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# *Daily News Feed*

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# Would Trump break the capital controls taboo with a Tobin tax?

Mr. Trump's officials have not yet started publicly discussing capital controls—or taxes on foreign investment; but economists and investors sympathetic to the administration's policies are freely batting around the option to widen the scope of taxation to international capital flows

**NEWS ANALYSIS**

**Mike Dolan**
LONDON

Investment barriers have long been taboo among U.S. policymakers, for fear that a mere mention could spook the world's biggest financial market. But the idea of taxing or frustrating inward investment is now being openly discussed by investors as Donald Trump's sweeping economic agenda rewrites all the rules.

The macroeconomic worldview that underlies much of the president's agenda is based on international trade accounts and zero-sum rivalry. If the U.S. is running large and chronic deficits in goods, so the thinking goes, then it must be because trading partners are systematically undervaluing their currencies against the dollar to uncut American business, suppressing their domestic consumption and, in the process, "stealing" U.S. manufacturing jobs.

These countries then plow the savings created by these huge trade surpluses back into U.S. assets. And that, in turn, pushes the dollar's value higher, lowers the U.S. cost of capital and enables Americans to consume ever more overseas goods.

Tariffs on imports, Mr. Trump's economic weapon of choice during his first month back in office, are one way to push back against this perceived global slight against American workers. But there's an obvious flip-side to this view.


**Nuclear option:** The U.S. deterring overseas investment could devastate a frothy market. AP

America's large and rising current account deficit, which captures U.S. net trade flows in goods and services as well as net investment income, has to be matched by an equal and opposite capital account surplus to balance the nation's books.

These cumulative capital surpluses have been driving the dollar higher for years, juicing American's stock portfolios and reducing U.S. businesses' cost of capital.

At last count, the net international investment position (NIIP—or the net overseas holdings of U.S. assets less U.S. ownerships of non-U.S. securities—was a mind-boggling $23.6 trillion, roughly 80% of annual U.S. GDP.

> President Trump doesn't like the size of the U.S. trade deficit, but would he be happy to see the savings that finance that deficit go home?
>
> **KIT JUCKES**
> Chief FX strategist, Societe Generale

As Societe Generale's Kit Juckes wrote last week: "President Trump doesn't like the size of the U.S. trade deficit, but would he be happy to see the savings that finance that deficit go home?"

**Chicken or egg?**

This national accounts approach suffers from the 'chicken or egg' syndrome, of course.

It's not at all clear which comes first—U.S. 'exceptionalism' in market scale, growth, innovation and liquidity, which attracts foreign capital, or the flood of capital itself, which results in a chronically overvalued dollar that makes U.S. exports uncompetitive worldwide?

But either way, the Trump team's current plan for dealing with the issue—taxing imports—is flawed for two key reasons.

First, tariff threats have, thus far, mostly lifted the dollar even more, exaggerating the trade competitiveness problem. The second problem is that import tariffs do little to address the relentless demand for U.S. assets—the other side of this equation.

To deal directly with that, some experts think you might need to "throw sand in wheels" of cross-border flows, a phrase coined by Yale economist and Nobel Laureate James Tobin almost 50 years ago when positing a "Tobin tax" on currency transactions to tame capital flows.

To be sure, Trump officials have not yet started publicly discussing capital controls—or taxes on foreign investment. But economists and investors sympathetic to the administration's policies are freely batting around the option.

Currency hedge fund manager Stephen Jen at Eurizon SLJ wrote last week that taxing inward investment would be preferable to tariffs if the goal is to raise revenue, as tariffs would never bring in enough revenue to be a true alternative to the income tax.

Mr. Jen suggested that widening the scope of taxation to international capital flows—in effect a 'Tobin tax' on currency transactions—could widen the potential 'external' revenue base to 50 times that of the trade in goods.

"There are, of course, obstacles and trade-offs in such taxes on capital flows, but in our view, they are no more daunting or negative than those associated with import tariffs."

Conceivably, a fractional tax could be the sweet spot if the administration is focused primarily on raising revenue. Applying Tobin's idea of a 0.0005% tax on currency transactions in a global market that turns over $7.5 trillion every day could raise huge amounts of revenue and likely wouldn't reduce the transactions or flows.

But is raising revenue really the goal of the Trump administration or is it altering supposedly "unfair" trading relationships? If it's the latter, then the capital controls would necessarily need to be disruptive to be effective.

And they could be very disruptive indeed. Even the possibility that the U.S. would think about deterring overseas investment could be devastating in an already frothy market. Not only might the dollar fall sharply, but it could take the entire U.S. stock and bond market with it.

So capital controls are an obvious option if Mr. Trump truly seeks to upend the global balance of trade—but they would also be the nuclear option.

*(The author is a columnist for Reuters)*

# What is contributing to the downturn in Indian markets?

How are U.S. President Donald Trump's recent directives affecting Indian stock markets? What is the relationship between bond yields and stock markets? Will the rupee strengthen?

Saptaparno Ghosh

**The story so far:**

For the sixth consecutive day, BSE Sensex closed lower on Wednesday reflective of a major sell-off among foreign institutional investors and portfolio investors (FIIs/FPIs), mixed earnings and apprehensions about the tightening of the (imports') tariff regime in the U.S.

### Why is Trump affecting markets?

On Tuesday, U.S. President Donald Trump issued directives to restore tariff on steel and elevate the tariff on aluminium to 25%. The White House held these were to protect America's industries which "have been harmed by unfair trade practices and global excess capacity".

