, mild hybrids, start-stop systems, and other common technologies may allow manufacturers to appear compliant while actual emission reduction remains limited.
- This creates a difference between regulatory compliance and environmental outcome. A company may satisfy the paperwork but fail to deliver meaningful change on the road.
- **Argument 4: India Risks Falling Behind Global EV Markets**
- Several smaller economies have already achieved higher EV penetration than India. The argument is that if India delays, global automobile supply chains may move ahead without Indian manufacturers becoming competitive.
- This could weaken India's ambition to become a global manufacturing hub in clean mobility.

- **Historical Evolution of the Issue**
- **Pre-Independence Background**
- Before Independence, India's transport system was shaped by colonial economic priorities. Railways, ports, and roads were developed mainly to serve extraction, trade, and administrative control. Motorised personal mobility was limited and largely dependent on imported technology.
- Energy policy was not framed around climate or sustainability. The concern was access, movement, and control.
- **Post-Independence Industrialisation**
- After 1947, India focused on building domestic industrial capacity. The automobile sector developed slowly under licensing controls, import restrictions, and limited consumer choice.
- Fuel efficiency was important because India had limited foreign exchange, but environmental regulation was not yet central to policy.
- **1970s Oil Shocks**
- The global oil shocks of the 1970s made energy security a serious policy concern. India realised that dependence on imported petroleum could create inflationary and external-sector vulnerability.
- This period strengthened the logic of conservation, domestic energy planning, and fuel-efficiency thinking.
- **Liberalisation and Automobile Expansion**
- After 1991, India's automobile sector expanded rapidly. Consumer choice increased, private vehicles became aspirational, and foreign manufacturers entered the market.
- However, this also increased fuel consumption, congestion, and air pollution. Urban centres began facing serious vehicular pollution problems.
- **Environmental Regulation Phase**
- From the late 1990s and 2000s, India adopted stricter emission norms, including Bharat Stage standards. The shift from BS-IV to BS-VI marked a major regulatory leap.
- This phase showed that strong regulation can push industry to modernise, even when firms initially express concern over costs.
- **Climate Governance and EV Policy Phase**
- India's climate commitments, renewable energy expansion, FAME schemes, production-linked incentives, battery manufacturing policies, and state EV policies have pushed electric mobility into the mainstream.
- The debate now is not whether India should move towards cleaner mobility, but how fast and through what regulatory architecture.

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NAVIGATING INDIA'S EV TRANSITION: CAFE DILUTION vs. STRATEGIC IMPERATIVE

CAFE standards - fleet efficiency regulation, then assistance in aolitical CAFE diseats

Super Credits – regulatory 'bonus' to transequently used or employment invotees.

HISTORICAL EVOLUTION

GS 3

- 2001 Energy Conservation Act (Self-conservation)
- 2001 Fleet Israma
- 2003 (EV formated Rank
- 2004 EV Conservation Act
- S3DCC Schemes (EMT damps)
- FAME Schemes (& Learly echange)
- FAME Conservation Act
- FAME Schemes for Recutrvaited gat

THE CRITICAL CHALLENGE: CAFE DILUTION

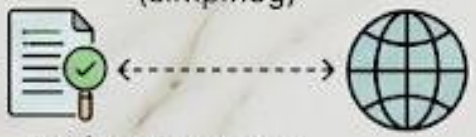
- **Current targets to rolled back** in the Norm &iGod EV 2024 — GS 2
- **Loopholes** — GS 3
  - Over-incentivized PHEVs
  - Risks from usmectevan reanuation

INDIA'S (deny/compliance)	GLOBAL & REGIONAL (leapfrog)
2.5% EV adoption	vs. 20%-75% Other nations

REGULATORY CHALLENGE

GS 3

(simplfieg)



Policy Capture

MULTIDIMENSIONAL ANALYSIS

Social
Public Health vs Air Pollution

Political
Strategic Autonomy vs. Oil Dependence

Legal
Article 48A & Precautionary Principle

Ethical
Corporate vs. Societal Interest

International
Paris Agreement NDCs

Economic
$200 Billion Opportunity vs. 'Dumping Ground' risk

Smpificiary — GS 2

Policy Capture

Way Forward

- Tighten Norms Policy Solution
- Remove Loophole Credits
- Scale Infrastructure Learring sollution
- Real-world testing

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- **Logical and Philosophical Base**

- **Energy Security as Foundational Logic:** The argument rests on the principle that excessive reliance on imported crude oil constitutes a strategic vulnerability. Philosophically, this aligns with the realist school of international relations where self-sufficiency in critical resources is paramount for national sovereignty.

- **Precautionary Principle:** Given the irreversible nature of climate change and the risk of technological lock-in, the logic demands anticipatory regulatory action rather than waiting for market forces. Diluting emission targets is seen as violating this principle.

- **Utilitarianism and Long-term Welfare:** A strong regulatory push for EVs is presented as the greatest good for the greatest number — better air quality, lower health costs, job creation in new industries, and reduced foreign exchange outflows — even if it imposes short-term adjustment costs on legacy auto firms.

