

The Hindu Important News Articles & Editorial For UPSC CSE

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The Goods and Services Tax (GST) Council, in its 56th meeting, has approved a major reform by rationalising the indirect tax structure into primarily two slabs—5% and 18%—along with a “special rate” of 40% for sin and luxury goods. Effective from 22nd September 2025, this overhaul is projected to reduce the tax burden on the common man, simplify compliance, and address anomalies like inverted duty structures. The move comes at a time when India seeks to balance fiscal stability with inclusive economic growth.

Two-rate GST to kick in on September 22

Govt. keeps slabs at 5% and 18%; introduces ‘special’ 40% rate for goods such as tobacco and luxury items | Individual life insurance policies, individual health policies will move to 0% slab from the earlier 18% | Move likely to reduce prices of daily-use goods, food items, life-saving medicines and cement

The Hindu Bureau
NEW DELHI

The Goods and Services Tax (GST) Council, during its 56th meeting, decided to revamp the tax structure into a primarily two-rate system, as proposed by the Central government, Union Finance Minister Nirmala Sitharaman announced on Wednesday.

Apart from the two rates of 5% and 18%, the new GST system would also include a 40% “special rate” on sin goods such as tobacco and luxury items such as large cars, yachts, and helicopters.

The decisions will come into effect from September 22 for most items, she said. Only tobacco and tobacco-related products will move to the new structure at a date to be specified by the Finance Minister.

The government also calculated that the net fiscal implication of the rate cuts, based on consumption patterns in 2023-24,

would be ₹48,000 crore. However, the officials clarified that the real implication would be known on the basis of current consumption, and that the rate rationalisation was expected to result in a buoyancy effect, and improved compliance.

“These reforms have been carried out with a focus on the common man,” Ms. Sitharaman said. “Every tax levied on the common man has gone through a rigorous looking into, and in most cases, the rates have come down. Labour-intensive industries have been given good support. Farmers and agriculture will benefit from the decisions. Health-related sectors will also benefit.”

She further said that common-use and middle-class items will see a reduction, with products such as hair oil, soap, shampoo, toothbrush, toothpaste, bicycle, table and kitchen ware, and other household



List is out: Union Finance Minister Nirmala Sitharaman speaking to the media after the GST Council meeting in New Delhi on Wednesday. PTI

articles being moved to 5% from either 18% or 12%.

No tax on Indian breads

The other items moving down to the 5% rate include namkeens, sauces, pasta, instant noodles, chocolates, coffee, and butter. Twelve specified

bio-pesticides, bio-methanol, and labour-intensive items such as handicrafts, marble, travertine blocks, granite blocks, and intermediate leather goods would move from 12% to 5%. Notably, cement will move from 28% to 18%.

The Finance Minister

further said that items such as ultra-high temperature milk, paneer, and all Indian bread, including rotis, chapatis, and parathas would see their tax rate fall to 0% from the earlier 5%.

On insurance services, individual life insurance policies and individual

health policies will move to 0% from 18%.

A total of 33 life-saving drugs and medicines will move from 12% to 0%, while spectacles to correct vision would move from 28% to 5%. The tax on electric vehicles has been retained at 5%.

“The long-pending inverted duty structure is being rectified for the man-made textile sector by reducing the GST rate on manmade fibre from 18% to 5% and manmade yarn from 12% to 5%,” Ms. Sitharaman said. “That will take care of every anomaly due to duty inversion in this sector.”

Inversion rectified

The inverted duty structure regarding fertilizers will also be rectified, with the duty on sulphuric acid, nitric acid and ammonia being reduced from 18% to 5%.

The special rate of 40% will apply only on particular sin and super-luxury

goods such as pan masala, cigarettes, gutka, chewable tobacco, zarda, unmanufactured tobacco and bidi, as well as goods including aerated water, caffeinated beverages, mid-size or large cars, motorcycles of engines exceeding 350 cc, helicopters and airplanes for personal use, and yachts or other vessels for private use.

Ms. Sitharaman further explained that the GST rate on pan masala, gutka, cigarettes, chewable and unmanufactured tobacco, and bidi would remain at 28%, in addition to a compensation cess, as currently in place.

Once the Centre discharges the loans it had borrowed to compensate States, these tobacco and tobacco-related items will move to the 40% slab. Ms. Sitharaman said the loan would likely be repaid within this calendar year.

KEY REDUCTIONS
» PAGE 4

Key Features of the Reform

- Two-Rate Structure:**
 - 5% on essential and common-use goods.
 - 18% on most other items.
 - 40% “special rate” for sin goods (tobacco, gutka) and luxury items (large cars, yachts, helicopters).
- Zero Tax on Essentials:**
 - Life insurance and health insurance policies moved from 18% to 0%.
 - Ultra-HT milk, paneer, rotis, chapatis, parathas, and 33 life-saving drugs shifted to 0%.
- Reduction in Daily-Use Goods:**
 - Soap, shampoo, toothpaste, bicycles, kitchenware, chocolates, coffee, and cement moved to lower slabs.
- Addressing Inverted Duty Structures:**
 - Textiles: manmade fibre and yarn reduced to 5%.
 - Fertilizers: key chemicals brought down from 18% to 5%.

Daily News Analysis

5. Revenue Implications:

- Estimated fiscal cost: ₹48,000 crore annually.
- Government expects buoyancy and compliance gains to offset revenue losses.

Significance of the Move

- **Simplification & Transparency:** Moves towards fewer GST slabs, reducing complexity for taxpayers.
- **Consumer Relief:** Prices of essentials, health insurance, and medicines are expected to decline, aiding middle-class and vulnerable groups.
- **Boost to Labour-Intensive Sectors:** Handicrafts, leather, and textiles gain competitiveness through lower tax rates.
- **Rectification of Anomalies:** Inverted duty structures that hurt manufacturing are being addressed.
- **Balanced Approach:** Luxury and sin goods continue to face high taxation, ensuring progressivity in the tax system.

