

Mains Master

Are States justified in opposing revenue-sharing model?

Context:

• **Financial Strain on States:** Indian states are struggling with rising costs for social welfare programs and slow growth in their own tax revenue. This makes them heavily reliant on the central government's divisible pool of union taxes, grants, and loans.

• **Importance of Fair Revenue Sharing:** An equitable distribution of this central pool is crucial for states to meet their financial obligations and invest in development projects.

Background:

• **Role of Finance Commission:** The Indian Constitution established the Finance Commission to recommend principles for distributing central tax revenues among states.

• **Evolution of Devolution Formula:** Over time, the Commission has refined the formula, considering various factors like:

◦ **Income Distance:** To address disparities between states with high and low per capita incomes.

◦ **Population:** To reflect the varying needs of states with different population sizes.

◦ **Area:** To account for the geographical challenges faced by larger states.

◦ **Demographic Performance:** To incentivize states that control population growth.

◦ **Fiscal Discipline:** To reward states for managing their finances

The revenue-sharing debate

How weights changed in the devolution formula

Component	11 th FC (2000-05)	12 th FC (2005-10)	13 th FC (2010-15)	14 th FC (2015-20)	15 th FC (2021-25)
Population (1971)	10.0	25.0	25.0	17.5	-
Population (2011)	-	-	-	10.0	15.0
Area	7.5	10.0	10.0	15.0	15.0
Forest and ecology	-	-	-	7.5	10.0
Index of infrastructure	7.5	-	-	-	-
Income distance	62.5	50.0	-	50	45.0
Tax and fiscal efforts	5.0	7.5	-	-	2.5
Fiscal capacity distance	-	-	47.5	-	-
Fiscal discipline	7.5	7.5	17.5	-	-
Demographic performance	-	-	-	-	12.5

*FC: Finance Commissions

• **Southern states in India have raised strong objections to the current formula used for distributing central tax revenue among states, claiming it unfairly favors larger states with higher populations and landmass. Here's a breakdown of their specific concerns:**

1. Increasing Weight to Population and Area:

• **The Problem:** The Finance Commission has been gradually increasing the weightage given to population and area in the devolution formula. This means states with larger populations and landmass, like Uttar Pradesh and Bihar, receive a larger share of the central pool, regardless of their economic performance or fiscal discipline.

• **Impact on Southern States:** Smaller, high-performing southern states like Kerala and Tamil Nadu, despite consistent economic growth and efficient resource management, receive a smaller share due to their lower population and limited landmass. This creates a sense of disadvantage and undermines their efforts to invest in development and social welfare programs.

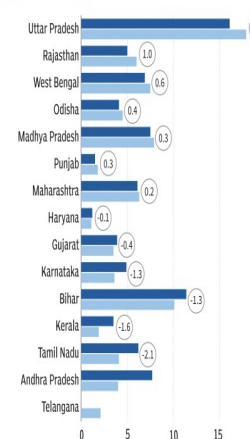
2. Declining Weight to Fiscal Performance:

• **The Problem:** The weightage given to fiscal discipline in the formula has been decreasing in recent years. This means states that manage their finances responsibly and improve their tax collection efficiency are not adequately rewarded.

• **Impact on Incentives:** This decline in weightage reduces the incentive for states to improve their fiscal health, potentially leading to irresponsible spending and inefficient resource allocation. This can have long-term negative consequences for the overall financial stability of the country.

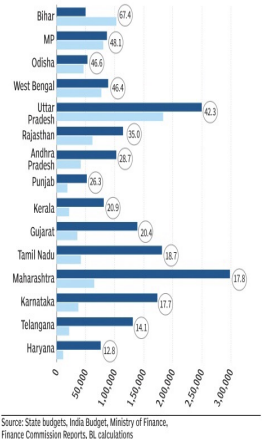
Tamil Nadu and Kerala have seen the steepest decline in share in divisible pool

% share of states in the divisible pool
 ■ Tenth FC ■ Fifteenth FC
 ○ Change in percentage points



Distribution from divisible pool is more significant for some States

For 2023-24 (BE) (in ₹ cr)
 ■ % of centre's devolution in total tax revenue
 ■ Own tax revenue ■ Share of union taxes



Source: State budgets, India Budget, Ministry of Finance, Finance Commission Reports, BI calculations

3. Shrinking Share:

• **The Problem:** Data shows that the combined share of southern states in the divisible pool has declined compared to previous Finance Commissions, despite their consistent economic performance. This suggests that the current formula is not effectively recognizing the contributions and needs of these states.

