

INDIA'S ECONOMIC CHALLENGES AMID WEST ASIA CRISIS

Finance Minister Nirmala Sitharaman pushed back against critics of the Indian economy at a SIDBI event in Mumbai, saying that naysayers were creating a "cynical narrative" about India's economic situation.

- The Finance Minister outlined India's key external vulnerabilities through the framework of "three Fs":
 - **Fuel** — High and volatile international crude oil prices are inflating India's import bill and creating inflationary pressure domestically.
 - **Fertiliser** — An "unimaginable" increase in global fertiliser prices is adding to input costs across agriculture — with direct implications for food inflation and farm incomes.
 - **Foreign Exchange** — The FM clarified that PM Modi's appeal to conserve foreign exchange was specifically in the context of reducing gold purchases — not a general alarm about the economy's health.
- Earlier, PM Modi urged the public to change consumption behaviour by reviving Covid-era measures such as work-from-home and virtual meetings, avoiding non-essential foreign travel and gold purchases for a year, and prioritising local goods.

The Rupee Under Siege — Key Data

- The Indian rupee has been under severe and sustained pressure since the West Asia war began.
- Key indicators of the stress include:
 - Rupee has slumped nearly 5% since February 27 and nearly breached the 97-per-dollar mark.
 - Foreign Portfolio Investors (FPIs) have dumped Indian bonds and stocks worth \$24.4 billion since the war began in late February.
 - Net FDI inflows remain weak — further reducing the supply of dollars entering India.

- Forex reserves are down approximately \$40 billion compared to pre-war levels, as of May 15.
- RBI's gross forex sales of \$29.6 billion in March — the highest in 13 months — reflect the scale of intervention needed to defend the rupee.
- **Government Measures to Stem the Rupee's Fall**
 - **Sharp hike in import duty** on gold, silver, and platinum — from 6% to 15% — to discourage non-essential precious metal imports.
 - **Restrictions on duty-free gold imports** under a key export scheme to prevent misuse.
 - **Four petrol and diesel price hikes** at retail pumps within two weeks — to reduce the government's subsidy burden and align domestic prices with elevated global oil prices.
 - Silver imports for domestic consumption placed under the **restricted category** requiring prior government approval.

Growing Economic Concerns — What Experts Are Warning?

- Despite the FM's reassurances, economists and financial experts have been raising serious concerns about India's near-term economic trajectory.
- **Balance of Payments Risk** - With the rupee repeatedly hitting all-time lows and forex reserves depleting, economists have warned that India faces a BoP deficit for the third straight year in 2026-27 — a sustained and serious external sector vulnerability.
- **Growth Slowdown** - The RBI's April forecast pegs India's GDP growth in 2026-27 at 6.9%. However, economists have been warning that actual growth could be closer to 6-6.5% — reflecting the drag from high energy prices, weak consumption, and financial market volatility.
- **Inflation Upside Risk** - With elevated global crude oil prices and a rapidly weakening rupee both feeding into domestic inflation, experts have flagged significant upside risks to inflation in coming months. A weaker rupee makes all imports more expensive — directly feeding into both fuel and food inflation.

RUPEE DEPRECIATION AND INDIA'S EXTERNAL SECTOR CHALLENGES

- Indian rupee witnessed a sharp depreciation against the U.S. dollar, with the exchange rate **crossing ₹96** per dollar in May 2026 compared to around ₹85 a year earlier.
- The decline has revived debates over the strength of India's economy, the sustainability of external balances, and the appropriate role of the Reserve Bank of India (RBI) in managing exchange rate volatility.

Understanding Exchange Rate Dynamics:

- **Exchange rate:** It refers to the value of one currency relative to another. In a market-driven system, the rupee's value depends on the demand and supply of rupees vis-à-vis foreign currencies, especially the U.S. dollar.
- **Factors increasing demand for Rupee:**
 - **Exports of goods and services:** Foreign buyers exchange dollars for rupees to pay Indian exporters.
 - **Remittances:** From Indians working abroad.
 - **Foreign investments:** Into Indian markets and businesses.
- **Factors reducing demand for Rupee: Imports,** especially crude oil. Foreign travel and education expenses. Capital outflows, where investors convert rupees into dollars and move funds abroad.

Economic Impact of Rupee Depreciation:

- **Negative effects:**
 - **Costlier imports:** As India imports most of its crude oil, a weaker rupee increases fuel prices, inflationary pressures, and input costs for industries.
 - **Example:** A \$100 barrel of oil costs: ₹8,500 at ₹85/\$, ₹9,600 at ₹96/\$.
 - **Imported inflation:** Higher import costs raise prices of fertilisers, electronics, industrial machinery, and edible oils.
 - **Investment concerns:** Depreciation reduces returns for foreign investors in dollar terms, discouraging future capital inflows.