Challenges Ahead

- **Revenue Concerns:** The fiscal cost of ₹48,000 crore could strain government finances if buoyancy doesn't materialise.
- **Implementation Issues:** Transition to new slabs may create short-term confusion for businesses and States.
- **Centre-State Tensions:** States dependent on GST compensation may raise concerns, especially with pending loan repayments.
- **Inflationary Pressures:** Although most items are cheaper, taxation of sin/luxury goods may have sector-specific impacts.

Conclusion

The two-rate GST structure marks a significant milestone in India's indirect tax reform, aligning with the long-standing demand for simplicity and fairness. By reducing rates on essentials and correcting duty inversions, the reform directly benefits consumers and producers alike. However, fiscal implications and state-level concerns will test its sustainability. If complemented by stronger compliance and digital monitoring, this rationalised GST regime can enhance efficiency, equity, and ease of doing business—further strengthening India's economic architecture.

UPSC Prelims Practice Question

Ques: The term "inverted duty structure" recently in news with reference to GST refers to:

- (a) A situation where tax rate on finished goods is higher than on raw materials.
- (b) A situation where tax rate on inputs is higher than on finished goods.
- (c) A case where both input and output are exempted from GST.
- (d) A case where tax is levied twice on the same product.

Ans : b)

UPSC Mains Practice Question

Ques: Correcting inverted duty structures is key to promoting manufacturing competitiveness in India. Evaluate the significance of the GST rationalisation in addressing this issue, with special reference to the textile and fertilizer sectors. **(150 Words)**



North India is reeling under severe monsoon-related disasters, with relentless rainfall triggering floods, landslides, and dam breaches across multiple States. Himachal Pradesh, Punjab, Jammu & Kashmir, Haryana, Delhi, and Chhattisgarh have reported dozens of deaths, large-scale displacement, and crop devastation. The crisis highlights not only the human and economic toll of extreme weather but also the vulnerabilities in India's disaster preparedness and climate adaptation strategies.

Key Highlights from the Situation

- **Himachal Pradesh:**
 - 11 deaths in 24 hours; 341 lives lost this monsoon.
 - 45 cloudbursts, 122 landslides, 95 flash floods.
 - ₹3,526 crore worth of cumulative losses.
- **Punjab:**
 - 37 deaths reported; 1.75 lakh hectares of crops destroyed.
 - Sutlej, Beas, Ravi rivers overflowing; 23 districts affected.
- **Jammu & Kashmir:**
 - 2 deaths, hundreds rescued.
 - Jhelum and Chenab flowing above danger mark.
 - Floods damaged bridges and roads, Srinagar–Jammu highway shut.
- **Haryana & Delhi:**
 - Widespread waterlogging in Haryana.
 - Yamuna in Delhi above danger mark, floodplains inundated.
- **Chhattisgarh:**
 - 4 deaths after Luti (Satbahini) dam collapsed in Balrampur.
- **Wider Context:**
 - A new low-pressure area over Bay of Bengal threatens further rain in Odisha, Andaman Islands, and Bengal.

Dozens dead as heavy rain, floods, landslides batter northern States

The Hindu Bureau
DELHI/CHANDIGARH/
SRINAGAR/RAIPUR

Heavy rain and floods continued to batter States in northern India on Wednesday.

In Himachal Pradesh, 11 people died in the past 24 hours during which rain triggered landslides. In Punjab, the swollen Sutlej, Beas and Ravi rivers caused widespread devastation with the State government pegging the death toll in recent rain-related incidents to 37.

In Jammu & Kashmir, two people were killed and hundreds rescued following a heavy downpour. The Jhelum and Chenab rivers were flowing above the danger mark.

Nearly 100 border outposts of the Border Security Force and around 110 kilometres of fencing along the Pakistan border in Jammu and Punjab have been affected by floods, a senior government official said.

In Chhattisgarh, four people were killed, three injured and three went missing when a small dam collapsed in Balrampur district. A fresh low-pres-



On duty: NDRF personnel prepare to patrol a flooded area at Gaggo Mahal village near Amritsar on Wednesday. PTI

sure area over the Bay of Bengal brought copious rain to Odisha and is likely to bring heavy rain to the Andaman islands and southern Bengal in the next few days.

In Himachal Pradesh, seven deaths were reported from Sundernagar of Mandi district, two in Kullu district and two from Bithal in Shimla district. Chief Minister Sukhvinder Singh Sukhu said 341 persons lost their lives this monsoon so far, adding that there had been 45 cloudbursts, 122 landslides and 95 flash floods. The State incurred a cumulative loss of ₹3,526 crore till date, he said.

Punjab Revenue Minis-

ter Hardeep Singh Mundian said the State is reeling under one of the "worst floods" in recent decades, with crop devastation reported across 1,75,216 hectares of farmland. The Minister said Gurdaspur, Amritsar, Mansa, Ferozepur and Fazilka were among the worst-hit of the State's 23 districts.

In Haryana, incessant rain caused waterlogging across several districts. Haryana Public Health Minister Ranbir Gangwa directed officers to identify vulnerable areas and ensure uninterrupted supply of drinking water across the State. He ordered field officers to be on duty 24

hours. In adjoining Delhi, the overflowing Yamuna inundated dwellings on the floodplains. The river, swollen as Wazirabad and Hathnikund barrages kept releasing high volumes of water, crossed the danger mark in the city.

In J&K, all schools and the Srinagar-Jammu highway were shut. Officials said heavy discharge in rivers and streams, and landslides damaged scores of bridges and inter-district roads in the Jammu division's Reasi, Rajouri, Kishtwar, Doda and Jammu. In the Kashmir valley, roads were damaged in Kulgam and Shopian districts.

Sakeena Itoo, Minister for Health and Medical Education, directed doctors, paramedics and other medical staff to remain available round the clock.

Chhattisgarh Chief Minister Shri Vishnu Deo Sai expressed "deep condolences on the incident of breaking of Luti (Satbahini) Dam", the government said. "The Chief Minister assured that the State government stands with the bereaved families in this difficult time," it added.