- **Regulatory Capture Theory:** The core critique has a strong philosophical anchor in public choice theory. It suggests that regulatory agencies, over time, may become dominated by the industries they regulate, leading to outcomes that benefit those firms at the expense of public welfare. The article views BEE's draft as a classic case of this phenomenon.

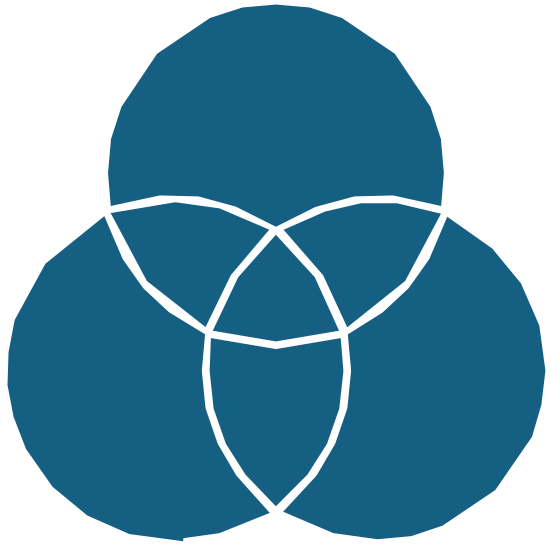
- **Moral Hazard and Perverse Incentives:** Bundling generous credits for flex-fuel vehicles and PHEVs that yield negligible real-world gains creates a moral hazard — manufacturers can claim compliance without making fundamental changes. It encourages box-ticking over transformation.

- **Intergenerational Equity:** The philosophical underpinning of sustainable development, drawn from the Brundtland Commission's work and Article 48A of the Indian Constitution, demands that present policy choices must not foreclose the ability of future generations to enjoy a clean environment and a resilient economy.

- **Nudge vs. Shove:** The analysis argues for a regulatory shove (binding, tightened norms) rather than gentle nudges (voluntary incentives). This reflects a philosophical belief that structural change during technology transitions often requires strong state direction, not just market orchestration.

- **Multidimensional Analysis**
- **Social Dimension**
- Clean mobility can reduce air pollution and improve public health, especially in congested cities. Children, elderly citizens, street vendors, traffic police, and low-income workers are among the worst affected by vehicular pollution.
- However, EV policy must not remain limited to private cars. India's mobility reality is dominated by two-wheelers, buses, autos, and shared transport. Socially inclusive EV transition must prioritise affordable and mass mobility.
- **Political Dimension**
- EV transition requires political will because it disrupts established industries and revenue systems. Governments collect significant revenue from petrol and diesel taxation, so a long-term fiscal adjustment plan is needed.
- At the same time, clean mobility can become a visible symbol of modern governance, climate leadership, and technological nationalism.
- **Legal Dimension**
- Regulation must balance environmental protection, consumer interest, industrial feasibility, and competition. Weak or vague norms can create arbitrary compliance.
- The legal framework should ensure that manufacturers do not misuse credits, misrepresent emission performance, or avoid responsibility for battery disposal.
- **Ethical Dimension**
- The ethical issue is whether society should allow private profit to override public health and future welfare. There is also an equity question: who benefits from subsidies and who bears environmental costs?
- A just EV transition must protect workers, small suppliers, consumers, and vulnerable communities.
- **International Dimension**
- Global automobile markets are shifting towards electrification. Countries that move early can dominate future supply chains.
- India's policy choices will affect its export potential, climate diplomacy, energy partnerships, and position in global clean-tech value chains.
- **Economic Dimension**
- EV transition can reduce the oil import bill, create new manufacturing opportunities, and attract investment in batteries, electronics, software, and charging infrastructure.
- But poor planning can cause job disruption, import dependence, and uneven market growth. Therefore, policy certainty is essential.

- **Linkages with NCERTs**
- **Class 10 Democratic Politics**
- Chapters on democracy, accountability, and popular participation link with the role of regulation. Students can connect this issue with how public policy must serve citizens rather than narrow interest groups.
- **Class 10 Economics**
- Chapters on development and sectors of the economy are relevant because EV transition affects industry, employment, infrastructure, and consumer welfare.
- The issue also helps explain how development cannot be measured only by income; health, environment, and sustainability matter equally.
- **Class 11 Indian Economic Development**
- Chapters on liberalisation, infrastructure, environment, and sustainable development are strongly linked. EV transition is a practical example of how India must modernise infrastructure while reducing ecological stress.
- **Class 11 Political Theory**
- Concepts such as justice, rights, liberty, and equality can be connected with environmental justice and intergenerational equity.
- **Class 12 Contemporary World Politics**
- Chapters on environment, globalisation, and security can be connected with energy dependence, oil geopolitics, climate negotiations, and clean-technology competition.
- **Class 12 Indian Society**
- Urbanisation, inequality, and environmental stress are relevant. Mobility choices shape city life, access to work, pollution exposure, and quality of life.
- **Class 12 Geography**
- Chapters on resources, transport, industry, and environmental issues help students understand the spatial dimension of EV infrastructure, mineral sourcing, and urban pollution.