- **Can a weak rupee boost exports?**
 - Economic theory suggests depreciation improves **export competitiveness** because Indian goods become cheaper abroad.

RBI's Role in Managing the Rupee:

- The RBI intervenes in forex markets to prevent excessive volatility, not to defend any fixed exchange rate.
- **Mechanism of intervention:** When the rupee falls sharply RBI sells dollars from forex reserves, purchases rupees, raises rupee demand, and moderates depreciation.
- **Forex reserves as strategic buffer:**
 - India's forex reserves stood at about \$691 billion in March 2026, providing around 10.8 months of import cover.
 - These reserves ensure payment for essential imports, provide confidence to markets, and help resist speculative attacks.
- **Limits of RBI intervention:**
 - **Finite forex reserves:** Continuous intervention can deplete reserves below safe import-cover levels.
 - **Nature of India's forex:** Unlike China's export-driven reserves, much of India's forex comes from volatile capital inflows rather than trade surpluses.
 - **Delayed adjustment risk:** Artificially stabilising the rupee for long periods may postpone necessary corrections, leading to sharper future depreciation.

Debate: Defend the Rupee or Let It Adjust?

- **Arguments for allowing depreciation:** Conserves forex reserves, improves export competitiveness, discourages excessive imports, and allows market-based adjustment.
- **Arguments for RBI defence:** Prevents panic and speculation, ensures orderly currency movement, protects financial stability, and reduces inflationary shocks.
- **Risks of free fall:** Unchecked depreciation may trigger further speculation, encourage importers to hoard dollars, reduce foreign investment confidence, create a vicious cycle of depreciation, etc.

FERROCENE PUZZLE SOLVED - INDIAN RESEARCHERS CREATE A CARBON-



FREE MOLECULE

- Researchers from IIT Madras and IISc Bengaluru have synthesised a stable **carbon-free molecule resembling ferrocene**, solving a long-standing chemistry puzzle spanning over seven decades.

Understanding Ferrocene and Its Importance

- The recent scientific breakthrough has renewed interest in **ferrocene**, a unique molecule that transformed modern chemistry after its discovery in the **1950s**.
- Ferrocene belongs to a class of compounds called **organometallic compounds**, which contain bonds between a metal and carbon-containing molecules.
- It has a distinctive structure where an **iron atom is positioned between two flat carbon-ring molecules**, resembling a “sandwich”.
- This unusual arrangement made ferrocene one of the most important discoveries in chemistry because it challenged conventional theories of chemical bonding and expanded understanding of molecular structures.
- The molecule contains:
 - An **iron atom (Fe)** at the centre.
 - Two **cyclopentadienyl carbon rings** surround the metal atom.
 - Strong and stable bonding that gives it exceptional chemical stability.
- Its structure is often referred to as a “**sandwich complex**” because the metal atom is placed between two ring-shaped molecules.

The Long-Standing Chemistry Puzzle

- For decades, scientists across the world tried to create a molecule similar to ferrocene without using carbon rings.
- The challenge existed because carbon possesses exceptional bonding properties. It can easily form **stable, large, and complex molecular structures**, making it central to chemistry.

- In fact, an entire branch called **organic chemistry** focuses on carbon compounds.
- Researchers attempted various combinations of metals and non-carbon elements. However, creating a **stable carbon-free sandwich structure** proved extremely difficult.
- The key scientific question was “**could the famous ferrocene structure exist without carbon?**”
- Until now, the answer remained uncertain.

The Indian Breakthrough in Chemistry

- Researchers at IIT Madras, led by **Sundargopal Ghosh and Stutee Mohapatra**, in collaboration with **Prof. Eluvathingal Jemmis** from IISc Bengaluru, have successfully solved this scientific challenge.
- The researchers developed a completely **carbon-free molecule** that closely resembles ferrocene in both structure and stability.
- Instead of iron and carbon rings, the new molecule contains:
 - **Osmium metal** at the centre instead of iron.
 - **Boron-based rings** instead of carbon rings.
- Like ferrocene, the new molecule forms a sandwich-like arrangement, where osmium remains positioned between two ring structures.