However, the directive was not well received in the Indian markets. This is primarily due to apprehensions about a potential dumping of Asian exports to India, potentially culminating into downward revision of prices and increased competition. Indian steel manufacturers are already amidst a revision in steel prices. For perspective, Indian manufacturer JSW Steel stated in its Q3 earnings about its Net Smelting Return (NSR) in India falling by close to ₹1,800 compared to the preceding quarter. Additionally, with respect to the alleged dumping, India's Directorate General for Trade Remedies (DGTR) has an ongoing investigation into the imports of 'non-alloy and alloy steel flat products'.

### Why is foreign money moving away?

FIIs and FPIs have been increasingly moving towards U.S. bonds, seeking a haven away from the current modest Indian markets with potentially lesser returns. According to Devarsh Vakil, Head of Prime Research at HDFC Securities, the current situation in the market emanates from tepid domestic earnings growth, elevated valuations in mid and small cap segments, and persistent inflation exceeding the RBI's lower threshold of 4%, and uncertainty around trade and tariffs. It is imperative to note here that bond yield and stock markets have an inverse relationship. This is because both vie for investor funds, aspiring to outdo the other by offering more returns. Therefore, when U.S. bond yield rises, foreign investors transit from Indian equities to U.S. bonds. Domestic, economic and political certainty alongside monetary policies are other contributing factors. All in all, the entire paradigm contributes to making the dollar stronger and the rupee weaker because of the flow of money. V.K. Vijaykumar, Chief Investment Strategist at Geojit Financial observed that while the downturn in markets has been because of a combination of factors, the major among them has been the "relentless FII selling". He told *The Hindu* about FIIs having sold in the cash market every day, except for two days, so far this year – totalling to ₹93,907 crore. He further noted that while domestic institutional investors have been compensating for the FII outflows, "market sentiments have been impacted." Apurva Sheth, Head of Market Perspectives & Research at SAMCO Securities pointed out that dollar denominated returns of Indian equities "have not been impressive at all".

Mid and small caps stocks are also experiencing a correction due to the sell-off spree.

### What is outlook for the near-term?

Tightening of trade policies with the probability of a trade war under Trump, geopolitical tensions and slowing global growth could influence markets going forward. According to Mr. Vijaykumar, "FIIs will return to India, only the timing is uncertain." He further adds, "Indications of a growth and earnings recovery in India and dollar decline – we do not know when it will happen, will make FIIs buyers in India." Additionally, Mr. Vakil holds that deep uncertainty about President Trump's tariffs plans may keep investors on the "defensive". As for the outflow, he contends SIP flows are likely to remain strong and should be able to absorb bulk of the selling.

## THE GIST

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# Should convicted persons contest elections?

What does the Representation of the People Act, 1951 stipulate with respect to electoral candidates convicted of criminal offences? What are the various judgments of the Supreme Court which favour the decriminalisation of politics? What is the case for a lifetime ban on convicted individuals standing for office?

EXPLAINER

**Rangarajan. R**

**The story so far:**

The Supreme Court is hearing petitions filed by Ashwin Upadhyay and others, seeking a life time ban on convicted persons from contesting elections.

**What are the legal provisions?**

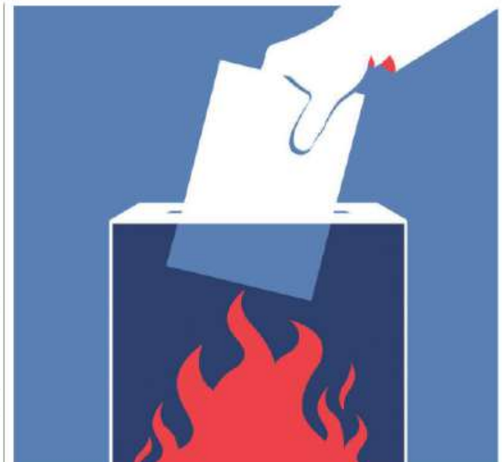
Section 8(3) of the Representation of the People Act, 1951 (RP Act, 1951), provides for the disqualification of a person convicted of a criminal offence and sentenced to imprisonment for not less than two years. Such a person is disqualified from contesting elections for a further period of six years from the date of release. Section 8(1) further stipulates that a person convicted under criminal laws for heinous crimes like rape; the Protection of Civil Rights (PCR) act for preaching or practice of untouchability; UAPA for unlawful association; Prevention of Corruption Act etc., will be disqualified irrespective of the period of their sentence and six years after release.

**What were past decisions?**

The Supreme Court has delivered notable judgments in favour of the decriminalisation of politics. In the *Association for Democratic Reforms* (ADR) case (2002), it mandated the disclosure of criminal records of all candidates contesting elections. In the *CEC vs Jan Chaukidar* case (2013), it upheld the creative interpretation of the provisions of the RP Act, 1951 by the Patna High Court. One of the qualifications as per the act to contest elections is that a person should be an 'elector.' Section 62(5) stipulates that a person in jail is not eligible to vote in elections. The court interpreted that persons who are under trial prisoners, therefore cease to be 'electors' and hence not qualified to contest elections. However, the Parliament amended the act in 2013 to overturn this judgment allowing under trial prisoners to contest elections. In *Lily Thomas* (2013), the court struck down section 8(4) of the RP Act, 1951, that allowed a sitting legislator to continue as a member even after being convicted if they filed an appeal, as unconstitutional and against political justice. After this judgment, a sitting legislator is disqualified immediately after the sentencing for a conviction.

