

# DAILY PT POINTERS

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## DeepSeek AI model jolts global tech landscape

**John Xavier**  
CHENNAI

A new player in the artificial intelligence (AI) race, the Chinese start-up DeepSeek, has created a buzz in global tech circles with the launch of its cutting-edge AI models, claiming they nearly match the capabilities of top industry leaders in the U.S. – all while being far more affordable. The company's AI model, DeepSeek-R1, has ignited a fresh debate over the shifting dynamics of the global AI market.

Monday night's trading

- DeepSeek, a Chinese AI startup, has launched its DeepSeek-V3 model, which is said to be on par with or superior to U.S. models at a fraction of the cost.
- Its AI Assistant, powered by DeepSeek-V3, has overtaken ChatGPT on the U.S. Apple App Store. The company's cost-efficient approach, using under \$6 million in Nvidia H800 chips, challenges the investments made by U.S. tech giants.
- Founded by Liang Wenfeng, who also co-founded the hedge fund High-Flyer, DeepSeek aims to develop Artificial General Intelligence (AGI).
- The startup has attracted top AI talent in China and has acquired thousands of Nvidia chips to build its advanced AI systems.

### The impact of classifying denotified tribes

How many denotified, semi-nomadic, and nomadic tribes have been comprehensively categorised by the Anthropological Survey of India and Tribal Research Institutes? What will be the impact on SC, ST and OBC reservations? How many communities were classified for the first time ever?

#### EXPLAINER

Abhinav Lakshman

#### The story so far:

The Anthropological Survey of India (AnSI) and Tribal Research Institutes (TRIs) across the country have for the first time comprehensively categorised 268 denotified, semi-nomadic, and nomadic tribes that were thought to have never been classified before. After a three-year study, the AnSI and TRIs have recommended the inclusion of 179 of these communities in the Scheduled Castes, Scheduled Tribes, and Other Backward Classes lists. At least 85 of these communities are being recommended for a classification for the first time ever. The study also found that 63 communities that had never been classified were "not traceable" anymore - meaning that they had likely assimilated into larger communities, changed their names, or migrated to other States.



Official recognition: Members of the Adi tribe in Siang, Assam had Pradesh on January 28, 2019.

#### Why was the study needed?

Ever since the Criminal Tribes Act of 1924 was repealed in August 1949, after which communities notified as "criminal" had been denotified, successive commissions have tried to classify these communities, starting with the First Backward Classes Commission headed by G.Ka. Kalkar. Since then, the Lokur Committee (1965), the Mandal Commission (1980), the Beike Commission (2006), and the Idane Commission (2017) have tried to

had noted that previous commissions had never been able to classify these communities, recommending strongly that the classification work be completed as soon as possible. To this end, the Prime Minister's Office constituted a Special Committee in February 2019, headed by the Vice-Chairperson of the NITI Aayog, consisting of Mr. Idane, Dr. J.K. Bajaj of the

"inability to take necessary action" on the speedy categorisation of these communities. "Delay in locating them would increase their suffering and they would not be able to get benefits of the prevailing schemes meant for the welfare of SC/STs," the House panel said.

S. Narayan, Professor Emeritus at the Institute of Social Sciences in New Delhi

classifications are bound to be different.

Further, community activists and experts like Dr. B.K. Lodhi, who also assisted the Idane Commission in its work, said that in the absence of a complete list of denotified, semi-nomadic, and nomadic communities across the country, it has been very difficult to organise the communities and its peoples. "Some are classified as SC, ST, OBC, some of this is also incorrect. And beyond this, there are hundreds that have not been classified."

#### What will be the impact?

Now that almost all denotified, nomadic, and semi-nomadic tribes are closer to being classified than ever before, one impact has been political. Community activists across U.P., Haryana, Madhya Pradesh, and Gujarat are pushing hard to question the premise of classifying these communities as SC, ST, and OBC altogether, with an eye on reservations.

Within the Development and Welfare Board for the denotified, Nomadic and Semi-Nomadic Communities, there are now two strands of thoughts. One calls for the completion of the classification process so that all denotified, nomadic, and semi-nomadic tribes get benefits meant for them as per the classification of SC, ST, or OBC, including that of reservation. The other calls for creating a separate classification altogether - for denotified tribes in the form of a Schedule in the Constitution. Secondly, depending on what action the government takes on the recommendations on this study, it will make it easier for State governments to initiate the process of inclusion if they so

#### THE GIST

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Community activists across U.P., Haryana, Madhya Pradesh, and Gujarat are pushing hard to question the premise of classifying these communities as SC, ST, and OBC altogether, with an eye on reservations.

