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**DAILY NEWS ANALYSIS** 

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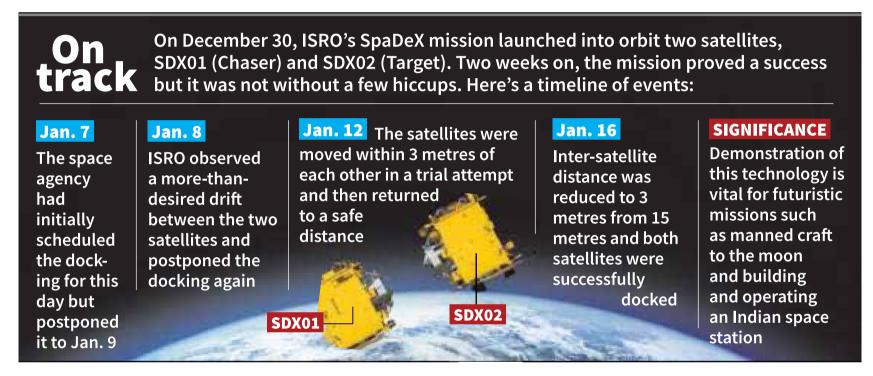
TECHNOLOGY

ECOLOGY

## ISRO executes satellite docking, places India in elite space club

**SCIENCE & TECHNOLOGY** 

**CONTEXT:** The Indian Space Research Organisation (ISRO) successfully executed a satellite docking experiment, "making India the fourth country" after the U.S., Russia and China to achieve this historic feat.



The two satellites — SDX01 (Chaser) and SDX02 (Target) — launched by the PSLV C60 on December 30 successfully docked as officials from the Mission Operations Complex (MOX) at the ISRO Telemetry, Tracking, and Command Network (ISTRAC) oversaw the complex procedure.

On December 30, 2024, ISRO launched its PSLV-C60 mission, with the primary payload being two satellites for the Space Docking Experiment (SpaDeX), aimed at demonstrating orbital rendezvous and docking. Although initially planned for January 7, the docking occurred on January 16 after several aborted attempts. The delay was due to satellite drift, which required corrective measures. After successful docking, ISRO tested power exchange, undocking, and payloads over the next two years. The mission also launched the fourth stage as an orbital platform, carrying 24 payloads, including a Compact Research module for Orbital Plant Studies, which successfully germinated cowpea seeds in orbit.

Docking technology enables components to be launched separately and assembled in space, supporting heavier interplanetary spacecraft beyond the capacity of current rockets. It opens opportunities for missions like Chandrayaan-4. ISRO equipped the SpaDeX satellites with enough fuel for multiple attempts and continuously collected data, though it hesitated to live-stream the success after initial setbacks. Docking has gained importance due to the need for long-duration spaceflight and cost pressures from missions like Mars exploration and space mining. ISRO plans to launch the 'Bharatiya Antariksh Station' (BAS) later this decade but needs to outline a clear vision for its role within India's broader space program and its positioning relative to other nations.

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The SpaDeX mission is an important project designed to develop and demonstrate the technology needed for spacecraft manoeuvres. The demonstration of this technology is essential for futuristic missions such as sending an Indian astronaut to the moon, sample return from the moon, and building and operating an Indian space station.

The other objectives of the mission include demonstration of the transfer of electric power between the docked spacecraft, which is essential for future applications such as in-space robotics, composite spacecraft control and payload operations after undocking. According to ISRO, after the docking and undocking events, the spacecraft will be separated and used for application missions.

## Hindenburg Research winds up operations citing 'intense' work

**INTERNATIONAL RELATIONS** 

**CONTEXT:** U.S.-based short seller Hindenburg Research will be disbanded, its founder Nathan Anderson has said, adding that the firm has completed the projects it was handling.