- **Linkages with UPSC CSE Syllabus**
- **GS Paper 2**
- This issue connects with governance, statutory bodies, regulatory institutions, policy design, transparency, accountability, and Centre-State coordination.
- A strong answer can discuss how regulators must balance consultation with public interest.
- **GS Paper 3**
- This is the strongest linkage. It covers environment, climate change, energy security, infrastructure, industrial policy, technology, electric mobility, pollution control, and sustainable development.
- It also connects with manufacturing, Make in India, PLI schemes, battery ecosystem, and innovation.
- **GS Paper 4**
- The ethical dimensions include public interest, regulatory integrity, environmental ethics, intergenerational justice, accountability, and conflict of interest.
- A case study may ask whether a regulator should dilute norms due to industry pressure.
- **Essay Paper**
- Possible themes include:

“Development without sustainability is self-defeating.”
“Energy security is national security.”
“Technology transition and the ethics of public policy.”
“Regulation must serve the future, not merely manage the present.”

- **Optional Subjects**
- Public Administration can use this under regulatory governance, public policy, accountability, and state capacity.
- Political Science can connect it with state-market relations, environmental governance, and global climate politics.
- Sociology can link it with urbanisation, consumption, technology, inequality, and environmental justice.
- Geography can link it with transport systems, resource geography, energy transition, and urban pollution.

- **Way Forward**

- **Reset CAFE Ambition to National Goals:** Restore the original EV trajectory (14-15% by 2032) or even enhance it in line with the Prime Minister's eightfold increase call. Binding targets must be supplemented with penalty provisions for non-compliance.

- **Eliminate Unjustified Credits:** Remove the 22.3% carbon neutrality factor for flex-fuel vehicles until E85 infrastructure and real-world emission performance can be independently verified. Phase out super credits for plug-in hybrids or tie the multiplier to real-world data obtained through independent testing.

- **Adopt a Real-World Testing Regime:** Move from laboratory-based emission certification to on-road testing protocols, similar to the EU's Real Driving Emissions (RDE) framework, to close the gap between certification and actual performance.

- **Strengthen Institutional Integrity:** Ensure BEE's standard-setting process is insulated from industry capture by mandating public disclosure of all stakeholder submissions, conducting independent impact assessments, and setting up an advisory committee with credible environmental and automotive experts, not just industry representatives.

- **Foster a National EV Ecosystem Coherently:** Align FAME, CAFE, state EV policies, and the Production Linked Incentive (PLI) schemes for automobiles and batteries into a unified policy framework. Focus public investment on charging infrastructure, grid upgrades, and battery recycling parks.

- **Just Transition Fund:** Establish a dedicated fund for reskilling workers from the traditional auto and fuel retail sectors, and support MSMEs in the automotive value chain to transition to EV component manufacturing.

- **Strategic Mineral Diplomacy:** Simultaneously pursue international partnerships and domestic exploration for lithium and other critical minerals to avoid trading oil dependency for mineral dependency.

- **UPSC CSE Prelims:**

- 2022: Question related to the Bureau of Energy Efficiency and Star Labeling program.

- 2021: Question on FAME India scheme objectives.

- 2019: Question on EVs and their environmental impact compared to ICE vehicles.

- **UPSC CSE Mains – GS Paper 2:**

- 2020: “Statutory bodies and regulatory bodies are not always effective in achieving their objectives due to functional and structural constraints.” Examine in the context of energy sector regulators.

- **UPSC CSE Mains – GS Paper 3:**

- 2022: “Electric vehicles (EVs) are seen as the future of mobility, but the transition poses several challenges to India’s energy security, infrastructure, and automobile industry. Discuss.”

- 2020: “Explain the significance of the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme and the challenges in its implementation.”

- 2019: “What are the key challenges faced by India in achieving its Nationally Determined Contributions (NDCs) under the Paris Agreement? Discuss the role of the transport sector.”

- 2018: “Discuss the various policy measures taken by the Government of India to promote energy efficiency and conservation.”

- **UPSC CSE – Essay:**

- 2020: “The real challenge of development is not the lack of resources but the lack of will.”

- 2018: “Technology as a silent factor in international relations.”

Remedies for digital payment frauds

KEEPING VIGIL. Static safeguards, targeting discrete acts of fraud, will only spur fraudsters to probe other vulnerabilities

BENI CHUGH
SARADA MAHESH

The recent rise in fraud in the financial ecosystem is a cause for concern. The RBI's 'Report on Trends and Progress of Banking in India', notes that the value of fraudulent activities in banking operations has risen from ₹11,261 crore in 2023-24 to ₹34,771 crore in 2024-25.

Apart from the obvious monetary losses, frauds cause a crisis of confidence and trust among customers that threatens the momentum of financial inclusion and the growth of the sector.