It is pertinent to note that Section 11 of the RP Act, 1951 provides that the Election Commission (EC) may remove any disqualification or reduce the period of disqualification of a convicted person. It utilised this power in September 2019, to reduce the disqualification period of Prem Singh Tamang, incumbent Chief Minister of Sikkim, from six years to 13 months which allowed him to contest and win a byelection.

It was a questionable decision of the EC to have reduced the disqualification period of a person convicted under the Prevention of Corruption Act, considering its various recommendations to curb criminalisation of politics.



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**What is the current petition?**

The current petition seeks a life time ban on convicted persons from contesting elections. The petitioners argue that if a convicted person is not eligible for even a junior-grade government job, how could they become law makers six years after serving their sentence. However, the Central government in an affidavit filed before the court in 2020 had mentioned that MPs and MLAs are not bound by any 'service conditions' unlike government servants, and hence the present disqualification period of six years after serving the sentence is adequate.

The Supreme Court has again sought the response of the Central government and the EC on the current petition.

**What can be the way forward?**

A report by ADR states that 251 (46%) of the 543 elected MPs in 2024, have criminal cases against them, and 171 (31%) face serious criminal charges including rape, murder, attempt to murder and kidnapping. It added that chances of winning for a candidate with a criminal background was 15.4% as against just 4.4% for a candidate with a clean background. The Law Commission in 1999 and 2014, and the EC on various occasions have highlighted the need to curb the criminalisation of politics. They have recommended that even persons against whom charges are framed by a competent court for an offence that entails punishment of more than five years should not be allowed to contest elections.

However, there has been no consensus on this recommendation amongst political parties considering the risk of its misuse. As regards the current petition, there may be convictions that do not involve moral turpitude for which permanent disqualification would be inappropriate and disproportionate. With respect to convictions for heinous crimes and under statutes like the Prevention of Corruption Act, there may be a case for life time disqualification as it is directly linked with probity in public life.

Meanwhile, the powers vested with the EC for reducing or removing the period of disqualification of a convicted person should be reviewed by the court for its constitutional validity.

*Rangarajan. R is a former IAS officer and author of 'Polity Simplified'. Views expressed are personal.*

**THE GIST**

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# Implications of the AI Diffusion Framework

**Ashwin Prasad**

Research Analyst in the High-Tech Geopolitics Programme at The Takshashila Institution

The Biden-Harris administration unveiled a flurry of policies in their last week in office. The most extraordinary among them is the Framework for Artificial Intelligence (AI) Diffusion. It has many goals: preserving U.S. hegemony in AI technology, balancing innovation and national security, and deterring U.S. adversaries from harvesting the strategic rewards of AI. These goals signal the U.S.'s strategic vision for AI, heralding its transformative potential to advance economic prowess and military dominance in the coming years.

**Mechanism of the framework**

Compute capacity using advanced AI chips is a key infrastructure necessity in developing advanced AI systems. Leveraging the U.S.'s dominance in chips and the AI supply chain, the framework extends the prevailing export controls to cover the entire gamut of AI technology stack, including AI chips, chip-making tools, and closed AI model weights – the key to a trained AI system's learning and decision-making abilities.

Countries are placed in three tiers, each subject to different levels of restrictions. The first tier comprises key allies, irreplaceable in the AI supply chain. They are unconstrained in their freedom to import AI technology. The third tier covers key adversaries such as Russia, China, North Korea, and Iran. The framework perpetuates the entire spectrum of export controls and prevents the diffusion of advanced AI systems to these countries. The second tier encompasses the rest of the world, including India. The framework establishes a system of limited access to these countries. Companies from the U.S. can tap into the commercial opportunities of AI in these countries as long as they maintain only a tiny share of their total compute capacity there and safeguard against unauthorised access.

> The Framework for AI Diffusion evaluates India solely by its technological capabilities in AI, while ignoring the strategic value of the India-U.S. partnership

The prevailing export controls have always been restrictive against U.S. adversaries. At first glance, this framework seems to extend some of these restrictions on all but closest allies and partners. Indeed, major allies such as Austria and Israel and other strategic partners such as India are not exempt from the rules. However, the limits and caps imposed are free-handed in satisfying any near-term demand for AI chips from anyone but the countries of concern. Even the export restrictions on model weights are for closed models that far exceed any existing advanced AI systems. So, it will be business as usual in the short term.

The entire system is designed to ensure that if advanced AI systems that are more powerful and capable than the prevailing ones are ever developed, it will happen only in trusted American geographies. The framework will likely succeed in its objectives in the short term and accrue the benefits of cutting-edge AI to the U.S. and its closest allies. But it will influence and reshape the global technological and strategic landscape in the long term.

Through a series of executive actions, the U.S. has mandated the concentration of global AI technological capabilities within its borders and those of allied countries. American companies seeking to establish frontier-scale AI capabilities outside the U.S.– whether motivated by lower costs or more favourable policies – will now face significant barriers. Even among key allies exempt from export controls, this policy sets a concerning precedent of unilateral American executive action that could potentially deny them their strategic priorities in the future.

These allies and American corporations will likely hedge against such possibilities, developing contingency plans to protect their technological interests and maintain competitive advantages. In fact, as AI technology advances in the long term, the likelihood increases that America's plans may yield unintended consequences. Countries, including U.S. allies, will become more motivated to develop independent supply chains and sovereign AI innovation to circumvent U.S. technological constraints. This could fragment the global AI ecosystem that the U.S. currently dominates.

