



● POLITY

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Modi likely to visit U.S. to deepen strategic relations, says Trump

INTERNATIONAL RELATIONS



CONTEXT: Prime Minister Narendra Modi is likely to visit Washington DC in February.

U.S. President Donald Trump and Indian Prime Minister Narendra Modi spoke over the phone on Monday, discussing ways to strengthen bilateral ties and cooperation on regional security issues, including the Indo-Pacific, the Middle East, and Europe. The White House emphasized the need for a "fair bilateral trading relationship" and encouraged India to increase its procurement of American-made security equipment. The leaders also discussed Mr. Modi's planned visit to the White House and India's upcoming hosting of the Quadrilateral (Quad) summit. However, following the call, President Trump reiterated his "America First" trade policy, indicating plans to

impose tariffs on foreign countries.

President Trump reiterated his "America First" trade policy, criticizing countries like China, India, and Brazil for imposing tariffs while asserting that the U.S. would no longer allow such practices. Following the U.S. administration's stance, the Quad Foreign Ministers' meeting was held on January 21, attended by India's External Affairs Minister S. Jaishankar. India is set to host the upcoming Quad leadership summit in the coming months. Meanwhile, the Trump administration is focusing on key issues affecting U.S.-India relations, including immigration policies, H1B visas, and tariffs.

Sri Lankan Navy fires at Indian boat, two injured

INTERNATIONAL RELATIONS

CONTEXT: The Sri Lankan Navy fired at a fishing boat from Karaikal, Puducherry, early Tuesday, injuring two fishermen. Additionally, 13 fishermen from Tamil Nadu and Puducherry were arrested for allegedly trespassing and fishing in Sri Lankan waters.

India's Ministry of External Affairs (MEA) stated that two of the 13 Indian fishermen injured by the Sri Lankan Navy suffered serious injuries and are being treated at Jaffna Teaching Hospital, while three others sustained minor injuries. India lodged a strong protest, summoning Sri Lanka's Acting High Commissioner in New Delhi and raising the issue with Sri Lanka's Foreign Ministry. While India condemned the use of force and called for a humane approach, Sri Lanka claimed the fishermen were illegally fishing in its waters and had attempted to assault its naval officers. This incident is part of a longstanding conflict, with 540 Indian fishermen arrested for illegal fishing last year.

'Against use of force'

India's MEA reaffirmed its commitment to a humane approach in handling fishermen-related issues and condemned the use of force. Officials from the Indian Consulate in Jaffna are assisting the affected fishermen, who had set out from Karaikal, Puducherry. Meanwhile, the Sri Lankan Navy accused the fishermen of attempting to assault naval personnel and seize a firearm, claiming their actions endangered naval officers' lives.

China's DeepSeek jolts tech world with a lean, mean AI model

SCIENCE AND TECHNOLOGY

CONTEXT: Chinese start-up DeepSeek has entered the global AI race with its advanced AI model, DeepSeek-R1, claiming near-parity with top U.S. industry leaders at a significantly lower cost. Its launch has sparked discussions on the evolving dynamics of the global AI market.

The trading session on Wall Street left Big Tech companies reeling as investors scrambled to make sense of the damage. AI chip maker Nvidia's market value declined by half a trillion dollars in the biggest single-session loss for any company ever. The impact reverberated across global markets as tech and AI stocks plummeted. Though the sell-off steadied on Tuesday, the low-cost Chinese AI model continues to be popular globally.

'Wake up call'

President Trump called DeepSeek AI's launch a wake-up call for U.S. industries, stressing the need for competition. DeepSeek's AI Assistant, powered by its v3 model, became the top-rated free app on Apple's App Store, signalling a shift in AI competition. The company claimed its model was trained for under \$6 million using Nvidia's H800 chips, far cheaper than U.S. counterparts. Additionally, DeepSeek-R1 is reportedly 50 times more cost-efficient than OpenAI's GPT-4 for specific tasks.

DeepSeek's emergence challenges the notion that Chinese AI lags behind U.S. counterparts, marking a shift from earlier disappointments like Baidu's Ernie bot. While its models rival top Silicon Valley AI, skepticism remains over its claimed \$5.58-million training cost and potential access to restricted Nvidia H100 chips. DeepSeek has yet to address these concerns, and experts caution against overlooking China's strict regulatory oversight on data. Founded in 2023 in Hangzhou by Liang Wenfeng, co-founder of the AI-focused hedge fund High-Flyer, the extent of the fund's financial backing in DeepSeek remains unclear.