Considering these drastic and cascading effects of frauds, the RBI is deliberating important policy interventions to address frauds in digital payments.

First, the RBI's draft framework on limiting customer liability in digital transactions ("liability framework") recognises authorised push payments (APP) as a customer risk and proposes a redress mechanism for it. APPs comprise payment transactions that the customer may have authorised willingly but unintentionally.

This includes social engineering ploys where fraudsters manipulate customers to either share transaction credentials enabling the fraudster to transfer monetary sums to themselves or directly transfer monetary sums to the fraudster. The liability framework proposes a one-time compensation of up to ₹25,000 or 80 per cent of the transaction value for victims of low-value APP fraud.

Further, the compensation is conceived as a low-burden mechanism, a de facto guarantee to remedy bona fide APP losses of up to ₹50,000.

Interestingly, this compensation is dispensed by the financial system. Banks vet complaints, establish their veracity and the RBI offers the compensation. It may reduce the proclivity of the customers to approach the legal system to seek redress for low-value APP fraud, thus, shielding the legal system from becoming overwhelmed by low-value, high-volume complaints that are expensive to investigate.

The one-time compensation, though illustrative of the central bank's resolve to make good to victims, does not offer any enduring solution for the customer who gets defrauded repeatedly. Its low-effort nature also does not have the effect of disciplining the customer by accounting for their role in enabling the fraud, which is characteristic of a good remedial measure. In addition to providing a remedy for APP frauds, the RBI has also proposed preventative safeguards to curb APP fraud. The RBI's discussion paper titled 'Exploring safeguards in digital payments to curb frauds' suggests four such measures: a lag in fulfilment of transactions above ₹10,000; an additional authentication system of trusted persons for older customers; commensuration of credit to accounts based on a relationship of trust established with the bank; and a customer-led kill-switch for digital payments.

Chase system-level resilience instead of individual fraud categories. This requires diverse financial and non-financial actors such as telecom operators and e-commerce entities to work together

These safeguards underline the RBI's 'stop and think' approach, encouraging customers to pause and reconsider the riskiness of the transaction at hand.

However, the application of these interventions is anchored in static demographic categories of age, physical condition or the sophistication of the remitter. These indicators alone may not be useful for detecting fraud.

RECHARACTERISING THE ISSUE OF FRAUD

Conventionally, fraud has been characterised as a static issue where bad actors exploit the gaps in the system and/or use their comparative operational advantage to cheat people out of money. Typically, static systems do not learn from or react to changes in the environment in which they operate.

However, fraudsters are known to improvise in response to policy developments. If policies make it difficult for fraudsters to cheat 70-year-old citizens, they will focus on the 68-year-olds. Put simply, static preventative safeguards do not incentivise the fraudster to identify other exploitable vulnerabilities. This ever-evolving nature of fraud offers four lessons for designing fraud prevention policies:

First, static rules will be gamed. Fraud prevention needs to be reimagined as a system of continuous recalibration instead of a system rooted in 'static' customer risk profiles. For instance, AI & ML tools can gauge the riskiness of a transaction by combining real-time, user-centric indicators such as recent account activity, device information and user behaviour patterns with aggregate patterns like emerging geographical hotspots, complaints and network traffic. Such assessments can detect fraud better than KYC-based risk profiles.

Second, chase system-level resilience instead of individual fraud categories. This requires diverse financial and non-financial actors such as telecom operators and e-commerce entities to continually work together to identify emerging frauds and close gaps in the system.