While the AnSI and TRIs have completed the ethnographic study, this report remains with the Special Committee headed by the Vice-Chairperson of the NITI Aayog.

- The Anthropological Survey of India (AnSI) and Tribal Research Institutes (TRIs) have categorized 268 denotified, semi-nomadic, and nomadic tribes, recommending 179 for inclusion in SC, ST, and OBC lists.
- The study was needed due to past failures in classification since the repeal of the Criminal Tribes Act of 1924. Multiple commissions had tried but couldn't classify all communities.
- The Parliamentary Standing Committee highlighted the delays, which hinder access to welfare schemes. The classification debate is politically charged, with some pushing for separate recognition for these tribes. The final report is under scrutiny by a Special Committee, with government action expected soon.



# HEADLINES OF THE DAY



## The Hindu-GS3(Economy)Page9



### Union Budget: understanding its formulation and implications

There are three major components of the Budget — 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.

#### Key themes

Finance Minister Nirmala Sitharaman will present the Union Budget for the upcoming year on Saturday, February 1, 2025. The article, dated January 24, 2025, also discusses the various components of the Budget.

The Budget, which will be tabled in Parliament by Finance Minister Nirmala Sitharaman, will outline the Government's priorities on expenditure, taxes, receipts, 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. Based on their impact on assets and liabilities, total expenditure can be divided into capital and revenue expenditure. Capital expenditure is incurred with the purpose of increasing assets of a durable nature or of reducing existing liabilities. Consider the expenditure incurred for constructing new schools or new hospitals. All these are classified as capital expenditure as they lead to creation of new assets. Revenue expenditure involves any expenditure that does not add to assets or reduce liabilities. Depending on the nature of wages and salaries, subsidies or interest payments would be typically

development expenditure, otherwise services in which expenditure on transport, communication, rural development, agricultural and allied sectors. Expenditure on the social sector including education or health is categorised as social services. Again, depending on whether an asset is created or liability reduction, development expenditure can be further classified as revenue and capital expenditure. The receipt of the Government from three categories — corporate receipts, non-debt capital receipts and debt-creating capital receipts. Revenue receipts are receipts that are not associated with increase in liabilities and require revenue from tax and non-tax sources. Non-debt receipts are pure capital receipts that do not generate additional liabilities. The levy of tax and proceeds from other sources will be regarded as non-debt receipts since generating revenue from these sources does not directly increase liabilities. For example, interest on government securities that involves higher liabilities and future payment commitments of the Government. Fiscal deficit is the difference between total expenditure and the sum of revenue receipts and non-debt receipts. It indicates how much the Government is spending in net terms. Since positive fiscal deficit indicates the amount of expenditure over and above revenue and non-debt receipts, it can be further divided into debt-creating capital receipts. Primary deficit is the difference between fiscal deficit and interest payments. Revenue deficit is derived by

aggregate demand in the economy since it leads to purchase of private goods and services by the Government sector. All tax and non-tax revenue reduce net income of the private sector and thereby leads to reduction in private and aggregate demand. In the event of the unexpected deficit in revenue, the GDP growth rate and expenditure typically show a tendency to rise over time. Thus, the trend in absolute value of expenditure and receipts in the Union Budget are the meaningful indicators of the Budget. The trend in expenditure and revenue is analysed either by the GDP or as growth rate of the economy for the relevant year.

In India's case, its present fiscal rule is guided by the recommendations of the N.K. Singh Committee Report. Although for some situations under exceptional circumstances, it has done policy targets maintaining a specific level of debt-GDP ratio (lock target), fiscal deficit as a ratio (flexible target), and revenue deficit-GDP ratio (growth-linked target). Through both expenditure and revenue receipts can potentially act as policy instruments to meet specific set of fiscal rules, it is important to ensure policy responses to be differentiated independent of the expenditure requirement of the economy. Accordingly, in the present transitional framework in India, it is primarily the expenditure which is adjusted to meet the fiscal rules at given tax rates. Such an adjustment mechanism has at least two related, but analytically distinct implications for fiscal policy. First, independence of the nature of expenditure needed to enhance the economy or boost labour income, causing fiscal rules provide a cap on expenditure by imposing the above policy targets. Second, under any situation where the debt ratio or deficit ratio is greater than the targeted level, expenditure is adjusted in order to meet the policy targets. It is important, independent of the state of the economy and the need for expansionary fiscal policy, existing policy targets may lead the Government to reduce expenditure. In the state of the inadequacy of