(With inputs from PTI)

Significance of the Event

1. **Climate Change Impact:**
 - Rising frequency of extreme rainfall events and cloudbursts in Himalayan states shows climate variability.
2. **Agricultural Losses:**
 - Punjab and Haryana, India's food grain hubs, face crop devastation, impacting farmers' incomes and national food security.
3. **Infrastructure Vulnerability:**
 - Highways, bridges, and border fencing damaged—pointing to weak resilience of critical infrastructure.
4. **Humanitarian Crisis:**
 - Displacement, school closures, and healthcare strain reflect multidimensional vulnerability.

5. National Security Angle:

- Floodwaters affected BSF outposts and fencing along Pakistan border, highlighting strategic implications.

Challenges in Disaster Management

- **Preparedness Gaps:** Limited forecasting and early-warning reach in remote areas.
- **Infrastructural Fragility:** Roads, dams, and barrages not designed for extreme weather loads.
- **Coordination Issues:** Multi-state floods require Centre–State synergy, which is often slow.
- **Rehabilitation Costs:** Rising financial burden on states already stretched post-pandemic.

Way Forward

1. **Strengthening Forecasting & Early Warning:** Expand IMD's precision forecasting to block and village levels.
2. **Resilient Infrastructure:** Climate-proof roads, dams, barrages, and urban drainage systems.
3. **Integrated River Basin Management:** Coordinated flood management across states sharing river basins.
4. **Insurance & Compensation:** Expand crop and disaster insurance coverage for farmers.
5. **Community-Based Preparedness:** Empower local bodies and volunteers in relief and rehabilitation.
6. **Climate Adaptation Strategy:** Mainstream climate-resilient planning in agriculture and infrastructure policies.

Conclusion

The floods in North India underline the urgent need for a holistic approach to disaster risk reduction that combines **climate resilience, infrastructure preparedness, and community participation**. While relief operations are ongoing, the long-term challenge lies in shifting from a reactive to a **proactive disaster management framework**. Unless India integrates climate adaptation with development planning, extreme monsoon events will continue to impose heavy human and economic costs.

Daily News Analysis

UPSC Prelims Practice Question

Ques: With reference to the Border Security Force (BSF), consider the following:

1. It guards India's borders with Pakistan and Bangladesh.
2. In 2025 floods, several BSF outposts and fencing along the Punjab and J&K border were affected.
3. The BSF functions under the Ministry of Home Affairs.

Which of the above statements is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans : d)

UPSC Mains Practice Question

Ques: Examine the challenges in flood management in India with reference to the recent devastation in Himachal Pradesh, Punjab, and Jammu & Kashmir. Suggest measures to strengthen India's disaster resilience. **(150 Words)**



External Affairs Minister S. Jaishankar's meeting with German Foreign Minister Johann Wadepful in New Delhi reflects India's growing engagement with Europe at a time of heightened global uncertainty. Both sides underlined their commitment to expedite the long-pending **India-EU Free Trade Agreement (FTA)** while navigating challenges posed by U.S. sanctions, Russia's war in Ukraine, and China's assertiveness in the Indo-Pacific.

Key Highlights of the Meeting

1. India-EU FTA

- Both sides reaffirmed their commitment to conclude negotiations swiftly, with monthly meetings planned.
- Jaishankar stressed that an FTA could act as a "ballast" for global economic stability.
- Contentious issues: agricultural market access, food and dairy products, and digital regulations.

2. Sanctions & Russian Oil

- Concerns over possible **secondary sanctions** by EU, following the U.S., against countries importing Russian oil.
- Germany and France have indicated support for penal measures.
- EU has already banned trade with Nayara Energy (Rosneft-linked consortium in India).

3. Geopolitical Context

- Wadepful called Russia's war and China's aggression the "biggest international challenges".
- India reiterated its stance on **strategic autonomy** and a **multi-polar world order**.
- Modi's recent meeting with Putin and Xi Jinping added significance to these discussions.

4. Indo-Pacific-Europe Security Link

- Germany emphasised China's aggressive behaviour in the Indo-Pacific.
- Highlighted how Indo-Pacific stability is linked to European security.

Jaishankar meets German Foreign Minister, pushes for EU-India FTA

Trade agreement will help stabilise global economy as a 'ballast which today the world economy really needs', says External Affairs Minister; the visiting German Minister calls Russian and Chinese aggression the biggest international challenges

Suhasini Haidar
NEW DELHI

India and Germany committed on Wednesday to doubling trade and expediting efforts to complete the India-European Union Free Trade Agreement under negotiation, amid uncertainty over whether Europe would follow the U.S. in imposing secondary sanctions on countries for buying Russian oil.

After talks with German Foreign Minister Johann Wadepful, External Affairs Minister S. Jaishankar said the two sides discussed the "twin challenges" of economic volatility and political uncertainty, a reference to the U.S. imposition of 50% tariffs and sanctions.

Speaking at a press conference after the meeting, Mr. Wadepful called Russia and China the two biggest challenges to the international world order.

"We would like the [India-EU FTA talks] to move



Common cause: S. Jaishankar during a meeting with his German counterpart, Johann Wadepful, in New Delhi. PTI

to a decisive conclusion in the coming days," Mr. Jaishankar said, referring to the next round of talks between trade negotiators. He added that an FTA would help stabilise the global economy as a "ballast which today the world economy really needs".

Indian and EU negotiators have fast-tracked their talks and expect to meet more regularly, possibly every month in order to reach the year-end deadline set by EU President Ursula Von der Leyen and Prime Minister Narendra

Modi when they met in February this year. However, as with the India-U.S. trade negotiations, the two sides have differences over issues such as agricultural market access for food and dairy products.

Another major issue may arise between the two sides if the EU leadership follows U.S. President Donald Trump in imposing secondary sanctions on Indian companies due to the purchase of Russian oil. On Friday, German Chancellor Friedrich Merz announced that Germany and France

would push for the U.S. and the EU to enforce sanctions on "other nations whose purchases of oil and gas finance a large part of Russia's war economy".