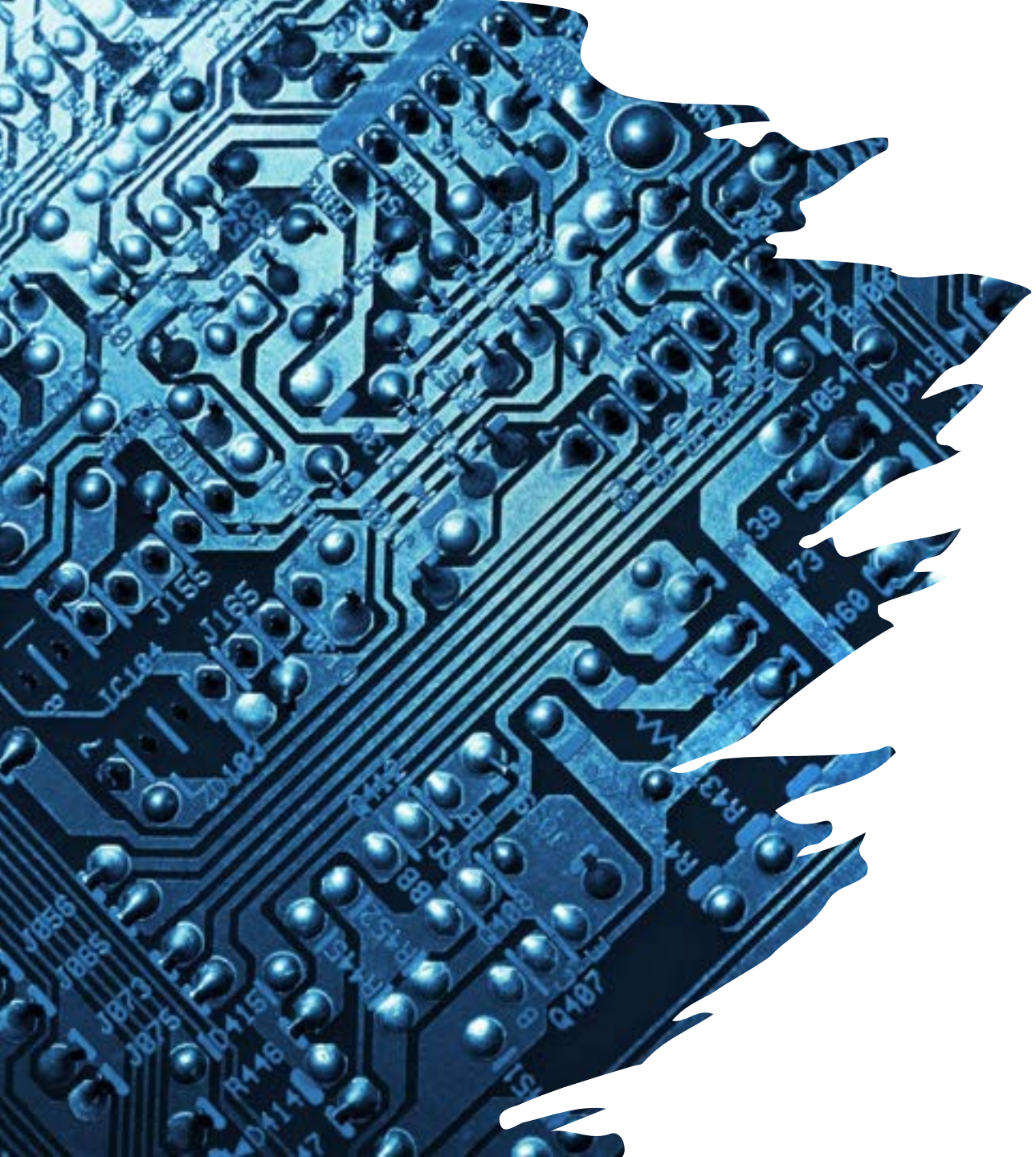
Third, defend at scale. This can be supported by building tools to continuously gather, harvest and share intelligence across the diverse stakeholders and using AI to build detective and predictive capabilities.

Finally, design adaptive policy interventions. Interventions should automatically recede from use when obsolete forms of fraud no longer pose active customer risk and vice versa.

RBI initiatives such as the Digital Payments Intelligence Platform, already embody some of these characteristics. It remains unclear where such initiatives sit alongside the remedial and preventative measures being discussed in the current policy proposals. Absent such clarity, it would appear that policies that seek to tackle discrete instances of fraud, such as the measures that have been just announced, may have limited effectiveness.

Chugh is Head - Future of Finance, Mahesh is Senior Research Associate, Dvara Research

- **Key Terms and Explanations**
- **Digital Payment Fraud** refers to fraudulent activity carried out through electronic payment channels such as UPI, mobile wallets, internet banking, cards, payment apps and online merchant platforms. The fraud may happen through phishing links, fake customer-care numbers, screen-sharing apps, OTP manipulation, QR-code traps or impersonation.
- **Authorised Push Payment Fraud** is a situation where the customer personally authorises the transaction, but does so after being deceived by the fraudster. For example, a person may willingly transfer money after receiving a fake call claiming to be from a bank or delivery company. This is different from hacking, because the transaction is technically initiated by the victim.
- **Social Engineering** means psychological manipulation of people into revealing information or performing an action. Fraudsters exploit fear, urgency, greed or trust. For example, “Your account will be blocked in 10 minutes unless you verify this OTP” is a classic social engineering technique.
- **Customer Liability Framework** refers to rules that decide whether the customer, bank or payment service provider should bear the loss after digital fraud. The issue is complex because many frauds involve both customer error and institutional vulnerability.
- **Low-Value High-Volume Fraud** refers to frauds where each individual loss is relatively small, but the number of victims is large. These cases often do not reach courts because litigation cost is higher than the amount lost.
- **Preventive Safeguards** are steps taken before fraud occurs, such as transaction limits, alerts, OTPs, cooling periods, device binding and additional authentication.
- **Remedial Safeguards** are steps taken after fraud occurs, such as compensation, complaint redressal, reversal of transaction, police complaint and recovery mechanism.
- **System-Level Resilience** means building a fraud-resistant digital payment ecosystem rather than only blaming individual users or targeting isolated fraud types. It requires banks, fintech companies, telecom operators, e-commerce platforms, law-enforcement agencies and regulators to work together.