• **Impact on Development:** A shrinking share translates to fewer resources available for crucial development projects, infrastructure investments, and social welfare programs in southern states. This can hinder their economic growth and exacerbate existing disparities across the country.

Additional Considerations:

• **Equity vs. Needs:** The debate surrounding revenue sharing often revolves around finding a balance between two competing principles: equity (distributing resources fairly based on population and landmass) and needs (allocating resources based on specific development requirements and fiscal constraints).

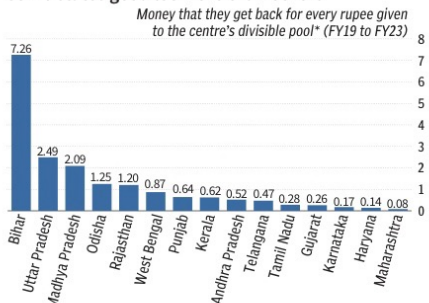
• **Alternative Weightages:** Southern states have proposed adjustments to the weightage system, such as increasing the weightage for demographic performance (rewarding states with controlled population growth) and reducing the weightage for income distance (potentially benefiting states with higher per capita incomes).



Data Supporting the Concerns:

- **Disproportionate Share:** Bihar receives the highest share of central taxes (67.4% of its own tax revenue), followed by Uttar Pradesh (42%). In contrast, southern states receive less than 30% of their tax revenue from the Centre.
- **Unequal Returns:** For every rupee contributed to the central pool, some states receive significantly more back than others. For example, Bihar gets ₹7.26 for every rupee contributed, while Tamil Nadu only receives ₹0.28.

For every rupee that goes into the pool, some states get a lot more than others



*The amount that each state receive may be lower, since excise duties and custom duties aren't taken into account while calculating

- **Fairness Debate:**
 - **Supporting Population Weightage:** Some economists argue that the population weightage is justified, as states with larger populations have higher needs for basic necessities like healthcare and education.
 - **Proposed Adjustments:** Others suggest modifying the weightage system to achieve greater fairness:
 - **Increase Demographic Performance Weightage:** Raising this weightage to 15-20% could reward states that effectively control population growth.
 - **Reduce Income Distance Weightage:** Lowering this weightage could benefit southern states with higher per capita incomes.

Path Ahead:

- **Sixteenth Finance Commission:** The next Finance Commission will be responsible for reviewing the devolution formula and addressing the concerns raised by southern states.
- **Balancing Needs and Equity:** Finding a balance between the needs of different states, their performance, and ensuring an equitable distribution of resources will be crucial for the Commission's recommendations.

Is Russia testing a new anti-satellite weapon?

Context:

- Tensions between Russia and the West are high due to the Ukraine war.
- US raises concerns about a potential new Russian weapon.

Recent Event:

- US claims Russia is developing a space-based anti-satellite (ASAT) weapon, potentially violating the Outer Space Treaty.
- The weapon could be nuclear-powered or carry a nuclear warhead.
- Russia denies the claims and calls them "malicious fabrication."

What is ASAT?

- **Anti-satellite weapons (ASATs):** Designed to disable or destroy operational satellites in orbit.
- **Types of ASATs:**
 - **Kinetic ASATs:** Use high-speed projectiles or explosives to physically destroy satellites, creating debris. (Violates Outer Space Treaty's Article IX on "harmful contamination.")
 - **Nuclear ASATs:** Detonate a nuclear warhead in space, generating an electromagnetic pulse (EMP) that disrupts electronics on satellites over a wide area. (Violates Outer Space Treaty's Article IV on placing weapons of mass destruction in space.)
 - **Impact on Satellites:**
 - Can cripple critical infrastructure like communication, navigation, and financial systems.
 - EMP from nuclear ASATs can damage satellites even at vast distances.
 - Destroyed satellites and debris create a "Kessler Syndrome" risk, potentially rendering space unusable due to cascading collisions.