**Eroding goodwill with India**

The policy framework disadvantages India, positioning it less favourably than anticipated. By discouraging the development of cutting-edge AI systems beyond U.S. borders, the framework may disincentivise investments and operations of Indian subsidiaries of leading American AI companies. This could create conditions that risk drawing away India's pool of top AI talent and impeding knowledge transfer and technological innovation within the country. This could be a major point of contention for India, given the implications on its technological and economic interests.

The framework evaluates India solely by its technological capabilities in AI, while ignoring the strategic value of the India-U.S. partnership. It also disregards the substantial social capital built between the two countries through recent technology cooperation, including advances in semiconductor manufacturing collaboration. Instead, it serves as a stark reminder of the U.S.-led technology denial regimes that restricted India's access to nuclear technologies for three decades following its nuclear tests.

There is a disconnect between America's export control policies and its strategic partnership with India regarding Indo-Pacific cooperation and shared goals of countering Chinese influence in the region. This misalignment risks undermining the bilateral relationship both nations have carefully cultivated in recent years. It could compel India to hedge against its technological and economic dependence on the U.S.

# Budgeting for a gender-inclusive 'Viksit Bharat'

**Susan Ferguson**

is Country Representative at UN Women India

The Union Budget 2025-26 emphasises the government's commitment to inclusive development, balanced growth and prioritising the well-being of four key population groups: the poor, youth, farmers, and women. In a welcome announcement, the Finance Minister set forth a holistic vision for Viksit Bharat (or Developed India) with 'zero poverty, universal good quality school education, 100% skilled labour with meaningful employment, 70% women in economic activities, and India as the food basket of the world.' The explicit inclusion of women as a priority group within this national development framework is commendable and reinforces the government's pledge towards women-led development.

### Gender budget allocation

One of the most notable advancements in the Budget is the increase in the gender budget to 8.8% of the total Budget, a significant jump from 6.8% in the previous year. This is the highest allocation in two decades, with ₹4.49 lakh crore spread across 49 Union Ministries and departments. It reflects a strong commitment to creating a more supportive and empowering environment for women and girls. Further strengthening this commitment, 12 additional central Ministries – many from non-conventional sectors such as railways, ports, shipping and waterways, land resources, pharmaceuticals, and food processing industries – have integrated gender budgets, reflecting a whole-of-government approach to gender mainstreaming.

As in the Periodic Labour Force Survey, India's female labour force participation rate (FLFPR) measured at usual status has steadily risen, reaching approximately 42% in 2023-24 from 33% in 2021-22. This is approaching the global average of 47%, as reported by the International Labour Organisation. However, a 37-percentage point gap remains when compared to men's labour force participation of 79%. Achieving the ambitious target of 70% women's participation in economic activities by 2047 necessitates increased investment in skilling, employment, entrepreneurship, access to productive resources, and social security entitlements – areas that the Budget has acknowledged through its various schemes. Key initiatives such as the Skill India Programme, Entrepreneurship and Skill Development Programme (ESDP), National Skill Training Institutes, Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM), the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), PM Employment Generation Programme, PM Vishwakarma, and Krishonnati Yojana have seen a combined increased allocation from ₹1.19 lakh crore to ₹1.24 lakh crore this year. Approximately 52% of these funds are directed toward women and girls. Additionally, new schemes such as the Prime Minister Dhan-Dhaanya Krishi Yojana, first-time entrepreneurs' scheme, sustainable livelihood for urban workers initiative, and Centres of Excellence for Make in India, will play a critical role in fostering women's workforce participation.

> Gender-responsive budgeting can help India's women to become key drivers of national growth

### A focus on gig workers

With 90% of India's working women engaged in the informal sector, the Budget's proposal to formalise gig workers by issuing identity cards and registering them on the e-Shram portal is a significant step. This initiative has the potential to empower millions of women by providing them with formal identity, access to social security entitlements, and financial inclusion benefits.

While the gig economy has offered women financial independence and flexible work arrangements, it often comes with low wages, job insecurity, and a lack of employment rights, including maternity benefits. The enforcement of labour codes and the provision of comprehensive social security measures, including progressive parental entitlements across informal and formal sectors, will be critical to ensure women's economic security.

The establishment of a Centre of Excellence on Artificial Intelligence (AI) for the education sector and a dedicated ₹600 crore gender budget under the India AI Mission, demonstrate the government's intent to harness AI for social good. As technological advancements redefine the future of work, investing in digital education, skills, and enterprise training for women will be imperative to ensuring equitable outcomes in the workforce and benefits for the entire economy.

### A diversity of economic roles

Financial institutions must recognise women's diverse economic roles, particularly in agriculture, entrepreneurship, and employment. For example, simplifying documentation requirements for economic and social security provisions, such as delinking Kisan Credit Cards from land ownership, would help women farmers avail loans and credit facilities that they can use to improve crop yields, productivity and expand their agricultural and allied operations. Tracking access and usage of such schemes through gender-disaggregated data would further enhance their effectiveness.

As per the government's Udyam portal, 20.5% of the micro, small and medium enterprises are women-owned employing about 27 million people. Unlocking finance for women-owned enterprises through collateral-free loans, alternative credit scoring models, and targeted financial literacy programmes will catalyse economic growth. Bain and Company, and Google, claim that establishing 30 million additional women-owned businesses could generate 150-170 million jobs, accounting for over 25% of the job creation needed for India's working-age population by 2030.