Hindenburg Research, in January 2023, made waves when it published a report accusing the Adani Group of "pulling the largest con in corporate history", wiping out more than \$150 billion in value of the group's shares at their lowest point. The Adani Group had vehemently denied all allegations, including that of being "engaged in a brazen stock manipulation and accounting fraud scheme over the course of decades" and improper use of offshore tax havens to shore up group share prices.

## Israel accuses Hamas of 'backtracking' on truce deal

### **INTERNATIONAL RELATIONS**

**CONTEXT:** Israel carried out new air strikes on Gaza, accused Hamas of backtracking on parts of a fragile ceasefire and hostage release deal ahead of an expected vote by its Cabinet.

A truce brokered by Qatar and the U.S. was announced to take effect on Sunday, involving the exchange of Israeli hostages for Palestinian prisoners, followed by finalizing terms for a permanent end to the war. However, Prime Minister Netanyahu's office claimed Hamas had reneged on parts of the agreement to gain last-minute concessions. The Israeli Cabinet, which has not yet approved the agreement, will not convene until Hamas accepts all elements of the deal.

#### 'No basis'

Hamas member Sami Abu Zuhri denied Israel's accusations, stating there was "no basis" for them. Meanwhile, in Gaza, Israel's airstrikes killed at least 75 people and injured hundreds, despite the announced ceasefire deal. Hamas's armed wing warned that ongoing Israeli attacks could jeopardize the freedom of hostages to be released under the agreement. The truce follows months of failed negotiations to end the war, and if finalized, it would pause hostilities just before U.S. President-elect Donald Trump's inauguration. Israeli Prime Minister Netanyahu spoke with Presidents Joe Biden and Trump, thanking them for their support but noting that final details were still being worked out. The conflict has claimed 46,788 lives in Gaza, mostly civilians.



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## Sriharikota to get third launch pad

### **SCIENCE & TECHNOLOGY**

**CONTEXT:** The Union Cabinet on Thursday approved the construction of a third launch pad at the Satish Dhawan Space Centre (SDSC) in Sriharikota.



The launch pad will have an outlay of ₹3,984.86 crore, and is targeted to be completed by early 2029. The launch pad comes as the Indian Space Research Organisation (ISRO) seeks to launch its Next Generation Launch Vehicles (NGLVs) starting in 2031. The new launch pad would also support Indian-manned spaceflight missions, with its chairman V. Narayanan envisaging a 2026 target for the first such mission.

The third launch pad is designed to have configuration that is as universal and adaptable as possible that can support not only NGLV but also the Launch Vehicle Mark 3 vehicles with semi-cryogenic stage as well as scaled up configurations of NGLV. The previous launch pad has been operational for almost two decades, and this new pad will boost ISRO's launch capabilities and capacities in Sriharikota.

The expeditious establishment of a third launch pad to cater to a heavier class of Next Generation Launch Vehicles and as a standby for SLP is highly essential so as to meet the evolving space transportation requirements for another 25-30 years.

## Singapore to help India's semiconductor industry

### **INTERNATIONAL RELATIONS**

**CONTEXT:** Singapore is exploring new initiatives such as manufacturing of semiconductors and building a semiconductor ecosystem in India and participating in the creation of a new generation of technological solutions, the city-state's President, Tharman Shanmugaratnam.

President Shanmugaratnam reflected on his 2022 visit to Assam and noted his current focus on Odisha. He emphasized India's early recognition of Singapore's independence in 1965 and described the strong, natural partnership between the two nations. President Shanmugaratnam highlighted that Singapore has been India's largest investor for many years, with thriving business relations across various sectors.

### **Data corridor**

The Singapore President, during his visit to India, highlighted initiatives like a potential data corridor between Gift City and Singapore for secure data exchange among financial institutions. He emphasized collaboration in renewable energy and India's developmental ambitions for eastern states like Odisha and Assam, citing their natural resources and potential in logistics, connectivity, and petrochemicals. The President also noted the upgraded Comprehensive Strategic Partnership with India, announced during Prime Minister Modi's 2023 visit to Singapore, and ongoing cooperation in advanced manufacturing and building a semiconductor ecosystem in India.