In Delhi, Mr. Wadepful did not respond directly to a question about whether Germany would endorse the penalty tariffs against India, but said their intention was to ensure Russia would come to the negotiating table with Ukraine.

"We have not used tariffs but sanctions that we have imposed on Russia so as to ensure that Russia which has to fund its war will be less able to do so", he said, adding that while the EU countries did not want to stop countries from accessing the oil they need, Russia should not be able to use "detours" to sell its oil to Europe. In the last round of sanctions, the EU had banned trade with Nayara Energy, a consortium of Russian oil major Rosneft and other companies in India.

The German Foreign Mi-

nister, who arrived in India a day after Mr. Modi's meeting with Russian President Vladimir Putin and Chinese President Xi Jinping, made international headlines, also lashed out at Russian and Chinese "aggression", and said he welcomed Mr. Modi's call for a ceasefire in Ukraine during his meetings.

"China's increasingly aggressive behaviour in the Indo-Pacific is cause for concern for both our countries," he said, adding, "Security in the Indo Pacific is closely linked to security in Europe. Russia's war of aggression, for us in Germany and Europe, remains the biggest challenge to our security policy."

Mr. Jaishankar sidestepped the comments by Mr. Wadepful, saying India believed a "multi-polar world with strategic autonomy can best respond [to economic and political challenges] through more intensive consultations and cooperation among key member states".

Significance for India

• Economic Dimension:

- India-EU trade (over €120 billion annually) could expand significantly with an FTA, enhancing market access for Indian goods and services.
- Diversification of trade partners reduces overdependence on U.S. and China.

• Strategic Autonomy:

- India's balancing act—deepening ties with the EU while maintaining energy security through Russian oil imports.
- Rejects binary choices in great-power rivalries.

• Geopolitical Leverage:

Daily News Analysis

- Shared concerns with Europe on China in Indo-Pacific strengthen India's strategic positioning.
- India projects itself as a stabilising force amid global power shifts.

Challenges

- **Sanctions Risk:** Secondary sanctions on Indian firms could complicate trade and FTA talks.
- **Market Access Disputes:** EU's demands on agriculture and dairy clash with India's protectionist stance.
- **Differing Priorities:** EU focuses on human rights and sustainability clauses in trade deals; India prioritises market access and flexibility.
- **Strategic Divergence:** India's neutral stance on Ukraine vs. Europe's hardline anti-Russia approach.

Way Forward

1. **Pragmatic Negotiation:** India must push for a balanced FTA that safeguards farmers while ensuring broader economic gains.
2. **Energy Diplomacy:** Continue diversifying energy imports while insulating trade from sanctions risks.
3. **Indo-Pacific Cooperation:** Build on EU's **Indo-Pacific strategy** through joint exercises, technology sharing, and resilient supply chains.
4. **Multipolar Engagement:** Strengthen partnerships with both Western democracies and Global South to reinforce India's autonomy.

Conclusion

The India–Germany dialogue underlines the evolving contours of India–EU relations—anchored in trade, but increasingly shaped by geopolitical challenges. While the FTA holds the promise of economic ballast, its success depends on managing divergences over Russia, agriculture, and regulatory frameworks. For India, deepening ties with Europe offers both economic opportunities and strategic leverage in navigating an uncertain multipolar world.

Daily News Analysis

UPSC Prelims Practice Question

Ques :Which of the following are potential benefits of an India–EU FTA?

1. Greater access for Indian textiles and leather goods in EU markets.
2. Enhanced cooperation on digital and green technologies.
3. Reduced dependence on limited trade partners.

Select the correct answer:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans : d)

UPSC Mains Practice Question

Ques :How can the conclusion of an India–EU FTA contribute to India's economic growth, trade diversification, and technology adoption? Highlight the major challenges that must be addressed. **(150 Words)**



Quantum computing holds immense potential for revolutionising problem-solving in cryptography, drug discovery, materials science, and optimisation. However, the biggest obstacle to realising this potential is **decoherence**, i.e., the fragility of qubits against environmental noise. A novel approach rooted in fundamental physics — using **Majorana particles** — is emerging as a promising way to shield quantum information at the hardware level itself.

What are Majorana Particles?

- **Theoretical origin:** Proposed by Ettore Majorana (1937) — particles that are their own antiparticles.
- **Difference from conventional particles:** Unlike electrons or protons, which have distinct antimatter counterparts, Majoranas are perfectly symmetrical.
- **Realisation:** Though not conclusively found in high-energy physics, condensed matter systems (e.g., superconducting nanowires under strong magnetic fields) exhibit **quasiparticles** behaving like Majoranas.

Why are they Relevant to Quantum Computing?

1. Problem of Decoherence:

- Current qubits (superconducting, trapped ion, spin-based) are highly sensitive.
- Error correction demands hundreds of physical qubits for one logical qubit.

2. Majorana Advantage:

- **Non-local encoding:** A qubit can be defined by two spatially separated Majorana modes, reducing vulnerability to local noise.
- **Non-Abelian Statistics:** Swapping ("braiding") Majoranas changes the joint quantum state in a topologically protected way.
- **Topological Protection:** Computations depend only on braid topology, not on precise movement details → robust against small disturbances.

Current Status of Research

- **Experimental Hints:** Conductance measurements in nanowires suggest signatures of Majorana modes.
- **Challenges:**
 - Proving braiding experimentally.
 - Maintaining stable isolation of modes.
 - Overcoming "quasiparticle poisoning" (unwanted excitations mimicking signals).
- **Technological Spin-offs:** Advances in nanowire growth, superconducting contacts, and material engineering.

Significance

- **For Quantum Computing:**

How Majorana particles promise to shield quantum computers from noise

In our everyday world, swapping two oranges changes nothing in the quantum world, however, don't change their wavefunction when swapped, fermions change only by a minus sign if you exchange two non-fermion atoms, however, the joint quantum state changes in a deeper way.