Budget 2025-26 provides a robust foundation for advancing women's economic participation. Realising the vision of Viksit Bharat requires sustained efforts in policy implementation, infrastructure development, and social norm transformation. By ensuring gender-responsive budgeting, strengthened social protection, and by fostering a labour market which includes both women and men, India can pave the way for women to become key drivers of national growth, ultimately achieving the ambitious target of 70% women in economic activities by 2047.

# Nuclear energy — dangerous concessions on liability


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In the Union Budget speech on February 1, the Finance Minister Nirmala Sitharaman announced the government's intention to take up "amendments to the Atomic Energy Act and the Civil Liability for Nuclear Damage Act...." This announcement is likely to please Washington, where successive administrations have been unhappy that the law places some minimal responsibilities on nuclear manufacturers in the event of an accident. But, in India, any move to indemnify suppliers should be a matter of serious concern since this could undermine nuclear safety.

Moreover, the reactors that the American government is pushing India to buy are extremely expensive and their import makes no sense on economic grounds.

Any nuclear reactor carries the risk of accidents – some of which, such as the multiple reactor meltdowns at Fukushima, Japan, in 2011, can be catastrophic. Such a disaster affects three parties: the victims, the operator of the nuclear plant (which, in India, is likely to be the public sector company, Nuclear Power Corporation of India Limited or NPCIL) and its supplier, which might be a large multinational corporation.

Following the Bhopal gas disaster (1984) the Supreme Court of India ruled, in 1986, in the Delhi Oleum gas leak case, that any enterprise engaged in a hazardous activity is "absolutely liable" for harm suffered by the victims. However, in 2010, the United Progressive Alliance (UPA) government created a special law for nuclear accidents that diluted this principle. Under this law, primary liability is channelled to the operator and capped at ₹1,500 crore.

This is unfair to victims because the economic damage caused by an accident can be much higher. The Japan Center for Economic Research estimated that the eventual cleanup costs of the Fukushima disaster could range from ¥35 trillion to ¥80 trillion (or ₹20 lakh crore to ₹46 lakh crore) – more than a thousand times the cap on operator liability in the Indian law.

### Assigning responsibility

Despite this gross mismatch, the law did have one slightly redeeming feature. Under pressure from civil society groups and the political opposition, the UPA government was forced to include a clause called the "right of recourse". This allows the operator to recoup compensation paid to victims from the supplier if the accident was caused by "supply of equipment ... with patent or latent defects or sub-standard services".

Because of the historical monopoly enjoyed by U.S. nuclear companies, liability laws in many other countries lack this feature. Instead, they completely indemnify suppliers. This simply reflects the influence of powerful corporations and is not based on a scientific analysis of previous accidents. In fact, design defects have played a role in every major accident to date. A weakness in the Mark 1 containment used in the reactors at Fukushima contributed to that accident. This defect was flagged as early as 1972, when a U.S. Atomic Energy Commission official warned that General Electric (GE), the reactor's designer, had used "data from tests not applicable to accident conditions" in safety assessments. The official recommended that "such designs not be accepted for construction permits" in the future. GE simply brushed aside this concern and, because it is indemnified by the Japanese liability regime, has not paid anything for the Fukushima accident.

> The line in the Union Budget on the intent to amend the Civil Liability for Nuclear Damage Act should be a matter of serious concern

Indemnity removes any direct economic incentive for suppliers to ensure reactor safety once a sale is completed. This is not a hypothetical concern. Following the 1979 accident at Three Mile Island, the Kemeny Commission established by the U.S. government noted that Babcock & Wilcox, the supplier of the reactor, had identified a safety hazard in an "earlier accident, bearing strong similarities to the one at Three Mile Island". Even though an engineer at the company had "urged, in the strongest terms, that clear instructions be passed on to the operators" to mitigate this hazard, the supplier failed to do so.

### Backtracking on progress

Nuclear suppliers were furious at the idea that they might have to pay for accidents in India. To appease these companies, the UPA government made farcical attempts to dilute the right of recourse, both during and after the parliamentary debates on the law. This led the Bharatiya Janata Party leader Arun Jaitley to write that a "leopard never changes its spots."

However, after assuming power, the National Democratic Alliance government has pursued precisely the same policy of prioritising nuclear corporations over potential victims. Following U.S. President Barack Obama's visit to India in 2015, the Ministry of External Affairs issued a set of "frequently asked questions" downplaying the operator's right of recourse, and disingenuously suggesting that it could be bypassed using a contractual arrangement between the supplier and the NPCIL.

These machinations have not satisfied U.S. suppliers who are unwilling to expose themselves to any legal hazard in India. Their concerns are easy to guess. Although the current liability cap is low, a future government might rationalise it to reflect the true cost of an accident, exposing these companies to large financial risks. Moreover, accepting even minimal liability in India endangers their cosy arrangements in other countries where they have successfully demanded complete indemnity.

Finally, if the liability law mandates an assessment of the supplier's culpability, this might allow victims to hold corporate executives to account using criminal laws in the event of a disaster.

U.S. officials have actively lobbied on behalf of these politically influential companies. The outgoing U.S. Ambassador to India, Eric Garcetti, recently indicated that he had been in touch with leaders from both the ruling party and the Opposition in an effort to have the law amended. He also lamented that U.S. corporations had been unable to sell a single reactor to India nearly two decades after the U.S.-India Civil Nuclear Agreement. However, this has allowed India to avert a costly mistake as the troubled track record of these reactors in their home country shows.