Significance of This Discovery

- Although the research is currently viewed as a **fundamental scientific breakthrough**, it carries important long-term implications.
- Such materials may eventually find applications in:
 - Electronics and semiconductors
 - Energy storage systems
 - Catalysis and industrial chemistry
 - Advanced materials science

Conclusion

- While practical applications may take time to emerge, the breakthrough has expanded the boundaries of chemical science and opened new avenues for material innovation.

PM-AJAY SCHEME



- PM AJAY (Pradhan Mantri Anusuchit Jaati Abhyuday Yojana) scheme is a comprehensive initiative **launched in FY 2021-22**. It is aimed at the **socio-economic upliftment of Scheduled Castes (SCs)**.
- It is a merger scheme of three erstwhile Centrally Sponsored Schemes, namely, **Pradhan Mantri Adarsh Gram Yojana (PMAGY), Special Central Assistance to Scheduled Castes Sub Plan (SCA to SCSP) and Babu Jagjivan Ram Chhatrawas Yojana (BJRCY)**.
- It focuses on **reducing poverty**, enhancing educational opportunities, and improving infrastructure in SC-dominated areas.
- **Nodal Ministry:** Implemented by the Ministry of Social Justice & Empowerment.
- **Eligibility Criteria for the Scheme**
 - The Scheduled Castes **persons living below the poverty lines** are eligible for getting benefits under the various Income Generating Schemes and Skill Development Programmes.
- **Key Components of the Scheme**
 - **Adarsh Gram Development:** Transforming SC-majority villages into ‘Adarsh Grams’ (model villages) by filling critical gaps in infrastructure and services.
 - **Grants-in-Aid for Socio-Economic Projects:** Providing financial assistance for district/state-level projects aimed at the socio-economic betterment of SCs.
 - Creation of infrastructure in SC-dominated villages
 - Construction of hostels/residential schools
 - Comprehensive livelihood projects, including skill development and related infrastructure.
 - Financial assistance towards loans taken by beneficiaries for asset acquisition/creation required for livelihood generation.

- **Construction of Hostels:** It includes building hostels in **higher educational institutions** ranked under the National Institutional Ranking Framework (NIRF) and **funded by the Centre/State/UT Governments**, schools funded by the Centre/State/UT Governments and recommended by the Ministry of Education.

KERALA'S AGEING POPULATION CRISIS

- Kerala is going through a critical phase of demographic transition with a demographic profile resembling East Asian and European countries far more than the rest of India.
- The **Old Age Dependency Ratio** — the number of aged persons per 100 working-age persons — has risen sharply from 19.6% (2011) to **26.1% (2021)** and is projected to reach **34.3% by 2031**.

Why is Kerala Ageing So Rapidly? — Three Key Reasons

- **Sharply Falling Fertility Rate** - Kerala's TFR has fallen to just **1.35** — significantly below the national replacement level of 2.1 and even below **India's national TFR of 1.9**. Fewer births mean fewer young people entering the population — accelerating the share of the elderly.
- **Rising Life Expectancy** - Better healthcare infrastructure has increased life expectancy significantly — 78.4 years for women and 71.9 years for men — meaning people are living longer, swelling the elderly population.
- **Large-Scale Out-Migration of Working-Age Population** - A significant portion of Kerala's working-age population has migrated abroad — particularly to West Asian countries and beyond.
 - Those who migrate to non-West Asian countries often settle there permanently, leaving aged parents behind — creating households with only elderly members.
 - Simultaneously, return migrants from West Asia who come back after their working years add to the state's elderly population — creating a double burden.

What Kerala Has Already Done — Existing Initiatives

- **State Elderly Commission (2025):**
A first-of-its-kind quasi-judicial forum for protecting the rights and welfare of senior citizens.
- **Vayomithram:**
A mobile medical care programme providing healthcare at the doorstep of elderly citizens.
- **Samayaprabha:**
A daycare initiative for senior citizens.
- **Kerala Care Palliative Grid:**
Formed in collaboration with Digital University Kerala to coordinate palliative care. Includes 1,387 government institutions and 1,227 NGOs — currently serving approximately 1.5 lakh bedridden and 4 lakh ailing individuals.
- **Welfare Pension Coverage:**
Around 75% of the aged population is covered under welfare pension schemes.

The Coming Challenge — An Ageing India

- India is transitioning from a country worried about population explosion to one that must plan for an ageing population and a shrinking workforce expansion.
- This transition — well-managed by countries like Japan, South Korea, and several European nations with varying degrees of success — requires proactive policy interventions in healthcare for the elderly, pension systems, labour market flexibility, and immigration policy.
- India must reassess the path ahead and pivot to prepare for the needs of a future greying nation — before the demographic dividend disappears.