ISRO set for a historic 100th launch from Sriharikota

SCIENCE AND TECHNOLOGY



CONTEXT: The Indian Space Research Organisation (ISRO) will in the early hours of Wednesday oversee the historic 100th launch from the Satish Dhawan Space Centre (SDSC) in Sriharikota with the GSLV-F15 mission.

ISRO's journey began with the first launch on August 10, 1979, using the Satellite Launch Vehicle-3 (SLV-3 E10), which was only partially successful. Under the leadership of Dr. A.P.J. Abdul Kalam, ISRO succeeded in launching the Rohini satellite (RS-1) in 1980 with the SLV-3E2. Since then, ISRO has completed various missions, including 62 PSLV launches, 16 GSLV missions, 7 LMV3 launches, and 3 SSLV missions, among others. The spaceport at Sriharikota was chosen for its ideal location, benefiting from features like a favourable launch corridor, proximity to the equator, and a large uninhabited safety zone.

Landmark missions

India's space agency, ISRO, has achieved several milestones, including successful lunar missions like Chandrayaan-1 (2008), Chandrayaan-2 (2019), and Chandrayaan-3 (2023), the latter making India the first country to land on the moon's polar region. Other notable missions include the Mars Orbiter Mission (2013), India's first interplanetary mission, and Aditya-L1 (2023), the country's first mission to study the sun. In 2017, ISRO set a record by launching 104 satellites in a single flight with the PSLV-C37 mission, a feat surpassed by SpaceX in 2021. However, ISRO has faced setbacks, including several launch failures, such as the GSLV-F02 in 2006 and GSLV-F10 in 2021.

OpenAI, maker of ChatGPT, questions jurisdiction of Indian courts in copyright case

SCIENCE AND TECHNOLOGY

CONTEXT: OpenAI Global LLC, the maker of ChatGPT, argued in the Delhi High Court that it cannot be sued for copyright infringement in Indian courts, as its terms of use require arbitration or legal action in California courts. The hearing involved interventions from the Federation of Indian Publishers (FIP) and the Digital News Publishers Association (DNPA) in a case filed by Asian News International.

In a case involving OpenAI, senior advocate Amit Sibal argued that the company's terms of use are governed by California law and fall under California's jurisdiction. Justice Amit Bansal decided to address the jurisdiction issue along with other aspects of the case, allowing hearings to continue. The court issued a notice to OpenAI regarding interventions by the DNPA and FIP, with a reply expected in two weeks. Two friends-of-the-court, Arul George Scaria and Adarsh Ramanujan, were appointed to assist in outlining the legal questions. The case, concerning accusations of copyright infringement over the use of publicly available content to train AI models, has significant implications for AI research and development in India.

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Replace regular table salt with lower-sodium salt substitutes that contain potassium: WHO

SCIENCE AND TECHNOLOGY



CONTEXT: The World Health Organisation (WHO) released a set of guidelines on Sunday recommending use of lower-sodium salt substitutes.

The international body has recommended reducing sodium intake to less than 2 grams per day and suggests replacing regular table salt with lower-sodium salt substitutes containing potassium for adults (excluding pregnant women, children, and those with kidney issues). Excessive salt intake leads to water retention in the body, raising blood pressure. Reducing salt consumption lowers blood

volume, positively impacting blood pressure and improving cardiovascular health, thus preventing strokes.

Effective way

Each year, poor diets lead to 8 million deaths globally, with 1.9 million attributed to high sodium intake. Reducing salt consumption is endorsed as an effective way to lower the risk of Non-Communicable Diseases (NCDs) like cardiovascular

diseases and chronic kidney disease by reducing blood pressure. The guidelines recommend using lower-sodium salt substitutes (where sodium chloride is partially replaced with potassium chloride) for household use, but not for packaged foods or those consumed outside the home. These recommendations target policymakers and health professionals to reduce sodium intake at the population level. In India, where extra salt is commonly added to food, experts like Vivekanand Jha suggest making low-sodium salt affordable and available to all, rather than focusing on individual behaviour. However, concerns about people with undiagnosed kidney disease using potassium-enhanced salt alternatives are raised.

A question of hygiene

SCIENCE AND TECHNOLOGY

CONTEXT: A recent outbreak of Guillain-Barré Syndrome (GBS) in Pune has been linked to a bacterial infection caused by *Campylobacter jejuni*, found in contaminated food and water.