- **Main Arguments and Substantive Parts**
- The central argument is that digital payment fraud cannot be controlled only through static safeguards such as transaction limits, age-based restrictions or one-time compensation. Fraudsters continuously adapt, so policy must also become adaptive, intelligence-driven and system-wide.
- A major concern is the rising value of fraudulent banking transactions. This shows that the expansion of digital finance has also expanded the surface area for fraud. Digital payments have improved convenience, inclusion and speed, but they have also created new vulnerabilities for ordinary citizens.
- The compensation framework is important because it recognises the pain of victims, especially in low-value frauds where legal remedies are expensive and slow. However, compensation alone does not create long-term deterrence. It may reduce immediate hardship, but it does not necessarily prevent repeat fraud.
- The framework also proposes preventive safeguards for certain transactions, such as additional authentication for transactions above a threshold, cooling periods for new beneficiaries and customer-led control switches. These steps may help, but they are still limited because they treat fraud as a fixed category rather than an evolving behaviour.
- The deeper argument is that fraud must be recharacterised. It is not merely a criminal act by an individual fraudster; it is a dynamic exploitation of gaps in the payment ecosystem. Therefore, the response must move from individual blame to ecosystem responsibility.
- A balanced counterpoint is that too many safeguards may reduce ease of digital payments. Excessive friction may discourage small users, elderly citizens, rural consumers and small businesses. Hence, the challenge is to design security without killing convenience.

- **Historical Evolution of the Issue**
- In the pre-independence period, financial fraud was largely associated with cash, informal credit, forged documents and physical impersonation. Banking penetration was limited, so fraud was localised and mostly paper-based.
- After independence, India expanded formal banking through nationalisation, rural branches, cooperative banks and priority-sector lending. Fraud increasingly appeared in the form of forged cheques, loan fraud, identity misuse and manipulation of banking documents.
- The 1990s liberalisation period brought computerisation, ATMs, cards and electronic banking. This created convenience but also introduced new forms of cyber-enabled financial crime, including card cloning, ATM skimming and password theft.
- The 2000s saw internet banking and mobile banking expand. With telecom growth and cheaper mobile phones, financial transactions moved beyond bank branches. Fraudsters began exploiting SMS, fake calls, phishing emails and online identity theft.
- The 2010s marked a structural shift with Aadhaar, Jan Dhan, mobile connectivity, UPI and fintech platforms. Digital payments became mass-based, not elite-based. The success of UPI created a huge public digital infrastructure, but fraud also became democratised.
- After demonetisation and the COVID-19 pandemic, digital payments became part of everyday life. Small vendors, elderly citizens, students, migrant workers and rural users entered the digital payment ecosystem. This widened financial inclusion but also exposed less digitally literate users to fraud.
- The present phase is marked by artificial intelligence, machine learning, real-time analytics and network-based fraud detection. The policy challenge now is not merely to punish fraudsters after the event, but to build a continuously learning fraud-prevention architecture.

COMPREHENSIVE ANALYSIS: REMEDIES FOR DIGITAL PAYMENT FRAUDS IN INDIA

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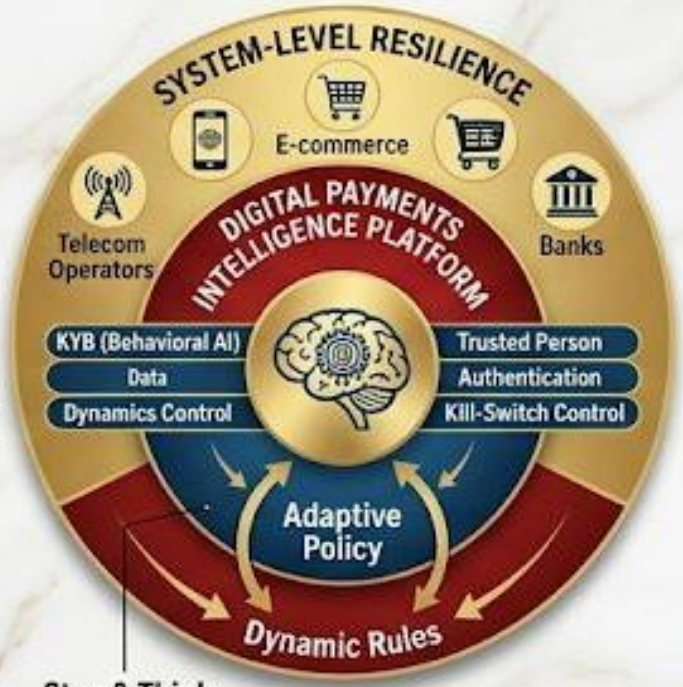
UNDERSTANDING THE CHALLENGE: APP FRAUDS

- **APP Fraud**
  APP Fraud is definition as taken wnot forumonnrizied APP, Fraud: Social manipulated in orimnment payment.
- **Social Engineering**
  Social Engineering promipulate:to prompt:volioes of natu:to tusing the rhartiner have emnutrent hurs inoo ility making a transfer.
- **Impact of ₹34,771 Cr** in recidinal investinn soluitions with the RBI's compensaton, and manal profitability of thevestimated on customent transfer.