The leading American reactor design on offer is called the AP1000. Electric utility companies commenced construction on four such reactors in the U.S. Two of these reactors, in South Carolina, were abandoned after repeated delays and cost escalations even though more than $9 billion had already been spent. Two other reactors, in Georgia, were completed at an eye-popping cost of $36.8 billion, over 250% of the $14 billion estimate provided at the start of construction.

These high costs translate to expensive electricity. Even taking into account lower labour costs in India, the cost of electricity from such reactors would be several times higher than competing sources as the writers of this article showed in a 2013 study in the *Economic & Political Weekly*. Small modular reactor designs, such as those offered by the U.S.'s NuScale Power corporation, are likely to be even less economical since they lose out on "economies of scale".

### Hollow safety claims

The debate on liability also exposes the exaggerated safety claims made by suppliers. Westinghouse claims that a large release of radiation from an AP1000 reactor would happen only once in 50 million years. If reactors are so safe, why would nuclear vendors take extreme precautions to protect themselves from the consequences of an accident? If companies such as Westinghouse recognise that the risk of an accident is real and are unwilling to risk financial losses, why should Indian citizens who live near a reactor be willing to risk their lives and property?

Prime Minister Narendra Modi projects an image of a strong global leader. However, the government's announcement on the liability law is a revealing commentary on that message. When faced with pressure from the U.S. government, which puts the profits of U.S. corporations above all else, Mr. Modi's government seems unable to stand up for the basic rights and the safety of Indians.

NASA's astronauts Butch Wilmore and Suni Williams inside the International Space Station's Harmony module. AFP

# *NASA looks set to return Starliner astronauts days sooner*

**Reuters**

NASA on Tuesday swapped out the astronaut capsule it plans to use for an upcoming routine flight to the International Space Station, a scheduling move that will allow a slightly earlier return for two Starliner astronauts who have been on the station far longer than expected.

The U.S. space agency said mission management teams opted to use a previously flown SpaceX Crew Dragon capsule for its Crew-10 mission to the space station, instead of a new SpaceX capsule whose production it said has been delayed.

The decision moves up the Crew-10 launch to March 12, from the previous target of March 25. NASA said it would still need to do a flight readiness assessment of the previously flown Crew Dragon capsule, which is named Endeavor and has been used on three previous missions.

The return of two astronauts, Butch Wilmore and Suni Williams, who flew to the International Space Station on Boeing's faulty Starliner capsule last summer, has hinged on the arrival of the Crew-10's four-person crew in order to keep the station's American contingent staffed at normal levels.

The decision follows President Donald Trump's abrupt demand to SpaceX CEO Elon Musk last month to bring Wilmore and Williams back to Earth "as soon as possible," pleading for an end to their mission that in large part had already been decided on last year.

After Trump's demand, NASA affirmed its plan to bring home the astronauts, saying it would do so "as soon as practical." In its statement on Tuesday, the agency did not say its decision to

**The return of Wilmore and Williams has hinged on the arrival of Crew-10's four-person crew in order to keep the station's American contingent staffed at normal levels**

change the Crew-10 capsule was made to bring the Starliner crew home early.

"Human spaceflight is full of unexpected challenges," NASA's Commercial Crew Program head Steve Stich said in a statement, praising SpaceX for its flexibility.

Trump's call was an unusual intervention by a president into NASA's meticulously arranged ISS schedule and foisted Wilmore and Williams into an unlikely political spotlight.

Trump had blamed his predecessor Joe Biden for the astronaut's situation, though Biden had no involvement in the program. Musk, publicly accepting Trump's demand, also blamed Biden despite his space company's work with NASA to solve a spaceflight dilemma widely acknowledged to be caused by Boeing.

The spacecraft swap affects SpaceX's planned Fram2 private astronaut mission, which was expected to use the Endeavor capsule sometime this year for a polar-orbiting mission.

"We've lost the South Pole in the daylight," the mission's commander, Maltese crypto entrepreneur Chun Wang, wrote on X with a sad face emoji, replying to rumors about the Crew-10 decision. The mission will use a different Crew Dragon in SpaceX's fleet.

The Crew-10 decision is also expected to impact Axiom's planned Crew Dragon mission where it will fly government astronauts from India, Poland, and Hungary. Houston-based Axiom, which arranges private and government astronaut missions using Crew Dragon, did not immediately return a request for comment.

# AI can make drug-testing precise, and relevant to human biology

**Regulators and the pharmaceutical industry have traditionally banked on animal models' response to various compounds to assess whether a drug can proceed to human clinical trials. But there is a growing body of work suggesting we need to improve the quality of data available at this stage**

Surat Parvatam
Arvind Ramanathan

The responses of humans belonging to different populations around the world to drugs and diseases vary in ways that can't be captured in the responses of a homogenous, lab-bred animal population. PIXABAY

On January 6, the U.S. Food and Drug Administration (FDA) proposed draft guidelines on the use of artificial intelligence (AI) to assess the safety and effectiveness of drugs.

The influential body has said that in the last decade, the number of submissions from drugmakers that include an AI or machine-learning component has seen an exponential rise. There was only one such submission per year in 2016 and 2017, but in the next two years it tripled; in 2021, the FDA reported a remarkable 10-fold increase on the previous year alone with 132 submissions, including an AI and/or machine-learning component.

### Drug development pitfalls

It takes nearly 10 years and over a billion dollars to develop a drug using conventional (animal-based) processes, which also have a success rate of only 14%. Emerging technologies like AI provide opportunities for us to catalyse and improve the human-relevant drug-development pipeline.