Vandana Mishra

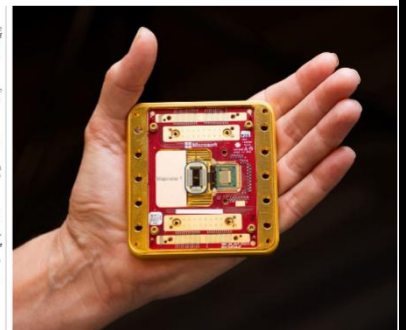
In the race to make quantum computers practical, scientists have found themselves drawn to some of the strangest ideas in physics, new ones stronger, but also more promising, than the notion of using particles that are their own antiparticles. This is the concept behind Majorana particles.

In the 1930s, the Italian physicist Ettore Majorana proposed a particle that, unlike the electron or proton, would be indistinguishable from its own antiparticle. In most cases, matter and antimatter are exact opposites. If you bring them together, they annihilate in a flash of energy, but a Majorana particle is a perfect neutral of itself. If you touch it, it annihilates and creates itself, leaving no trace.

For decades, this imaginary animal eluded scientists. But in the last few years, physicists searching for Majorana in superconducting nanowires have found a handful of "quasiparticles" that behave like Majoranas. These quasiparticles are not particles in the traditional sense, but rather, they are collective excitations of the nanowire. They are not made of atoms, but rather, they are made of the collective motion of the atoms.

The fact that these Majorana modes could exist in a tabletop experiment is a big deal. It means that we can now create and manipulate Majorana modes in the lab. This is a big step towards building a quantum computer that is robust against noise. The reason for this is that Majorana modes are not affected by local perturbations, which is a big advantage over other types of qubits.

Majorana modes are not just a theoretical curiosity. They are a real thing, and they are being used to build quantum computers. The first quantum computer to use Majorana modes was built by Microsoft in 2019. It was a small computer, but it was the first of its kind. It was a big step towards building a quantum computer that is robust against noise.



Microsoft's Majorana 1 quantum computing chip. (AP Wirephoto)

In principle, a quantum computer could be programmed simply by moving its Majorana modes through a sequence of braids. Its robustness would come not from the fundamental physics of the particles themselves.

It could make these devices more powerful, or make them more robust. It could make them more powerful, or make them more robust. It could make them more powerful, or make them more robust. It could make them more powerful, or make them more robust.

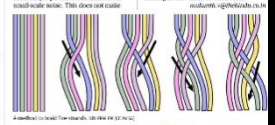
Pushing the frontiers In principle, a topological quantum computer could be programmed simply by moving its Majorana modes through a sequence of braids. Its robustness would come not from the fundamental physics of the particles themselves.

Quantum computing is a new way of thinking about computation. It is a new way of thinking about computation. It is a new way of thinking about computation. It is a new way of thinking about computation.

With Majorana modes, scientists have found a way to build a quantum computer that is robust against noise. This is a big step towards building a quantum computer that is robust against noise. This is a big step towards building a quantum computer that is robust against noise.



Ettore Majorana, an Italian physicist. (AP Wirephoto)



A diagram illustrating the concept of braiding Majorana modes. (AP Wirephoto)

Daily News Analysis

- Reduced error-correction overhead.
- Potentially fewer qubits needed → more efficient, scalable hardware.
- **For Physics & Technology:**
 - Deeper insights into topological matter.
 - Innovations in **quantum sensing** and **nanoelectronics**.
- **Strategic Implications:**
 - Countries investing in quantum supremacy (U.S., EU, China) are closely tracking Majorana research.
 - Could tilt the balance of technological competition and national security.

Challenges Ahead

- **Experimental Validation:** Definitive proof of Majorana braiding still pending.
- **Engineering Complexity:** Creating 2D geometries for braiding and isolating modes.
- **Theoretical Uncertainty:** Signals may be misinterpreted due to other quantum effects.
- **Time Horizon:** Transition from lab demonstrations to commercial machines may take decades.

Conclusion

Majorana particles exemplify the fusion of cutting-edge physics and applied technology. If successfully harnessed, they could transform quantum computing by offering **intrinsically stable qubits**, making practical quantum advantage feasible with far fewer resources. Even if the ultimate goal remains distant, the pursuit of Majoranas is driving breakthroughs in materials science and condensed matter physics, ensuring scientific and technological gains along the way.



Daily News Analysis

UPSC Prelims Practice Question

Ques: In the context of quantum computing, Majorana-based qubits are considered promising because they:

- (a) Can operate at room temperature without any cooling.
- (b) Encode quantum information non-locally, making them less sensitive to local noise.
- (c) Do not require any quantum error correction codes.
- (d) Function using classical bits with higher speed.

Ans : (b)

UPSC Mains Practice Question

Ques: Quantum computing is seen as a disruptive technology of the future, but it faces challenges of error and instability. Explain how Majorana-based qubits provide a possible solution. Also highlight the challenges in experimentally realising them. (150 words)



The debate on whether reservations should exceed the 50% ceiling has resurfaced with renewed intensity. Recent developments include the Bihar opposition's proposal to enhance reservations to 85% and the Supreme Court's notice to the Union government on introducing a 'creamy layer' for Scheduled Castes (SCs) and Scheduled Tribes (STs). This debate brings into focus the tension between **formal equality** and **substantive equality**, and whether the current system adequately addresses historic injustices and present-day inequities.

Constitutional Provisions

- **Article 15:** Prohibits discrimination on grounds of religion, race, caste, sex, or place of birth, while allowing special provisions for socially and educationally backward classes, SCs, and STs.
- **Article 16:** Guarantees equality of opportunity in public employment and permits reservations for backward classes not adequately represented in State services.

Formal vs. Substantive Equality

- **Formal Equality:** Everyone is treated the same; reservations are viewed as an exception, hence capped at 50% (Balaji vs. State of Mysore, 1962).
- **Substantive Equality:** Acknowledges that historical disadvantages require proactive state intervention. In State of Kerala vs. N. M. Thomas (1975), the Court held that reservations are not an exception but a continuation of equality of opportunity.