Implications:

- **Escalation of Space Militarization:** An ASAT arms race could further militarize space, increasing the risk of accidental or intentional conflict.
- **Disruption of Peaceful Uses of Space:** Threat of ASATs could deter international cooperation and hinder scientific exploration and utilization of space resources.
- **Environmental and Economic Damage:** Debris from destroyed satellites can pose long-term risks to other spacecraft and potentially disrupt vital economic activities reliant on space technologies.

Preventing ASATs:

- **Strengthening the Outer Space Treaty:** Clarifying and strengthening provisions related to ASATs through international negotiations and potential amendments.
- **Building Trust and Transparency:** Promoting open communication and information sharing between nations regarding space activities to reduce misunderstandings and misinterpretations.
- **Cooperation on Space Security:** Establishing international frameworks for responsible behavior and conflict prevention in space, including potential bans on specific types of ASATs.
- **Developing Mitigation Technologies:** Researching and developing technologies to protect satellites from EMP effects and track and remove debris from space.

Shortcomings:

- **Enforcement Challenges:** Enforcing existing space treaties like the Outer Space Treaty is inherently difficult due to the complexities of space activities and lack of dedicated enforcement mechanisms.
- **National Interests:** Balancing national security concerns with promoting peaceful uses of space and ensuring equitable access for all nations remains a significant challenge.
- **Technical Hurdles:** Developing effective mitigation technologies against ASATs, particularly nuclear ones, presents significant technical and financial challenges.

Way Forward:

- **Renewed Commitment to Peaceful Space:** Reemphasize the importance of peaceful uses of space and promote international cooperation in space exploration and utilization.
- **Urgent Dialogue and Diplomacy:** Initiate high-level dialogues between major spacefaring nations to address ASAT concerns, build trust, and establish clear norms and regulations.
- **Investing in Space Security:** Allocate resources towards developing effective and responsible space security measures, including mitigation technologies and international legal frameworks.

Laksh adweep's maritime potential

Context:

- Social media controversy sparked interest in Lakshadweep, a beautiful Indian archipelago.
- Government plans to develop its tourism and port infrastructure.

Strategic Location:

- Lakshadweep lies near international shipping routes, offering potential as a logistics hub.
- Ten of its 36 islands are inhabited, with historical links to Mangaluru in coastal Karnataka.

Development Potential:

- Government proposes port connectivity, tourism infrastructure, and amenities across the islands.
- This aligns with India's focus on strengthening its role in the Indian Ocean region.

Key Arguments:

- Proponents:
 - Development can boost tourism and logistics, benefiting both Lakshadweep and Mangaluru.
 - Improved infrastructure can attract cargo traffic currently diverted to other Kerala ports.
 - Cruise ships could embark from Mangaluru, promoting regional tourism.
- Concerns:
 - Ecologically sensitive islands require balanced development to avoid environmental damage.
 - Large infrastructure projects might disrupt the unique culture and way of life.

Way Forward:

- Eco-sensitive development that prioritizes sustainability and local communities.
- Cruise ships anchoring offshore, allowing island tours without permanent structures.
- Improved connectivity to Mangaluru and other parts of India for better accessibility.

Overall:

Lakshadweep holds significant potential for tourism and logistics, but development must be mindful of its ecological and cultural fragility. A collaborative approach involving stakeholders and prioritizing sustainability can pave the way for a win-win scenario.

What are IPCC's assessment reports?

What is the IPCC?

- The Intergovernmental Panel on Climate Change (IPCC) is a UN body that assesses the science related to climate change.
- Established in 1988, it provides governments with regular scientific assessments on climate change, its impacts, and potential future risks.

History of Assessment Reports:

- The IPCC has published six assessment reports (ARs) since its inception, covering the latest scientific findings on climate change.
- The most recent AR6 cycle (2021-2022) warned of urgency in limiting global warming to 1.5°C and highlighted adaptation strategies.