For example, rats can eliminate some drugs from their bodies much faster than humans can, which means that for the same dose level, humans would be exposed to the drug for a longer duration. As a result, the data for a compound obtained by testing with rats will have to be adjusted for this skew.

The responses of humans belonging to different populations around the world to drugs and diseases also vary according to age, sex, preexisting medical conditions, and genetic variabilities, among other factors. It's often difficult to predict this range of responses from a homogenous, lab-bred animal population.

### Inputs to predictivity

Researchers today use AI across the breadth of the drug development cycle.

In the discovery phase, researchers comb through databases with thousands of compounds to select a few hundred promising candidates for a particular use case. Then they test these compounds on animals during preclinical research. The data for compounds that produce encouraging results in animal models are submitted to drug regulators for permission to conduct human clinical trials.

The compounds found to be safe and effective in these clinical trials – conducted in three phases depending on the requirement – are then released into the market following the Drug Controller-General's approval. In the post-marketing stage, the drug manufacturer monitors the drug's effects on the population, under an obligation to report adverse effects.

There are now AI tools that can digest data from a human adult about how their body absorbs, distributes, and eliminates a drug and based on that predict the response of vulnerable populations, such as children, whose participation in clinical trials raises thorny ethical and technical issues.

Another pain point in drug development that AI could surmount is predicting whether a drug could have unintended effects. In December 2024, researchers from the U.K. reported in the journal *Toxicological Sciences* a "safety toolbox" comprising a group of computational models that could predict the undesirable side effects of a chemical compound on the entire body or on specific organs the compound isn't designed to target.

This framework involves integrating multiple types of data, such as the level and manner of exposure to the substance (topical, oral, etc.), its structural properties, and any information about its chemical properties.

### Where do AI models fall short?

Despite the potential to overcome the barriers of conventional testing, AI comes with its own challenges. In particular, the reliability of data analysis performed by an AI tool depends on the quality of the data the model is trained with.

Participants at an FDA-sponsored workshop at Duke University in the U.S. in 2022 used the adage "garbage in, garbage out" to describe this problem. The use of biased and/or under-representative data of a target population will also compromise the output.

Another challenge is transparency. The inner workings of most AI models in use are not open to independent scrutiny, nor is the data used to train them easily accessible, so the models' performance can't be assessed as required.

### FDA's draft guidelines

The FDA has been open to the idea of using AI and its draft guidelines to present a stepwise framework to assess models' credibility. The text emphasises the importance of identifying questions of interest, the context for each question, and how a model will help address it. This is because a model developed to identify the risk of one adverse reaction to one drug based on previous clinical trials may not be equally good at identifying the risk of other reactions and/or to other drugs.

> AI tools can digest data about how a human body absorbs, distributes, and eliminates a drug and predict the response of vulnerable populations, such as children, whose participation in clinical trials raises thorny ethical and technical issues

The guidelines also stress the importance of assessing the risk AI models may pose. If a model concludes a patient is at low risk for an adverse reaction to a drug, an incorrect prediction could have life-threatening implications. Identifying the level of this risk is another parameter of importance. Axiomatically, improving the quality and quantity of data used to train the AI model and the identification of possible biases will strengthen the model's integrity and value.

AI models can be self-learning, their outputs can change based on new inputs, and they can constantly adapt without human intervention. In response, the FDA framework recognises a need to continuously monitor and provide detailed maintenance plans across the lifecycle of these models. Given the currently vigorous AI landscape, the draft guidelines encourage the industry to engage with the FDA to discuss and design appropriate ways to assess their AI models.

The guidelines focus on the use of AI in the preclinical stage in particular, where it is critical to understand if a compound of interest is safe enough to be approved for human clinical trials.

Regulators and the pharmaceutical industry have traditionally banked on animal models' response to the compounds for this assessment. But there is a growing body of work suggesting we need to improve the quality of data available at this stage as well as reduce animal suffering.

### From guidelines to adoption

The European Medicines Agency and the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (a.k.a. ICH) have released similar documents on the use of AI in drug development processes. But the FDA guidelines are notable because they focus on the use of AI to support decisions regarding the safety and effectiveness of a drug before starting human clinical trials.

In 2023, India passed the New Drugs and Clinical Trials (Amendment) Rules 2023. It allowed data generated by advanced computational models to be used to assess the safety and efficacy of new drugs, freeing researchers from relying on animal trials alone.

That said, guidelines issued by regulators can help harmonise (i) government policy, (ii) manufacturers' expectations and compliance burden, (iii) researchers' strategy, and (iv) consumer safety.

In effect, the guidelines serve as a fixed point in the shifting AI space, an anchor where all stakeholders can pause to take stock together, before making the next decision.

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# Average of ₹57 lakh spent by each candidate on LS poll campaign: data

The Hindu Bureau
NEW DELHI

Candidates in the 2024 Lok Sabha election each spent an average of ₹57.23 lakh for campaigning, according to an Atlas on last year's general election released by the Election Commission of India on Wednesday.

While the Congress's Shashi Tharoor reported the highest individual expenditure of ₹94.89 lakh, the Trinamool Congress's Pratima Mondal spent only ₹12,500.

**Maximum limit of poll expenses was revised in 2022, considering a rise in total electors, cost inflation index, and virtual campaigns**

**'Inbuilt red flags'**

Speaking at the release of the Atlas, Chief Election Commissioner Rajiv Kumar reiterated that the polling data system was robust, with inbuilt "red flags" to ensure that "nothing can go wrong".