Judicial Position on the 50% Cap

- Indra Sawhney vs. Union of India (1992): Upheld OBC reservations at 27% but reaffirmed the 50% cap, except in exceptional circumstances. Introduced the concept of the 'creamy layer' for OBCs.
- Janhit Abhiyan vs. Union of India (2022): Upheld 10% EWS quota, stating that the 50% ceiling applied only to backward class reservations.
- Recent cases (e.g., Davinder Singh, 2024) have hinted at the need for sub-classification and creamy layer within SCs/STs, though the Union has resisted this.

Concerns with Current System

Should reservations exceed the 50% cap?

What do Articles 15 and 16 of the Constitution guarantee? How are formal and substantive equality different? Are reservations an exception to the idea of equality of opportunity or a continuation? Are reservation benefits concentrated within specific sub-castes in OBCs, SCs and STs?

EXPLAINER

Ranganathan R.

The story so far:

The leader of the opposition in Bihar, Tejashwi Yadav, has declared that if voted to power, their alliance would increase reservation to 85%. In another development, the Supreme Court has issued notice to the Union government on a petition demanding the introduction of a 'system' similar to the 'creamy layer' for reservations among the Scheduled Castes (SC) and Scheduled Tribes (ST).

What are constitutional provisions? Articles 15 and 16 guarantee equality to all citizens in any action by the state (including admission to educational institutions) and public employment respectively. In order to achieve social justice, these Articles also enable the state to make special provisions for the advancement of socially and educationally backward classes or Other Backward Classes (OBCs), SCs and STs. A brief summary of important developments with respect to reservations at the central level is provided in the Table. The reservation in the Centre at present stands as follows: OBCs (27%), SCs (15%), STs (7.5%) and for the Economically Weaker Section (EWS), 10%, resulting in a total reservation of 50%. The reservation percentages vary from State to State according to their demographic profile and policies.

What have courts ruled?

The issue arises due to two ostensibly competing aspects of equality – formal and substantive. The Supreme Court in Balaji versus State of Mysore (1962) noted that reservations under Articles 15 and 16 for backward classes should be 'within reasonable limits' and should be adjusted with the interests of the community as a whole. The court further ruled that such special provisions for reservation should not exceed 50%. This is seen as an endorsement of formal equality where reservations are seen as an exception to equality of opportunity and hence cannot exceed 50%.

Substantive equality on the other hand focuses on the belief that formal equality is not sufficient to redress the difference between groups that have enjoyed privileges in the past and groups that have been historically underprivileged and underrepresented. A seven-judge bench in State of Kerala versus N. M. Thomas (1975) have broadened the aspect of substantive equality. The court in this case opined that reservation for backward classes is not an exception to equality of opportunity but is an assertion and continuation of the same. However, since the 50% ceiling was not a question before the court, it did not give a binding judgment on this aspect in the case.

In the Indra Sawhney case (1992), a nine-judge bench upheld the 27% reservation for OBCs. It held that caste is a determinant of class in the Indian context. Further, in order to uphold the equality of opportunity, it confirmed the cap of 50% for reservation as held in the Balaji case, unless there are exceptional circumstances. The court also provided for the exclusion of a 'creamy layer' within OBCs. In the Janhit Abhiyan case (2022), the court by a majority of 3:2 upheld the constitutional validity of the EWS reservation. It held that economic criteria could be a basis for reservation and opined that the 50% limit set in the Indra Sawhney case was meant for backward



Hundred of celebrating Marathi community members celebrate after the Maharashtra government accepted Marathi language Prof's demands, including granting Marathi caste certificates which will make them eligible for reservation benefits available to OBCs, in Mumbai, on September 2, 2024.

THE GIST

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There has been a growing demand for increasing the reservation percentage beyond the 50% cap. This may be seen as violating such right. Nevertheless, substantive equality through affirmative action is required to uplift the underprivileged.

Right to equality of opportunity is a fundamental right and an increase in reservation up to 85% may be seen as violating such right. Nevertheless, substantive equality through affirmative action is required to uplift the underprivileged.

The journey of reservations

A brief summary of important developments with respect to reservations at the central level

Year	Key development
1950 and 1952	Commencement of the Constitution and the First Amendment – enabling provisions in Articles 15 and 16 for the advancement of OBCs, SCs and STs.
1962	Reservations for SCs and STs fixed at 15% and 7.5% respectively in central educational institutions and public sector undertakings.
1992	The introduction of 27% reservation for OBCs in central government employment based on the recommendations of the Mandal Commission.
2006	Articles 15(3) inserted by the 78th constitutional amendment that enabled reservations for OBCs, SCs and STs in educational institutions, including private ones.
2019	Articles 14(1) and 14(2) inserted by the 103rd constitutional amendment which enabled up to 10% reservation in the EWS among the unreserved category in educational institutions and public employment.

What are the competing arguments?

Dr. B. R. Ambedkar in his Constituent Assembly speech in November 1948 justified the need to have reservations for backward communities that have been left out in the past. He also opined that reservations should be confined to a minority in order to uphold the guaranteed right of 'equality of opportunity'.

However, there has been a growing demand for increasing the reservation percentage beyond the judicial cap of 50% to reflect the proportion of backward classes in the population. The demand for a caste census has been strong in order to have actual data about this proportion rather than mere estimates. It must also be noted that as per various government replies in Parliament, 40-50% of seats reserved for OBCs, SCs and STs in the Central government remain unfilled.

Another contentious issue relates to the concentration of reservation benefits. The Rohini Commission, set up for providing recommendations on the sub-classification among OBC castes, has

estimated that 97% of reserved jobs and seats in educational institutions have been garnered by just around 22% of the OBC caste/sub-castes at the central level. Close to 1,000 of around 2,000 communities under the OBC category have had zero representation in jobs and educational institutions.

A similar issue of concentration of reservation benefits persist in SC and ST categories as well. There is no exclusion of 'creamy layer' for these communities. In State of Punjab versus Davinder Singh (2024), four judges of a seven-judge bench expressed upon the Central government the need to frame suitable policies for the inclusion of 'creamy layer' in SC and ST reservations. However, the Central government in a cabinet meeting in August 2024 reaffirmed that the 'creamy layer' does not apply to reservations for SCs and STs.