President Shanmugaratnam and President Droupadi Murmu launched a joint logo to mark the 60th anniversary of diplomatic relations between India and Singapore. His visit is part of a series of exchanges planned throughout the year to celebrate the milestone with various visits and events.

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## Indonesian President to be chief guest on Republic Day

### **INTERNATIONAL RELATIONS**

**CONTEXT:** Indonesian President Prabowo Subianto will be the chief guest at India's Republic Day Parade, accompanied by the largest foreign military contingent to march on Kartavya Path.



Indonesia is close to finalizing a \$450-million deal with India for the BrahMos supersonic cruise missile systems, making it the second export customer after the Philippines. An announcement is expected during an upcoming visit. Indonesia's Defence Ministry has formally requested details from the Indian Embassy in Jakarta, and the proposal is under review by India's Defence Ministry. Besides BrahMos, Indonesia has shown interest in other Indian military platforms, including Dhruv advanced light helicopters and Akash air defence systems. Mr. Prabowo, Indonesia's Defence Minister under President Joko Widodo, assumed the presidency in October 2024.

### Friendly relations

India and Indonesia, with millennia-old ties and a Comprehensive Strategic Partnership, are key partners in India's Act East Policy and Indo-Pacific vision. During President Prabowo's visit, he and Prime Minister Modi will oversee agreements in health, culture, education, maritime security, and traditional medicine to boost bilateral cooperation.

The visit of Indonesia's President Prabowo to India highlights growing strategic ties, particularly in economic, defense, and maritime sectors. He will be accompanied by a 352-member military contingent, the largest foreign group to march in the parade, including 152 troops and 189 cadets. During the visit, Prabowo will pay respects at Rajghat, receive a ceremonial welcome at Rashtrapati Bhavan, hold bilateral talks with Prime Minister Modi, attend the January 26 parade, and join the "At Home" tea hosted by President Droupadi Murmu.

### The impacts of rupee weakening

**ECONOMICS & DEVELOPMENT** 

**CONTEXT:** The Indian rupee recently registered a sharp devaluation with respect to the dollar after remaining stable for over two years or so.

### **Exchange rate regimes**

The nominal exchange rate is the price of foreign currency in terms of domestic currency, influenced by market demand-supply and central bank policies. The real exchange rate, on the other hand, reflects the relative cost of foreign goods compared to domestic goods, indicating how expensive or affordable domestic goods are in relation to foreign goods.

The demand and supply of foreign currency depend on current account and capital account flows. Demand rises with lower net exports or greater capital outflows, while supply increases with higher net flows. Exchange rate policy frameworks—fixed, floating, and managed-floating—determine how central banks respond to these conditions. In a fixed exchange rate, the central bank maintains a predetermined rate by selling or buying foreign reserves. In a floating exchange rate, it allows the currency's value to adjust, devaluing or appreciating based on demand, without altering reserves.

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## The falling rupee

The recent sharp devaluation of the Indian rupee, after a period of stability, raises important questions about the country's exchange rate policy and its broader economic implications

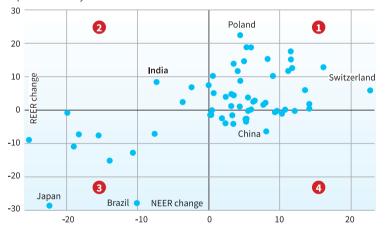
**Chart 1:** Chart shows the dollar exchange rate in India (in ₹)



**Chart 2:** Chart shows the index values for the nominal effective exchange rate (NEER) and the real effective exchange rate (REER)



**Chart 3:** Chart shows the countrywise difference in NEER and REER indices in November 2024 compared to January 2019



**Chart 4:** Chart shows the ratio of nominal sales value to that of nominal variable cost for nor financial corporate firms