- The Union Budget, presented by Finance Minister Nirmala Sitharaman, outlines the government's plans for expenditure, taxes, and economic transactions. Key components include:
- Expenditure: Divided into capital (asset-creating) and revenue (non-asset-creating) expenditure, further categorized into general, economic, and social services.
- Receipts: Includes revenue receipts (taxes), non-debt capital receipts (e.g., loan recovery), and debt-creating receipts (increasing liabilities).
- Deficit Indicators: Fiscal deficit (total expenditure minus receipts), primary deficit (fiscal deficit minus interest), and revenue deficit (fiscal deficit minus capital expenditure)..The Budget influences the economy by affecting aggregate demand, income distribution, and fiscal policy. Fiscal rules, based on the N.K. Singh Committee, set targets for debt, fiscal, and revenue deficits, potentially limiting government spending, especially during economic downturns. The current fiscal rules may need re-evaluation to address issues like unemployment and slow growth.

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### New study decodes when the Nicobarese people came to the island

For a long time, scientists believed the Austroasiatic ancestors of the Nicobarese community migrated to the island more than 11,000 years ago; the new study corrects this impression by taking a closer look at DNA mutations, showing that they arrived at the island around 5,000 years ago

Sushila Menon  
Specialist

More than half a million years ago, one of humanity's ancestors took a bold step and ventured beyond Africa, the cradle of humankind, in search of greener pastures. Since then humans have explored every habitable corner of the globe, often driven by the need to find new sources of food and to escape diseases and natural disasters.

Researchers have documented many migrations in great detail in the historical and archaeological records – but even now, some chapters are missing from this epic tale.

One part of the missing story was recently published in the European journal of Human Genetics. Scientists from India have reported finding the genetic heritage of the people of the Nicobar Archipelago in the Indian Ocean.

The team conducted a detailed analysis of genetic data collected from 1,559 individuals across South and Southeast Asia. They found ancestral ties between the Nicobarese and the Htin Mal community, a population from the Laos-Thailand region.

The Nicobarese were also found to have retained their Austroasiatic language roots – a language family spanning Southeast Asia – of the Khamtic branch.

"Almost 20 years ago, we collected DNA from tribes in the Andaman and Nicobar region. We could not gather much information from DNA as the Nicobarese population had we related them to some South Asian groups and estimated their age to be around 11,500 years," said Sankararam Thangaraj of the CSIR Centre for Cellular and Molecular Biology, Hyderabad.

As on-led the study with Genadness Chatterjee of Banaras Hindu University. "Since then, we have analysed many people within India and saw many advancements in technology," including the sequencing of one million human genomes. "Using these new techniques, we found that the Nicobarese are closer to recent Asian groups who migrated approximately 5,000 years ago," said Mr. Thangaraj.

**Uncovering the ancestry trail**  
The Andaman and the Nicobar Islands are separated by the Ten Degree Channel, which is around 120 km wide. Though they're close to each other, the peoples of the two islands have significantly different



A group of Nicobarese people gathered for a traditional dance performance on a wooden stage in the Nicobar Islands. (THE HINDU ARCHIVE)

#### THE GIST

Due to its geographical isolation, the ancient Nicobarese tribe has preserved its genetic identity without significant admixture with other populations.

By comparing the differences in mutations between the genetic ancestors and the migrated population, the scientists were able to trace their time of arrival at the Nicobar Islands.

But the unique social dynamics of the Nicobarese people still remains largely uncharted.

Islanders by analysing mitochondrial DNA, which is passed down by mothers to their children. They discovered that the indigenous tribal groups Ongg and Great Andamanese preserved two distinct maternal genetic lineages called M1 and M2, meaning they had a common ancestor. These lineages likely evolved in isolation for a long time, with a genetic history that is dated back to humans travelling along the Indian Ocean coast 50,000 to 70,000 years ago.

The study also revealed that Nicobarese were closely linked to Southeast Asian populations.

However, it couldn't say when exactly they set foot on Nicobar.

In the new study, rather than mitochondrial DNA, the researchers analysed biparental and uniparental genetic markers from 1,559 previously studied individuals and five newly collected samples from the Nicobarese population. Biparental genetic material is inherited from both parents and uniparental is from one parent.