Critiques who are against the extension of a 'creamy layer' to SCs and STs argue that the vacancies for these communities are anyway not fully filled. Therefore, the question of a 'creamy layer' within such communities usurping the opportunities of even more marginalised castes does not arise. It is also likely that the exclusion of a 'creamy layer' based on any criteria

will result in an even more increased backlog of vacancies. There is also a fear that such backlog vacancies may be converted in the long run to unreserved seats thereby depriving the SCs and STs of their rightful share of opportunities.

What can be the way forward? Right to equality of opportunity is a fundamental right and an increase in reservation up to 85% may be seen as violating such right. Nevertheless, substantive equality through affirmative action is required to uplift the underprivileged. Based on empirical data of the census Census in 2022, which will also enumerate backward castes, there must be wide-ranging discussions with all stakeholders to arrive at a suitable level of reservation. Equally important is to implement sub-classification among the OBCs as per the Rohini Commission report based on Census data. With respect to SCs and STs, as demanded in the plea before the Supreme Court, a 'two-tier' reservation system may be considered. Under such a scheme, priority would be given to more marginalised sections before extending it to those who are relatively well off within those communities. These measures would ensure that benefits of reservation reach the more marginalised among the underprivileged in successive generations.

It must also be borne in mind that considering the opportunities available in the public sector and the young population of our country, any scheme of reservation would not meet the aspirations of large sections of the society. There must be sincere efforts to provide suitable skill development mechanisms that would enable our youth to be gainfully employed.

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Daily News Analysis

1. **Over-Concentration of Benefits:**

- Rohini Commission found that 97% of central OBC benefits were cornered by 25% of OBC sub-castes; around 1,000 OBC communities had zero representation.
- Similar inequities exist within SCs and STs.

2. **Unfilled Vacancies:**

- Government data shows 40-50% of reserved posts remain vacant at the Centre. This weakens arguments for a creamy layer in SC/STs.

3. **Population vs. Reservation:**

- Backward classes often demand that reservation levels reflect their proportion in society. The absence of a caste census fuels contention.

Way Forward

- **Data-Driven Policy:** The upcoming 2027 Census should include caste enumeration to inform reservation policy.
- **Sub-Categorisation:** Implement Rohini Commission recommendations to ensure equitable distribution of OBC benefits.
- **Two-Tier Reservation for SC/STs:** Prioritise more marginalised groups within these categories to prevent elite capture.
- **Beyond Reservation:** Skill development, private sector inclusion, and quality education must complement affirmative action.
- **Balance:** Any move to breach the 50% limit must carefully weigh constitutional values, social justice, and meritocracy.

Conclusion

The debate on exceeding the 50% cap reflects the evolving nature of India's social justice discourse. While reservations remain a vital tool for substantive equality, over-reliance on them risks diluting the principle of equal opportunity for all. A balanced approach—anchored in empirical data, equitable sub-categorisation, and complementary welfare measures—offers the most sustainable path forward.

UPSC Prelims Practice Question

Ques: Consider the following statements regarding judicial rulings on reservations:

1. In Indra Sawhney (1992), the Supreme Court introduced the concept of the 'creamy layer'.
2. In State of Kerala vs. N. M. Thomas (1975), the Court upheld the idea of substantive equality.
3. In Balaji vs. State of Mysore (1962), the Supreme Court ruled that reservation should not exceed 75%.

Which of the above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Ans : a)

UPSC Mains Practice Question

Ques: Discuss the difference between formal equality and substantive equality in the context of reservation policies in India. (150 Words)



India's recent maritime reforms need course correction

The passage of the Indian Ports Bill, 2025 in the Rajya Sabha, on August 18, marks a pivotal moment in India's maritime legislative history. Intended to repeal and replace the Act of 1908, it comes alongside the newly enacted Coastal Shipping Act, 2025, the Carriage of Goods by Sea Bill, 2025, and the Merchant Shipping Act, 2025, a legislative package that the government hails as critical to streamlining maritime governance and bringing India's shipping regulation in line with global practices.

Progress but with pitfalls

At first glance, these new laws represent a comprehensive attempt to modernise India's maritime governance. India's maritime regulation is fragmented and outdated, with modern shipping finance, offshore operations and international conventions long having outpaced the legal and operational frameworks in place. For India to expand its trade, attract foreign investment and enhance its maritime standing, aligning with global best practices is indeed necessary. In particular, the Indian Ports Act has been hailed as a facilitative law – one that enables ease of business, promotes sustainable port development, and brings coherence to India's otherwise disjointed regulatory environment. Even so, the Bill's passage without a serious parliamentary debate or referral to a standing committee raises questions, underlining the absence of political consensus and public scrutiny.

Notably, the Ports Act, 2025, has been criticised for centralising power at the expense of the States, diluting safeguards meant to protect Indian sovereignty. Critics point to its main feature, the Maritime State Development Council (chaired by the Union Minister of Ports) as a centralised policy-making authority with the power to direct States to follow central guidelines. Far from an illustration of cooperative federalism, they contend, the new Ports Act is an example of federal subordination, designed to ensure that States align their port development with central plans, such as Sagarmala and PM Gati Shakti regardless of their own priorities. Critics point to the Maritime State Development



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India should modernise its maritime legislation, but reform should not be at the expense of federal balance and fair competition

Council's structure and intent, where State maritime boards cannot adjust their own frameworks without central approval, as stripping coastal States of fiscal autonomy and flexibility, even while burdened with tight port management responsibilities.

The criticism is not confined to federal concerns. Experts warn that the new law introduces vague, discretionary regulatory powers that could saddle smaller operators with unmanageable compliance burdens. Equally troubling is the approach to dispute resolution: Clause 17 of the Bill bars civil courts from hearing port-related disputes, forcing parties into internal dispute resolution committees created by the very authorities they are contesting. Analysts caution that the absence of impartial, independent judicial review could deter private investment and erode trust in the regulatory system.