Source: RBI, CMIE, BIS

India has primarily followed a managed-floating exchange rate regime over the last three decades, with the RBI employing an asymmetric approach in the 2010s. Under excess demand for foreign currency, the RBI devalued the rupee and sold foreign reserves. In contrast, under excess supply, it resisted nominal exchange rate appreciation while accumulating reserves to prevent a rise in the real exchange rate and preserve export competitiveness. As a result, while net capital outflows caused rupee depreciation, net inflows did not lead to proportional appreciation, contributing to an overall rupee devaluation during the decade.

The RBI temporarily adopted a fixed exchange rate-like policy between late 2022 and November 2024, maintaining a stable nominal exchange rate by selling foreign reserves despite a widening current account deficit and capital outflows. However, a sharp rupee devaluation in late 2024 suggests a return to the managed-float regime of the 2010s. Faced with increased capital outflows and rising imports due to higher crude oil prices, the RBI allowed the rupee to depreciate to reduce pressure on foreign exchange reserves.

### Implications of devaluation

Depreciation of the nominal exchange rate has both positive and adverse macroeconomic effects. On the positive side, it can boost net exports and output if two conditions are met: (i) net exports respond positively to the real exchange rate, and (ii) nominal depreciation leads to real depreciation. Real depreciation occurs when domestic goods become cheaper relative to foreign goods, enhancing competitiveness. Conversely, if domestic prices rise with a stable nominal exchange rate, the real exchange rate appreciates, making domestic goods costlier and reducing export competitiveness.

Depreciation of the nominal exchange rate can raise domestic prices by increasing firms' variable costs, particularly in oligopolistic markets where prices are set as a mark-up over costs. Higher costs of imported raw materials due to depreciation are passed on to consumers, driving up prices. Since the late 2010s, a key constraint in India's economy has been the diminishing positive impact of nominal exchange rate depreciation, as conditions for boosting net exports and output no longer hold effectively.

#### The recent constraint

Since the mid-2010s, particularly 2019, India has experienced a divergence between the nominal effective exchange rate (NEER) and the real effective exchange

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rate (REER). While NEER reflects the weighted average exchange rate with trade partners, REER adjusts for price level differences. Initially moving in tandem, the indices began to diverge, with REER appreciating despite NEER depreciating, a trend unique to India compared to most countries. Data from 62 countries between 2019 and 2024 (shown in Figure 3) categorize nations into four groups based on their exchange rate movements: appreciation in both NEER and REER, REER appreciation despite NEER depreciation, depreciation in both, and REER depreciation despite NEER appreciation.

The global economy between 2019 and 2024 exhibited two key trends: most countries experienced nominal and real exchange rates moving in the same direction (categories 1 and 3), while India diverged, falling into category 2, where the real exchange rate appreciated despite nominal depreciation. This divergence in India is linked to rising domestic prices, which counteracted nominal exchange rate depreciation.

One reason for higher domestic prices is the increase in the mark-up of non-financial firms. Data from 1,908 firms in the CMIE Prowess database shows that after a decline until the mid-2010s, mark-ups began rising. Mark-up, calculated as the ratio of output price to variable cost, includes expenses such as raw materials, labour, and taxes. A higher mark-up raises domestic prices, regardless of changes in variable costs or the nominal exchange rate.

### The policy question

The weakening rupee has increased price pressures, while the decoupling of the real exchange rate from the nominal exchange rate has complicated net exports recovery and balance of payments adjustments. This raises critical questions for India's exchange rate policy: should it revert to the 2010s strategy, or adopt a new framework? The policy's objectives need clearer definition.

The Reserve Bank of India's (RBI) post-COVID exchange rate policy has appeared inconsistent, with frequent shifts in stance lacking sufficient explanation. These challenges highlight the need for a systematic approach to exchange rate policy.