Lakhs of officials, including booth-level officers, feed data into the system. "As a design, nothing can go wrong... The system throws up red flags," he said, adding that this makes the EC "extremely confident" that nothing can go wrong. If someone makes an error, the system will not accept it, he said.

The Opposition, led by the Congress, has been raising concerns about unusual numbers of additions and deletions in voters lists in some States like Maharashtra.

**Highs and lows**

According to the Atlas, Leader of the Opposition in Lok Sabha Rahul Gandhi spent ₹92.82 lakh on his campaign trail in Wayanad.

Three Karnataka MPs – Sunil Bose, B.Y. Raghavendra and E. Tukaram – were on the list of 15 MPs with the highest campaign expenditure. DMK MP from Coimbatore, Ganapathy Rajkumar P., was in the ninth position, having spent ₹92.96 lakh on his campaign. Those who kept their expenditure low, included Baramulla MP Engineer Rashid, who spent ₹2.10 lakh, and Union Minister Kiren Rijiju, who spent ₹20.67 lakh.

The amount of money candidates are permitted to spend on their campaigns is subject to a ceiling. The maximum limit of election expenses was revised in 2022, owing to a rise in the number of electors, cost inflation index, and virtual campaigns.

# Clauses in new Immigration Bill may bar foreigners' entry

**Vijaita Singh**
NEW DELHI

**The legislation could propose jail term of five years, or fines up to ₹5 lakh or both, for entering India without valid documents**

The Immigration and Foreigners Bill, 2025, which is expected to be introduced in the current session of Parliament, is likely to introduce for the first time, threat to national security and sovereignty as grounds to deny entry or stay to a foreign national in the country. It may also have provisions to bar the entry of a foreigner on basis of relations with a foreign state.

The proposed law could make the decision of the Immigration Officer final and binding. Earlier, too, foreigners were denied entry but the clause was not explicitly mentioned in any legislation or Rules.

The Bill is likely to repeal and replace the Foreigners Act, 1946; Passport (Entry into India) Act, 1920; and the Registration of Foreigners Act, 1939 – the three laws brought close to the First and Second World Wars. The Immigration (Carriers' Liability) Act, 2000 will also be repealed.

The four Acts had overlapping provisions and a necessity to repeal the Acts and enact a new comprehensive law was felt.

The proposed legislation was also framed to avoid overlapping of laws with relation to passports or other documents of persons entering or exiting India, including the requirement of visa and registration.

The Bill may also define functions of the Immigration Officer. Obligations of universities and other educational institutions, and those of medical institutions with regard to admitting foreigners may also be covered by the Bill. It is likely that the Bill will include provisions on burden of proof upon such persons to prove that they are not foreign nationals.

Although the Bureau of Immigration already exists, with the passing of the Bill, Immigration Officers and the bureau may get adequate legal backing.

The legislation could propose imprisonment of five years, or fines up to ₹5 lakh or both, for entering India without valid documents.

Using or distributing fraudulent travel documents may invite punishments such as two years' imprisonment, which may be extended to seven years. A fine of not less than ₹1 lakh, which may stretch to ₹10 lakh, may also be proposed.

# IMEC project gains traction as PM holds talks with Macron

**Warm greetings:** Prime Minister Narendra Modi with French President Emmanuel Macron in Marseille on Wednesday. AP

**Kallol Bhattacherjee**
NEW DELHI

India and France on Wednesday announced that they would continue to work closely to implement the India-Middle East-Europe Corridor (IMEC) project.

The project proposes to connect India to Europe through sea and land routes. A discussion on the project was held during Prime Minister Narendra Modi's two-day visit to France, where he spoke at the Paris AI Action summit and held talks with President Emmanuel Macron.

"The two leaders recalled the launch of the IMEC on the margins of the G-20 Summit in Delhi in September 2023 and agreed to work together more closely on implementing the initiative," said a joint statement issued after the visit.

IMEC, which involves the participation of Israel, had failed to make headway because of the Gaza conflict.

The French and Indian leadership highlighted the importance of the project for prosperity of India and Europe.

Foreign Secretary Vikram Misri told the media that after the AI summit, Mr. Modi reached Marseille on Tuesday.

"Marseilles will be the entry point for the whole European market, and IMEC will channel a lot of energy to Marseille," Mr. Macron said.

The two sides also agreed to develop nuclear reactors jointly. The joint statement said officials from both sides signed a letter of intent on production of small and advanced modular reactors. The two leaders described nuclear energy as an "essential part of the energy mix". The small modular reactors are factory-fabricated nuclear reactors that are smaller in size and capacity than the conventional nuclear reactors.

Mr. Modi and Mr. Macron jointly inaugurated the new Indian Consulate General in Marseille on Wednesday. Marseille will host the Mediterranean edition of the flagship discussion event of the Ministry of External Affairs - Raisina Dialogue - this year where stakeholders from multiple sectors are expected to participate.

After the inauguration of the Consulate General in Marseille, Mr. Modi recounted India's ties with Marseille as Indian soldiers were based there during the World War I. "President Emmanuel Macron and I inaugurated the Indian Consulate in this vibrant city, marking a new chapter in India-France ties. This consulate will serve as an important bridge, strengthening our cultural, economic, and people-to-people connections," said Mr. Modiafter the inauguration.

The joint statement recognised the "strategic location" of Marseille in the Mediterranean Sea, and the role that the port city will play in supporting "connectivity, sustainable growth trajectories and access to clean energy".