Over 100 suspected cases have been reported, with patients showing symptoms of gastroenteritis, including vomiting, diarrhoea, and nausea before developing GBS, which leads to muscle weakness, numbness, and paralysis. One death has been recorded. GBS is a rare autoimmune disorder that attacks the peripheral nervous system, often triggered by viral or bacterial infections. While global GBS incidence is low, studies suggest a rise during seasonal changes, and this outbreak may be the largest recorded in India. There is a lack of large-scale studies on GBS in India due to challenges in testing in resource-poor settings.

Patients with Guillain-Barré Syndrome (GBS) are treated with plasma exchange or intravenous immunoglobulin therapy, which are most effective if started within two weeks of symptom onset, making early detection crucial. In Pune, rapid response teams are collecting water samples and monitoring the community, while a central team has been sent to affected areas. Local and State governments are responsible for providing clean drinking water and promoting hygiene through regular public messaging to prevent contaminated food and water.

Substantive equality in child marriage laws

POLITY AND GOVERNANCE

CONTEXT: In *Sanjay Chaudhary v. Guddan* (2024), the Allahabad High Court annulled the marriage of a couple, who got married when the man was 12 and the woman was nine, under the Prohibition of Child Marriage Act (PCMA), 2006.

While the man had filed a petition for divorce when he was 20 years, 10 months and 28 days old, he later amended his plea for nullification of the marriage under Section 3 of the PCMA. This allows any party who got married as a child to seek annulment of the marriage as long as the petition is filed within two years of attaining majority.

Artificial differentiation

The Prohibition of Child Marriage Act (PCMA) defines a "child" as a girl under 18 and a boy under 21, while the Majority Act, 1875, states that both men and women attain majority at 18. This creates a discrepancy in the minimum age for annulment of marriage. In 2011, the Madras High Court ruled that males who marry at 20 can annul their marriage at 23, to avoid unfair disadvantage. However, the Allahabad High Court countered this, arguing that males over 18 cannot claim ignorance of the law and that the age difference in marriage reflects outdated patriarchal norms. The Allahabad High Court emphasized that having the same annulment age limit for both genders aligns with gender equality.

The Allahabad High Court, despite acknowledging the gender inequality in marriage age, followed the Supreme Court's 2017 observation in **Independent Thought v. Union of India**, which allowed men to file annulment petitions until age 23. This decision led to the annulment of a child marriage, which the wife has appealed to the Supreme Court. The High Court's reasoning challenges gendered assumptions and raises the need to reconsider the legal age for marriage. The **Independent Thought** case addressed the constitutionality of marital rape exceptions for wives under 18, not annulment under the PCMA. The court's interpretation, granting men more time to annul marriages, creates an unfair disadvantage for women, undermining the PCMA's goal of protecting women's rights.

A case for no difference

The case highlights the need for a uniform age of marriage in India but argues against raising it to 21, as proposed in the Prohibition of Child Marriage (Amendment) Bill, 2021. Such a change would infringe on the rights of adults aged 18-21,

depriving them of autonomy, privacy, and dignity. A 2024 study showed that nearly 50% of child marriages were self-initiated, and raising the marriage age would increase state and parental control over women's choices, risking their access to social protection and health services. The passage advocates for alternatives like free education, social security, and better access to health and comprehensive sexuality education to achieve gender equality and improve maternal health, rather than restrictive policies.

An opportunity

This is an opportunity to examine the injustice in women's access to annulment arising from different minimum ages for marriage, consider an increase in the time limit for seeking annulment, and prescribe 18 as the uniform age of marriage for all genders.

What is DeepSeek, the Chinese AI company?

SCIENCE AND TECHNOLOGY

CONTEXT: A new frenzy over DeepSeek, a Chinese tech start-up's artificial intelligence chatbot, was significantly impacting stock markets on Monday. The excitement surrounding the chatbot is sparking debates about the economic and geopolitical rivalry between the U.S. and China in the development of AI technology.

DeepSeek's AI assistant became the most downloaded free app on the Apple iPhone store, sparking concern among U.S. tech observers. The worry is that the Chinese start-up has matched the performance of leading U.S. generative AI companies at a much lower cost, potentially questioning the large investments U.S. firms plan to make in data centers and chips for AI. However, misconceptions and hype surrounding DeepSeek's technology have contributed to confusion about its true advancements.