The issue about ownership

The Merchant Shipping Act, 2025, is not free from flaws either. It seeks to modernise registration, ownership rules, safety standards, environmental obligations, and liability frameworks, with some admittedly notable pluses: expanding vessel definitions to cover offshore drilling units and non-displacement crafts; tightening oversight of maritime training institutes; and aligning India's liability and insurance rules with international conventions. Yet tucked into the fine print is a loophole in ownership safeguards. Under the Merchant Shipping Act, 1958, Indian-flagged vessels had to be fully Indian-owned. The new Act permits "partly" Indian ownership including by Overseas Citizens of India and foreign entities while leaving the actual thresholds to be decided later by government notification.

The law also formally recognises Bareboat Charter-Cum-Demise (BBCD) registration, intended to let Indian operators lease foreign vessels with a view to eventual ownership. While legitimate as a global financing tool, the BBCD could test India's regulatory capacity to ensure that transfers actually occur. Without clear, enforceable rules, foreign lessors may retain effective control indefinitely. Further, the Act

mandates registration of all vessels, regardless of size or propulsion, without regard to the bureaucratic burdens that this places on small operators. What is most troubling is that it hands the executive a blank cheque to dilute ownership requirements whenever convenient, raising the risk of India sliding into a flag-of-convenience jurisdiction where foreign owners control ships flying the Indian flag.

Endangering smaller players

The final component of India's maritime reform package, the Coastal Shipping Act, ostensibly aims to clarify and strengthen cabotage rules, ensuring that only Indian-flagged vessels engage in domestic coastal trade. Though well-intentioned, it gives the Director General of Shipping sweeping discretion to licence foreign vessels on vague grounds such as "national security" or "alignment with strategic plans" – open-ended clauses that invite arbitrary or selective application. The real burdens are likely to fall on small operators, particularly in the fishing industry, who will struggle to comply with mandatory voyage and cargo reporting requirements in the absence of clear guidance on how such data will be used or protected. Members of Parliament from the Opposition have warned that the Act hands too much control to the Centre, potentially undermining local autonomy – a concern that applies equally to the centrally mandated National Coastal and Inland Shipping Strategic Plan.

None of this is to deny the need for an updated legal framework. India certainly must modernise its maritime legislation. But reform should not come at the expense of federal balance and fair competition. Ownership thresholds and licensing rules ought to be clearly specified in law, not left to executive discretion. As it stands, too many of the provisions are arbitrary – from dispute resolution that lacks judicial independence to excluding States from any meaningful role in planning. These measures may be a beginning, but without significant amendments, they risk delivering ease of doing business for the few while eroding the federal compact and weakening India's long-term maritime security.

Quality education

GS. Paper 03-Indian Economy

UPSC Mains Practice Question: India's recent maritime legislative reforms aim at modernisation but risk undermining federal balance and long-term security. Critically examine the provisions of the Indian Ports Act, 2025, Merchant Shipping Act, 2025, and Coastal Shipping Act, 2025 in this context.

Context :

India has recently enacted a package of maritime legislations — Indian Ports Act, 2025, Merchant Shipping Act, 2025, Carriage of Goods by Sea Bill, 2025, and Coastal Shipping Act, 2025 — replacing colonial-era laws. These reforms aim to modernise maritime governance, align domestic laws with global practices, and strengthen India's shipping ecosystem. While progressive in intent, concerns have been raised over federal imbalance, executive overreach, and risks to smaller operators.

Key Concerns

1. **Erosion of Federal Balance**
 - The **Maritime State Development Council**, chaired by the Union Minister, centralises power and compels States to align with Union schemes like Sagarmala and PM Gati Shakti.
 - This undermines **cooperative federalism**, reducing States' fiscal and regulatory autonomy in port management.
2. **Weak Dispute Resolution**
 - Clause 17 of the Ports Act bars civil courts from port-related disputes, diverting them to internal committees under the same authorities — raising questions about **judicial independence** and deterring private investment.
3. **Ownership Loopholes in Merchant Shipping Act**
 - Earlier requirement of fully Indian-owned vessels diluted; Act now permits "partly" Indian ownership by **OCI cardholders and foreign entities**, with thresholds left to executive discretion.
 - **Bareboat Charter-Cum-Demise (BBCD)** provisions risk foreign entities retaining control indefinitely, potentially converting India into a **flag-of-convenience regime**.
4. **Strain on Smaller Operators**
 - Coastal Shipping Act grants sweeping discretionary powers to license foreign vessels on vague grounds like "national security."
 - Fishing and small operators face heavy compliance burdens (voyage/cargo reporting) without clarity on data use or safeguards.

Broader Implications

- **Ease of doing business vs. equity:** Reforms may benefit larger players but impose disproportionate costs on smaller operators.
- **Strategic vulnerability:** Dilution of ownership rules may reduce India's control over its merchant fleet, undermining long-term maritime security.
- **Federal tension:** Centralisation risks alienating coastal States and weakening trust in Centre-State relations.

Way Forward

Daily News Analysis

- **Legislative Clarity:** Specify ownership thresholds, cabotage exemptions, and licensing criteria in the Acts rather than leaving them to executive discretion.
- **Judicial Independence:** Ensure availability of impartial dispute resolution mechanisms.
- **Strengthen Cooperative Federalism:** Give States a meaningful role in maritime boards and strategic planning.
- **Safeguard Small Operators:** Tailor compliance mechanisms to the capacity of fishing communities and small shipping businesses.
- **Balance Reform with Security:** Preserve strategic sovereignty by tightening safeguards against flag-of-convenience practices.

Conclusion

India urgently needed maritime reforms, but in their current form, the 2025 Acts risk undermining **federalism, fair competition, and maritime sovereignty**. Course correction through legislative amendments, stronger institutional checks, and a balanced Centre–State partnership is essential to ensure that maritime modernisation strengthens India's economic and strategic interests without sidelining smaller stakeholders.