Key Metrics:

- IPCC reports assess:
 - The science of climate change
 - Its impacts and future risks
 - Adaptation options and mitigation strategies
- They do not prescribe policy, but provide scientific basis for informed decision-making.

Contribution to Climate Change Policy:

- IPCC reports play a crucial role in shaping international climate change agreements like the Paris Agreement.
- They inform national and regional climate policies worldwide.
- By providing scientific consensus, they help build global awareness and commitment to climate action.

Current Status:

- The IPCC is currently in its seventh assessment cycle (AR7), with reports expected in 2027 (special and methodology) and beyond (full assessments).

- Debates regarding the timeline for AR7 reports are ongoing, balancing scientific rigor with timeliness for informing the 2028 global stocktake.

Overall:

The IPCC plays a vital role in advancing scientific understanding and informing climate change policy. Its assessment reports are essential tools for navigating the global challenge of climate change.

Prelims Booster

Jnanpith for Gulzar, Sanskrit scholar Rambhadracharya

- 🏆 Celebrated Urdu poet and Bollywood writer and director Gulzar and Sanskrit scholar Jagadguru Rambhadracharya have been selected for the Jnanpith award, considered the country's highest literary honour.
- 📖 Gulzar, known as one of the finest Urdu poets, has received numerous accolades, including the Sahitya Akademi Award for Urdu, Dadasaheb Phalke Award, Padma Bhushan, and multiple National Film awards for his work in Hindi cinema.
- 🎬 He has directed classics such as Koshish, Parichay, Mausam, Ijaazat, and the television serial Mirza Ghalib, and is known for his work in films like Maachhis, Omkara, Dil Se, Guru, and Aandhi.
- 🎵 His song "Jai Ho" for the film Slumdog Millionaire received an Oscar in 2009 and a Grammy in 2010. He has also made significant contributions to children's poetry and literature.
- 📖 Jagadguru Rambhadracharya, a renowned Hindu spiritual leader, educator, and writer of over 240 books and texts, including four epics, is a polyglot who speaks 22 languages and has been holding the position of Jagadguru Ramanandacharyas of the Ramananda sect since 1982.
- 🌟 The Jnanpith award, presented by the Bharatiya Jnanpith, carries a cash component of ₹11 lakh, a statue of Vagdevi, and a citation. This is the 58th edition of the award, given annually for outstanding contributions to Indian literature since 1965.

T cells hold hope against refractory multiple myeloma

- 🩸 Scientists have developed a new variant of cancer-fighting T cells that can effectively suppress multiple myeloma tumors in mice, demonstrating superior persistence and endurance compared to standard CAR T cell designs.
- 🌱 The promising effects and durability of these new cells offer hope for providing much-needed treatment options to patients with refractory or relapsed multiple myeloma, which is the second most common type of blood cancer in adults.
- 🔍 T-cells, also known as T lymphocytes, are a crucial part of the adaptive immune system, playing a vital role in fighting off infections and diseases. They are a type of white blood cell that matures in the thymus gland, hence the name "T-cell."
- ⚙️ Key Functions:
 - Recognizing and destroying infected cells: T-cells have specialized receptors that recognize specific antigens on infected or cancer cells, leading to their activation and the release of chemicals that destroy the infected cell.
 - Regulating the immune response: Different types of T-cells play various roles in regulating the immune response, including activation of other immune cells and suppression of the immune response to prevent attacks on healthy tissues.
 - Providing long-term immunity: Some T-cells become memory T-cells after encountering an antigen, enabling them to quickly recognize and respond to the same antigen in the future, providing long-term immunity.
- 🌟 Main Types of T-cells:
 - Cytotoxic T-cells (Tc cells): Directly kill infected or cancer cells.
 - Helper T-cells (Th cells): Assist in activating other immune cells, such as B cells that produce antibodies.
 - Regulatory T-cells (Treg cells): Suppress the immune response to prevent attacks on healthy tissues.
 - Memory T-cells: Remember past infections and can quickly respond to the same antigen upon re-encounter.
- 🌱 T-cells are essential for protecting the body from a wide range of infections and diseases and are also involved in autoimmune diseases, such as rheumatoid arthritis and multiple sclerosis, when the immune system mistakenly attacks healthy tissues.