TIMELINE

- **2000:** Skimming/ IT Act
- **2016:** UPI Boom/Social Engineering Rise
- **2023-24:** ₹11,261 Cr Fraud
- **2024-25:** ₹34,771 Cr Fraud (Critical Point)
- **2024-25:** ₹11,261 Cr Fraud
- **Proposed 2026:** AI-Driven Platform

PROPOSED ADAPTIVE ECOSYSTEM



Stop & Think
- Frictionless nudge and atroonomic orals
- Dynamic rules of sounds for static safeguards

LIABILITY FRAMEWORK

Low-Burden Remedy
for APP losses loses up to ₹50,000 or 80%

ETHICAL/ LEGAL
- Right to Privacy vs. Security
- Defining Consent
- Pariating a authentication
- Defining API

1 WAY FORWARD

- **Cognitive Friction**
  Cognitives fractions for improveen and eructions
- **Digital Literacy 2.0**
  Definiroe economy:l digital agency and continuiny
- **Unified Registry**
  Unifids covered to mating digital repranation

2 UPSC CSE LINKS

GS2 Governance/ Policy | GS3 Economy/ Security | GS4 Ethics

Previous question keywords:
Governance/Policy, GS3, Economy/Security, GS4, GIS4, Consispration, Ethics

- **Logical and Philosophical Base**

- The arguments rest on a fascinating blend of behavioural economics, game theory, and ethical philosophy.

- **Behavioural Nudge and Paternalism**: The “stop and think” approach—transaction lags, trusted contacts—is a classic 'nudge' from behavioural economics. It subtly redesigns the choice architecture to protect users from their own cognitive biases (like impulsivity under fear). It's a form of libertarian paternalism, gently steering without mandating.

- **Utilitarian Calculus of Harm**: The one-time compensation scheme is a pure utilitarian move. It calculates that a capped, low-burden financial guarantee for thousands of small-ticket victims generates a greater net societal good (trust preservation, unburdening of courts) than the high cost of individually investigating and prosecuting each low-value crime, many of which are cross-jurisdictional and intractable.

- **Game Theory and the Dynamic Adversary**: The critique of static rules is rooted in game theory. Fraud prevention is a sequential game, not a one-off problem. When the regulator (defender) deploys a fixed rule, the fraudster (attacker) will iteratively probe and find the next best exploitable loophole. The only stable strategy is to be dynamically unpredictable and to continuously shrink the attack surface through adaptive learning, making the cost of exploitation constantly high.

- **Epistemological Shift in Fraud Detection**: There's a deep philosophical pivot at play. The old model was deductive: define a fraudulent rule (e.g., "large transaction from a new device") and flag it. The proposed AI/ML model is inductive: the system learns what 'fraud-like' behaviour is from terabytes of data, often identifying correlational patterns the regulator never hypothesised. This shifts the knowledge problem from "what we think fraud looks like" to "what the data tells us fraud is becoming".

- **Multidimensional Analysis**

- **Social**: Fraud is a deeply social crime. It disproportionately impacts the digitally assimilated elderly, the aspiration-driven rural youth, and recent female entrants to banking. It creates a societal trust deficit, making citizens suspicious of legitimate digital governance tools like direct benefit transfers. The social engineering ploys exploit caste and community-based familiarity scripts, making redress not just financial but a social humiliation recovery process.

- **Political**: This is a high-stakes political-economy issue. The narrative of a 'Digital India' rests on citizen trust. A massive fraud wave creates a political liability for the government of the day. The RBI's proactive measures can be seen as an autonomous regulator insulating the political executive from the backlash, preserving the digital payment infrastructure that is a key governance metric.

- **Legal**: The legal fabric is being stretched. The liability framework is a regulatory instrument that effectively creates a new class of quasi-tort, bypassing the sluggish civil and criminal processes. It raises questions on the limits of delegated legislation by the RBI under the Payment and Settlement Systems Act, 2007, and its interplay with consumer protection law and the IT Act.

- **Ethical**: The central ethical tension is between *beneficence* (protecting the citizen from harm by nudging and AI profiling) and *respect for autonomy* (freedom to transact without a paternalistic brake). There's also a distributive justice issue: is it equitable to use pooled banking insurance funds to compensate a victim who ignored five SMS warnings, potentially at the cost of raising loan rates for a prudent borrower?

- **International**: The fraud ecosystem is global. India's domestic liability framework is a pioneering move, placing it alongside the UK's mandatory reimbursement model. This has reputational advantages but also makes India's payment system a testing ground. International best practices in building a national fraud intelligence grid (modelled on Singapore's Anti-Scam Centre) must be adapted, not adopted wholesale.

- **Economic**: Beyond the direct fiscal loss, there is a chilling effect on consumption. Fraud-induced anxiety can cause a behavioural shift back to cash, undermining the colossal public and private investment in payment infrastructure. It weights the efficiency of frictionless real-time payments against the necessity of costly friction for security, a fundamental economic trade-off.