# RBI announces steps to boost cross-border transactions in rupee

**ECONOMICS & DEVELOPMENT** 

**CONTEXT:** The Reserve Bank of India (RBI) on Thursday announced liberalised norms to encourage the use of Indian rupee and local/ national currencies to settle cross-border transactions.

As the currency hit a record low of 86.70/\$, the RBI signed MoUs with the central banks of the UAE, Indonesia, and Maldives to promote cross-border transactions in local currencies, including the Indian rupee. The Special Rupee Vostro Account (SRVA) arrangement was introduced in July 2022, leading several foreign banks to open SRVAs with Indian banks to boost the use of INR in trade.

The RBI has amended FEMA regulations, allowing overseas branches of authorized dealer banks to open INR accounts for non-residents to settle permissible transactions with residents in India. Non-residents can also use balances in repatriable INR accounts, such as SRVA, for transactions with other non-residents and foreign investments, including FDI in non-debt instruments. Additionally, Indian exporters can open foreign currency accounts overseas for trade settlements.



"If you invest more in your education, then you are likely to get more interest in it."

-Benjamin Franklin

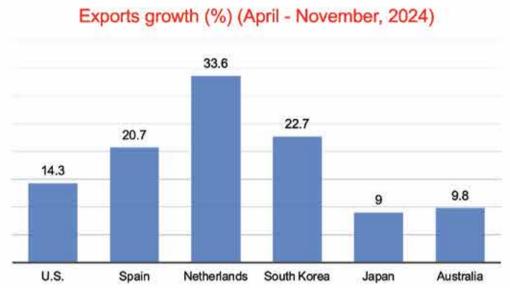
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## Apparel, textile exports grow despite challenges

### **ECONOMICS & DEVELOPMENT**

**CONTEXT:** Apparel exports grew 12.9% in dollar terms in December compared with the previous year while cumulative exports for April-December of 2024 rose 11.6% as against the same period the previous year.

India's apparel exports show a positive long-term outlook due to factors like better product acceptance, adaptability to trends, and compliance focus. From April to November 2024, exports grew significantly to key markets, including the U.S. (14.3 %), Spain (20.7 %), and the Netherlands (33.6 %), as well as FTA markets like South Korea (22.7 %), Japan (9 %), and Australia (9.8 %).



Textile exports rose 12.76 % in December 2024 compared to December 2023 and 4.87 % during April-December 2024 year-on-year, highlighting resilience to global uncertainties. Relaxing Quality Control Order norms and removing import duties on cotton to enhance India's share in global trade.

FIGURE: Column chart representation of the export growth (%) of apparels from India.

## 'Chinese show interest in unwanted German Volkswagen factories'

#### INTERNATIONAL RELATIONS

**CONTEXT:** Chinese officials and automakers are eyeing German factories slated for closure and are particularly interested in Volkswagen's sites.

China is exploring investment in Germany's auto industry, potentially acquiring factories like Volkswagen's Osnabrueck plant, amid VW's cost-cutting and reduced sales due to competition from Chinese EV makers. Such a move could enhance China's influence in Germany's industrial sector, avoid EU tariffs on imported Chinese EVs, and challenge European manufacturers' competitiveness.

Volkswagen plans to end production at its Dresden and Osnabrueck plants by 2025 and 2027, respectively, and is open to selling the Osnabrueck factory to Chinese buyers. However, Chinese firms are cautious about German unions, which demand job guarantees and adherence to VW standards. The investment's feasibility depends on Chinese government approval and Germany's political stance toward China following its February elections.