'Not miracles'

DeepSeek, a start-up founded in 2023 in Hangzhou, China, gained attention with its AI models, claiming performance comparable to U.S. companies like OpenAI, while being more cost-effective. Its CEO, Liang Wenfeng, previously co-founded a hedge fund and used Nvidia's H800 chips, which are not restricted by U.S. export bans. DeepSeek's release of a new AI model, along with a research paper showcasing advanced "reasoning" skills in its R1 model, triggered concern, especially regarding its lower costs compared to OpenAI's o1. Analysts like Stacy Rasgon argued that while DeepSeek's models were impressive, they weren't groundbreaking, and the panic stemmed from their pricing rather than technical innovations. The situation highlights the U.S.-China competition in AI development.





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Govt. schoolchildren lead recovery in basic skills; private ones lag

POLITY AND GOVERNANCE

Evaluating student performance

The charts were sourced from the Annual Status of Education Report (Rural) 2024



The ASER 2024 survey was conducted across 605 districts among children aged 5 to 16. Older children aged 14-16 were asked questions about their digital access and usage

Chart 1: The share of children in Class 5 who can read Class 2- level text (In %)

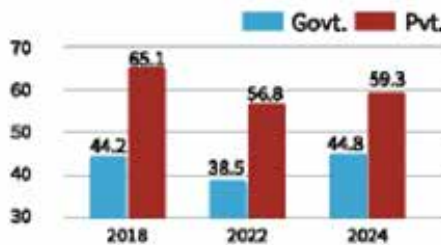


Chart 2: The chart shows share of children in Class 5 who can divide numbers (In %)



Table 3: Shows State-wise data for chart 1

Govt.	Pvt.	State	Year	Govt.	Pvt.
57.1	64.8	Andhra Pradesh	2018	36.7	45.3
37.9	31.5	Andhra Pradesh	2022	27.3	36.4
37.5	38.5	Andhra Pradesh	2024	35.1	38.5
33.5	60.9	Assam	2018	14.4	28.2
29.2	58.7	Assam	2022	10.1	30.3
32.8	55.8	Assam	2024	12	30.9
35.1	78.1	Bihar	2018	24.1	64
37.1	73.4	Bihar	2022	30	67.1
41.2	66.2	Bihar	2024	32.5	67.7
57.1	70.2	Chhattisgarh	2018	26.1	30.2
52.9	68.6	Chhattisgarh	2022	22.8	35
52.3	65.8	Chhattisgarh	2024	22.9	41.5
58.1	78.3	Haryana	2018	34.4	64.5
46.8	71.8	Haryana	2022	27.6	60
53.9	72.9	Haryana	2024	29.4	56.9
74.5	80.4	Himachal Pradesh	2018	51.5	64
60.2	63.1	Himachal Pradesh	2022	38.1	50.5
65.8	68.7	Himachal Pradesh	2024	44	51.8
24.3	69.1	J&K UT	2018	13.6	42.6
18.1	54.9	J&K UT	2022	14	32.1
21.8	60.3	J&K UT	2024	16.3	37.6
29.4	63.5	Jharkhand	2018	15.6	39.6
31.6	66.5	Jharkhand	2022	20.8	52.7
40.3	68.2	Jharkhand	2024	25.5	52.3
47.6	41.8	Karnataka	2018	19.6	23
29.2	34.1	Karnataka	2022	12	17.9
32.8	37.8	Karnataka	2024	19.3	25.6
73.3	81.8	Kerala	2018	33.3	52.5
61.9	69.6	Kerala	2022	20.2	38.2
58.2	71.7	Kerala	2024	12.4	27.6
34.4	63.1	MP	2018	16.5	29.5
29.2	51	MP	2022	15.7	27.4
37.5	58.1	MP	2024	16.9	33.2
66	67.1	Maharashtra	2018	31.7	28
55.7	55	Maharashtra	2022	20.1	18.8
57.9	61.8	Maharashtra	2024	26.1	29.8
68.7	74.4	Punjab	2018	50.1	55.7
59.4	75.5	Punjab	2022	33.3	51.8
60.8	62.2	Punjab	2024	46.3	52.6
39.1	65.8	Rajasthan	2018	14.1	38.1
31.5	57	Rajasthan	2022	6.3	32.8
37.7	63.5	Rajasthan	2024	12.3	37.2
46.3	28.8	Tamil Nadu	2018	27.1	22.2
26	22.4	Tamil Nadu	2022	14.7	15.5
37	32.3	Tamil Nadu	2024	20.2	22.1
36.2	68.8	UP	2018	17	42.9
38.3	63.2	UP	2022	24.5	46.7
50.5	65.6	UP	2024	31.8	51.2
58	72.8	Uttarakhand	2018	26.7	50.9
47.7	62.8	Uttarakhand	2022	23.3	41.8
60.3	71.5	Uttarakhand	2024	35.4	48.9