Linkages with NCERTs

Class 10 Economics – Money and Credit: The issue directly links with banking, credit, trust and formal financial institutions. Digital fraud weakens confidence in formal finance.

Class 10 Economics – Globalisation and the Indian Economy: Digital payments are part of technology-driven integration. Fraud shows the risks of rapid market expansion without adequate safeguards.

Class 11 Political Science – Constitution: Rights and Duties: The issue connects with dignity, equality, privacy and state responsibility in protecting citizens.

Class 11 Sociology – Social Change and Social Order: Digital finance is a form of social change. Fraud shows how technology alters social behaviour, trust and vulnerability.

Class 12 Political Science – Politics in India since Independence: Financial inclusion, welfare delivery and digital governance can be connected to state capacity and public policy.

Class 12 Sociology – Indian Society: Digital fraud has differential effects across class, age, gender and literacy groups. It is not merely a technical problem but a social vulnerability issue.

Class 12 Economics – Money and Banking: The role of RBI, banks, payment systems, financial stability and customer confidence becomes directly relevant.

- **Linkages with UPSC CSE Syllabus**
- **GS Paper 2 – Governance:** Digital payment fraud connects with transparency, accountability, citizen-centric governance, grievance redressal and regulatory institutions.
- **GS Paper 2 – Vulnerable Sections:** Elderly people, rural users, women, low-income citizens and digitally illiterate users require special protection.
- **GS Paper 2 – Government Policies and Interventions:** RBI frameworks, digital payments regulation, cybercrime response and consumer protection policies are directly relevant.
- **GS Paper 3 – Economy:** The issue relates to banking, financial inclusion, digital economy, fintech, payment systems and formalisation.
- **GS Paper 3 – Internal Security:** Cyber fraud is part of cyber security, organised crime, financial crime and digital infrastructure protection.
- **GS Paper 3 – Science and Technology:** AI, machine learning, data analytics, authentication systems and digital platforms are important technological dimensions.
- **GS Paper 4 – Ethics:** Responsibility, accountability, trust, fairness, victim protection, institutional ethics and technology ethics are central.
- **Essay Paper:** Themes such as “Technology and trust”, “Digital India and citizen security”, “Innovation without inclusion is incomplete”, and “Convenience versus safety” can be developed.
- **Optional Linkages:** Public Administration, Sociology, Political Science, Economics and Philosophy all have strong conceptual linkages.

- **Way Forward**
- India needs a **dynamic fraud-risk architecture** where transaction rules are continuously updated based on emerging fraud patterns. Static safeguards should be replaced by adaptive risk scoring.
- There should be **real-time coordination** among banks, payment apps, telecom operators, e-commerce platforms, cybercrime cells and RBI-regulated entities. Fraud intelligence must move faster than fraud money.
- A **graded liability framework** is necessary. Liability should depend on customer behaviour, institutional safeguards, speed of reporting, system failure and fraud pattern. This will avoid both victim-blaming and careless compensation.
- Digital literacy must become **behavioural literacy**. Instead of only saying "Do not share OTP", campaigns must teach people how fraudsters create panic, urgency and false authority.
- Banks and payment apps should provide **customer-controlled safety tools**, such as transaction caps, beneficiary cooling periods, app-lock options, UPI disable switches and high-risk alert modes.
- A special focus is needed on **elderly and first-time users**. Simplified interfaces, voice alerts, vernacular warnings and assisted reporting systems can reduce vulnerability.
- AI-based fraud detection should be used, but with safeguards. Algorithms must be audited for fairness, accuracy and exclusion risks.
- Finally, grievance redressal must become faster. A victim should not be forced to run between bank, police, app and telecom company. A unified reporting and tracking mechanism is essential.

UPSC CSE Mains 2023, GS Paper III: "Discuss the challenges posed by cybercrimes to the internal security of India. Also, suggest measures to strengthen the cyber-security architecture." (Fraud in payment systems is a core cybercrime).

UPSC CSE Mains 2021, GS Paper III: "Evaluate the role of the Reserve Bank of India (RBI) in regulating the financial sector, with a special focus on NPA and digital payment ecosystem stability."

UPSC CSE Mains 2019, GS Paper III: "What is 'Social Media Integrity'? What threats does it face and what solutions are needed?" (Social engineering and vishing scams originate and spread on these platforms).

UPSC CSE Mains 2018, GS Paper IV: "Explain how ethics contributes to social and human well-being." (This case is a perfect illustration: ethical design in tech creates social well-being, its absence erodes it).

UPSC CSE Prelims 2023: A question on Central Bank Digital Currency (CBDC) and the risks associated with digital currency transactions, highlighting a consistent theme.

APSC CCE Mains (General Studies IV): "Examine the ethical dilemmas that technology poses to the personal and professional lives of public servants." (RBI officials designing such liability frameworks face these exact ethical dilemmas).

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