### Seeking open doors

A Chinese foreign ministry spokesperson emphasized that companies wishing to invest in Germany should be allowed to do so, urging Germany to maintain an open, fair, and non-discriminatory business environment for Chinese firms. Chinese car manufacturers are exploring opportunities to build factories in Europe, the world's second-largest electric vehicle (EV) market, to avoid tariffs imposed by the European Commission on Chinese products. Chinese companies like BYD, Leapmotor, and Chery Auto have already looked into purchasing or setting up new plants in Europe, including locations in Germany and Spain. Selling existing factories, such as those owned by Volkswagen, could be a more cost-effective option than shutting them down entirely. Some companies, like Chery, are considering acquiring existing plants to expedite production, while others, like BYD, are focusing on long-term European goals independent of political factors.

### U.S. tightens controls on advanced chips to curb flow to China

### **INTERNATIONAL RELATIONS**

**CONTEXT:** The United States unveiled further export controls on advanced computing semiconductors, increasing due diligence requirements for businesses as it seeks to prevent diversion of tech to China despite existing restrictions.

The U.S. has imposed new restrictions on AI chip exports to China to limit Beijing's access to advanced technology, citing national security concerns. Commerce Secretary Gina Raimondo stated the measures aim to prevent efforts to undermine U.S. laws. Washington has intensified efforts to restrict the export of cutting-edge chips, fearing their use in enhancing China's military and technological capabilities.

The U.S. has introduced stricter controls to prevent China from acquiring high-end semiconductors essential for advanced AI development. Enhanced due diligence requirements will ensure chips are not diverted to restricted entities, according to Alan Estevez of the Commerce Department. However, the measures have faced criticism, with China's commerce ministry expressing strong opposition.

## Dissanayake secures \$3.7 bn Chinese FDI for oil refinery

### **INTERNATIONAL RELATIONS**

**CONTEXT:** Sri Lanka has secured "one of its largest FDIs", President Anura Kumara Dissanayake announced on Thursday, after signing a \$3.7 billion-agreement with Sinopec during his ongoing state visit to China.



During bilateral discussions, Sri Lankan President Dissanayake and Chinese President Xi Jinping committed to strengthening their countries' ties, advancing Belt and Road cooperation, and fostering a "new era" of development. Dissanayake announced a major foreign direct investment agreement with China's Sinopec for a \$3.7 billion advanced oil refinery in Hambantota, Sri Lanka. The refinery, with a capacity of 200,000 barrels, will be built near the Hambantota port, which is leased to China Merchant Port Holdings for 99 years. This investment reflects Sri Lanka's preference for foreign investments over loans following its economic

crisis and sovereign default in 2022. The project was approved in November 2023, during the tenure of Dissanayake's predecessor, and replaces a previous controversial investment proposal linked to a Singaporean company.

During his visit to China, Sri Lankan President Dissanayake received a ceremonial red-carpet welcome from President Xi Jinping at the Great Hall of the People. The two leaders discussed advancing bilateral ties and signed several Memorandums of Understanding (MoUs) to strengthen cooperation in areas such as economy, social development, and industry. A joint statement highlighted their commitment to major projects like the Colombo Port

City and Hambantota Port development, as well as enhancing Belt and Road cooperation. China also expressed support for Sri Lanka's debt restructuring efforts and pledged continued assistance in easing Sri Lanka's financial challenges. Both countries agreed to work towards a comprehensive free trade agreement based on mutual benefit and equality.

## Bezos's Blue Origin launches rocket on maiden test flight

### **SCIENCE & TECHNOLOGY**

**CONTEXT:** Blue Origin successfully launched its New Glenn rocket on its first test flight, sending a prototype satellite into orbit.



Blue Origin's New Glenn rocket successfully achieved orbit on its debut flight, with its seven engines firing at lift-off, although the first-stage booster missed its landing on a barge in the Atlantic Ocean. The mission aimed to keep the satellite in the second stage for six hours to minimize space debris, which was accomplished. Despite a delayed launch due to ice build-up, the rocket reached orbit 13 minutes after lift-off. CEO Jeff Bezos, watching from Mission Control, celebrated the milestone. New Glenn is designed for multiple flights and is intended to compete with SpaceX's Falcon 9. Blue Origin plans six to eight launches this year, with the next in spring. The

rocket's debut mission, originally intended to send spacecraft to Mars for NASA, has been delayed.