Table 4: Shows State-wise data for chart 2

Union Budget: understanding its formulation and implications

ECONOMICS AND DEVELOPMENT

CONTEXT: The Budget, which will be tabled in Parliament by Finance Minister Nirmala Sitharaman, is the Government's blueprint on expenditure, taxes it plans to levy, and other transactions which affect the economy and lives of citizens.

What are the major components of the Budget?

There are three major components — expenditure, receipts and deficit indicators. Depending on the manner in which they are defined, there can be many classifications and indicators of expenditure, receipts and deficits.

Total expenditure can be categorized into capital and revenue expenditure based on its impact on assets and liabilities. Capital expenditure is spent to create durable assets or reduce recurring liabilities, such as constructing new schools or hospitals. Revenue expenditure, on the other hand, does not contribute to assets or reduce liabilities, and includes expenses like wages, subsidies, or interest payments.

Expenditure is classified into four sectors: general services, economic services, social services, and grants-in-aid and contributions. Economic services cover areas like transport, communication, and rural development, while social services include sectors like education and health. The total expenditure on economic and social services is known as development expenditure, which can further be divided into capital and revenue expenditure based on its impact on asset creation or liability reduction.

Government receipts are classified into three types: revenue receipts, non-debt capital receipts, and debt-creating capital receipts. Revenue receipts come from taxes and non-tax sources and don't increase liabilities. Non-debt receipts, such as loan recoveries and disinvestment proceeds, also don't create additional liabilities. Debt-creating capital receipts increase government liabilities and future payment commitments. The fiscal deficit is the difference between total expenditure and the sum of revenue and non-debt receipts, showing the government's net spending. A positive fiscal deficit must be financed by debt-creating capital receipts. Primary deficit is the fiscal deficit minus interest payments, while revenue deficit is the fiscal deficit minus capital expenditure.

What are the implications of the Budget on the economy?

The Budget affects aggregate demand in the economy. Government expenditure increases aggregate demand by purchasing private goods and services, while tax and non-tax revenue reduces private sector income, lowering demand. Over time, GDP, revenue receipts, and expenditure tend to rise, making their absolute values less useful for analysis. Instead, trends in expenditure and revenue are analysed relative to GDP or as growth rates adjusted for inflation. A reduction in expenditure-GDP ratio or an increase in revenue-GDP ratio signals a government policy to reduce aggregate demand, while changes in fiscal deficit-GDP and primary deficit-GDP ratios also reflect shifts in demand policy.

The Budget impacts income distribution as different components of expenditure and revenue affect various social groups differently. For example, revenue expenditures like employment guarantee schemes or food subsidies can increase the income of the poor, while corporate tax concessions benefit corporate incomes. Although both types of expenditure may widen the fiscal deficit, their effects on income distribution are distinct.

What are fiscal rules and how do they affect policy?

Fiscal rules set specific policy targets that guide fiscal policy, with targets varying based on economic theory and a country's unique context. In India, the fiscal rule follows the N.K. Singh Committee's recommendations, focusing on three targets: debt-GDP ratio (stock target), fiscal deficit-GDP ratio (flow target), and revenue deficit-GDP ratio (composition target). While both revenue and expenditure can be used to meet these targets, India's tax rates are determined independently of expenditure needs. Thus, in India's system, expenditure is primarily adjusted to meet fiscal rules within the existing tax framework.

The current fiscal policy in India has two key implications: first, existing fiscal rules set a cap on expenditure by imposing targets for debt-GDP, fiscal deficit-GDP, and revenue deficit-GDP ratios, regardless of the economic need to stimulate growth or increase labour income. Second, if any of these ratios exceed their target levels, expenditure is reduced to meet the policy targets. This approach may force the government to cut expenditure even when an expansionary fiscal policy is needed to address issues like unemployment and low output growth, suggesting the need for a re-examination of India's fiscal rules.



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