**Earlier study of mitochondrial DNA**  
In an earlier study, the researchers analysed biparental and uniparental genetic markers from 1,559 previously studied individuals and five newly collected samples from the Nicobarese population. Biparental genetic material is inherited from both parents and uniparental is from one parent.

statistical tool that can assess complex genetic datasets and create simple visualisations that elucidate the genetic similarities and differences.

The results confirmed previously suggested links between the Nicobarese and Southeast Asian populations and also provided a higher resolution view of their genetic history by pinpointing their ancestral links to the Htin Mal.

**Correcting the timeline**  
For a long time, scientists believed the Austroasiatic ancestors of the Nicobarese population arrived on the island more than 11,000 years ago. The new study corrected this impression by taking a closer look at DNA mutations.

Some sections of human DNA can evolve and mutate over centuries, often under the influence of environmental factors – e.g. when a population moves to a new land with different weather

mutations between the genetic ancestors and the migrated populations, the scientists were able to trace their time of arrival at the Nicobar Islands, approximately 5,000 years ago, according to Mr. Thangaraj.

**Future ventures**  
Despite having genetic similarities with Southeast Asian groups, the lifestyle of the Nicobarese is entirely different, Mr. Thangaraj said. "I have visited the Andaman and Nicobar Islands and collected samples from the Nicobarese, so I've seen their lifestyle first hand. It is fascinating to compare them with linguistically similar groups elsewhere."

Indeed, the unique social dynamics of the Nicobarese people are still largely uncharted.

Mr. Thangaraj also singled out their isolation from pathogens. "For example, during COVID, the Nicobarese were protected unless someone from the mainland brought the virus," he said. "Unlike us, who have adapted to polluted and pathogen-filled environments, they might struggle with infections if exposed to other regions."

The team plans to dive further into the genetic adaptations of these isolated populations to uncover how natural

- A recent study published in the European Journal of Human Genetics uncovered the genetic heritage of the Nicobarese people from the Nicobar Archipelago. Researchers analyzed genetic data from 1,559 individuals across South and Southeast Asia and found that the Nicobarese are closely related to Southeast Asian groups, specifically the Htin Mal community from Laos-Thailand.
- The study also revealed that the Nicobarese retain their Austroasiatic language roots and migrated to the Nicobar Islands around 5,000 years ago.
- Unlike previous studies that suggested an 11,500-year migration, the new genetic analysis provided a more accurate timeline. The team also plans to investigate the genetic adaptations of isolated populations like the Nicobarese, particularly their immune responses to diseases.



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### What is the corpse flower?

The Hindu Bureau



On January 24, a rare plant known as the corpse flower bloomed in Sydney, Australia, for the first time in more than a decade. A similar flower bloomed

in New York in the U.S. on the same day.

In both instances, the plant emitted an odour likened to rotting flesh, delighting hundreds who queued for a whiff.

For the past week, curiosity seekers have been visiting the Sydney specimen, nicknamed "Putricia", at the Royal Botanic Garden. The Brooklyn Botanical Garden in New York dubbed its plant "Smelliot".

The two flowers are *Amorphophallus titanum* and *Amorphophallus gigas*. In each case, the oversize flower features fluted crimson petals and can measure more than a metre across with a pointed centre stalk that can top 3 metres. The plant typically doesn't bloom more than once every few years and lasts only about a day. A specimen has not bloomed in Sydney since 2010. The plant emits the foul odour to



The 'corpse flower' seen at the Royal Botanical Gardens in Sydney, Australia. REUTERS

When the flower opens, the stalk heats up to 37° C and periodically releases compounds like dimethyl trisulphide, isovaleric acid, and indole, which are responsible for the smell.

The emissions peak at evening and night, when carrion insects are most active, and their smell is discernible even a few hundred metres away.

(With agency inputs)

For feedback and suggestions

- the rare corpse flower bloomed in Sydney, Australia, for the first time in over a decade, with a similar flower blooming in New York on the same day. Known for emitting a foul odor resembling rotting flesh, the flower attracts carrion insects for pollination. The Sydney flower, named "Putricia," and the New York flower, "Smelliot," are both *Amorphophallus* species. These large flowers bloom infrequently, lasting only a day. The odor is strongest at night and can be detected from hundreds of meters away.
- The corpse flower, **native to the Indonesian island of Sumatra**, gets its name from the literal translation of the Indonesian phrase Bunga bangkai.
- Its species name, *Amorphophallus titanum*, meanwhile, means "titanic misshaped penis" in Ancient Greek.