### An alliance of democracies with India at its core

### **INTERNATIONAL RELATIONS**

**CONTEXT:** The need for a pragmatic approach to strengthening India-Europe relations, acknowledging hurdles like differing perspectives on Russia and China.

### Look at the bigger picture

While a comprehensive trade deal may not be achievable in the short term, collaboration should focus on broader geostrategic issues such as economic security, defense cooperation, and critical sectors like pharmaceuticals and emerging technologies.

Europe is frustrated with India's ties to Russia, stemming from historical connections, and India's cautious stance on global power competition as the world polarizes into democratic and autocratic blocs. However, India's democratic values align naturally with Europe and the U.S. Both sides must address mutual dependencies, such as Europe's reliance on China, to foster trust.

A renewed partnership should recognize Russia and China's alliance as a threat to global democracies, emphasizing interconnected security in the Atlantic and Indo-Pacific regions. Practical measures should include breaking trade barriers, reducing reliance on China for critical materials, and building new supply chains, with Europe positioning India as a trusted partner.

### **Defence and trade**

The importance of strengthening India-EU defense and technological cooperation to counter China's dominance in emerging technologies. India and the U.S. already share strong defense ties as a 'Major Defence Partner' and Quad member, and Europe should support this alliance while enhancing its own defense

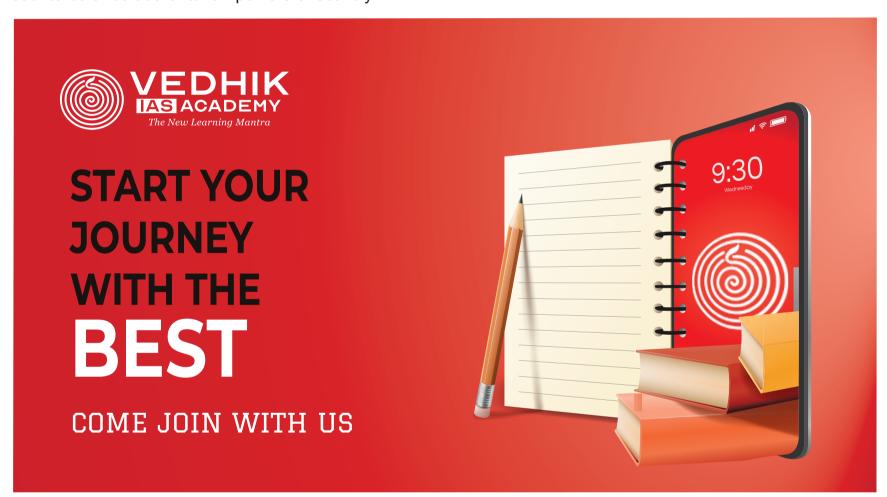
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collaboration with India. Accelerating EU-India defense talks to a high political level and fostering investment in defense industries could provide India with better alternatives to Russian weapons.

The EU and India should also maximize the potential of their Trade and Technology Council (TTC), inspired by U.S.-India initiatives like iCET, which promotes collaboration on critical technologies. With China leading in 57 of 64 key emerging technologies, coordinated efforts among democratic nations—including India, the U.S., and Europe—are vital to outpace China in areas like quantum computing and biotech. The passage calls for united action to ensure the free world remains a leader in technology and innovation.

### In perspective

A practical and tangible relationship between Europe and India, emphasizing stronger people-to-people ties and collaboration. As India is poised to become the world's third-largest economy, Europe stands to benefit economically while also forming a broader alliance of democracies with India at its core. To achieve this, Europe must adjust its approach to India, addressing shared democratic challenges rather than ignoring differences. The passage highlights the combined strength of Europe, India, and the U.S., suggesting that together they can counterbalance authoritarian powers effectively





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