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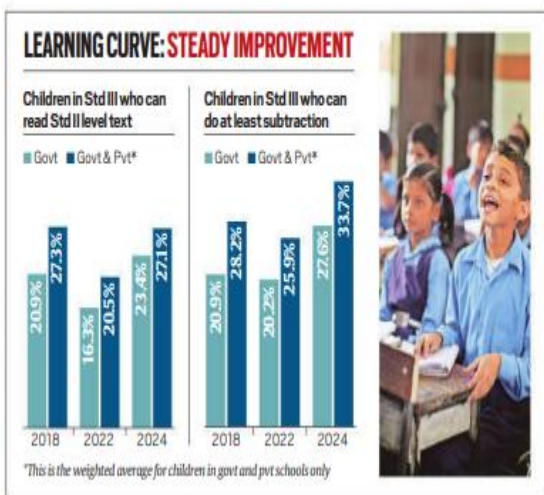
ANNUAL STATUS OF EDUCATION REPORT SHOWS GREEN SHOOTS

## Sharp gains in reading & math learning levels in schools across states since Covid slump

Govt schools lead way; 23.4% Class 3 children have basic reading skills – 20-year high

ABHINAYA HARIGOVIND  
NEW DELHI, JANUARY 28

IN THE first sign of recovery from the slump of the Covid pandemic, reading and arithmetic levels for children between the ages of 6 and 14 years have improved across states, with government schools leading the way. According to the Annual Status of Education Report (ASER) 2024 released on Tuesday, basic reading levels for Class 3 children enrolled in government schools have been the highest since the survey began



Behind sudden uptick: Govt's NEP push, 'new energy' in 2022

ABHINAYA HARIGOVIND  
& UMA VISHNU  
NEW DELHI, JANUARY 28

THE LATEST Annual Status of Education Report (ASER) comes bearing some rare good news: an improvement in learning levels across states, led largely by government schools.

For instance, the number of Class 3 children who can read a Class 2 textbook in government schools stands at 23.4%, up from 16.3% in 2022, the

year children came back to school after the pandemic years and the resultant shutdowns that led to big learning losses.

Across government and private schools, basic arithmetic levels have improved from the pre-pandemic year of 2018 – from 28.1% Class 3 students who could at least do a simple subtraction sum that year to 33.7% now.

While there is still a long way to go in terms of learning levels – the fact that 30% of children, across ages, can't read



democratic year of 2018. Overall reading levels, across both

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- The ASER 2024 report shows recovery in children's learning post-Covid. Key findings include:
- Reading Levels: 23.4% of Class 3 government school students could read a Class 2 textbook, up from 16.3% in 2022. Overall reading levels across schools increased to 27.1%, approaching pre-pandemic levels.
- Arithmetic Skills: 33.7% of Class 3 students could perform subtraction, an improvement from 25.9% in 2022.
- State-wise Improvements: Haryana, Maharashtra, Odisha, and Uttar Pradesh saw notable increases in reading levels, with Uttar Pradesh showing a 15-point rise.

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## Sebi's proposed 'when-listed' platform and how investors are likely to benefit from it

HITESH VYAS  
MUMBAI, JANUARY 28

THE SECURITIES and Exchange Board of India (SEBI) is planning to introduce a "when-listed" platform which will allow trading of shares of companies in a period between allotment of shares post the closure of initial public offering (IPO) bidding process and official listing on stock exchanges. The platform, according to Sebi Chairperson Madhabi Puri Buch, will facilitate the trading of such unlisted shares in a regulated manner.

### What is the platform on which Sebi is working?

In order to reduce grey market activity in stocks of companies that have allotted shares to investors after the completion of the IPO bidding process but are awaiting listing on bourses, the capital markets regulator is working on a "when-listed" facility.

"We are actively considering "when-listed" trading. Today, we are at T+3 (trading plus three working days) from closure of the issue to listing, but even in those three days there is a lot of "kerb trading" (grey market trading). So, we feel that if anyway investors do that (kerb trading), why not give them an opportunity (to trade) in a proper regulated way?" Buch recently said.

It is the day when an IPO closes for subscription. Kerb trading refers to trading outside the ambit of stock exchanges post official market hours. "Those three days where there is (trading in) grey or black market, we don't want that," Buch said, adding that the regulator was working with stock exchanges to introduce the "when-listed" platform.

### The current timeline

At present, once the bidding process for an IPO closes, shares have to be listed on bourses in trading plus three (T+3) working days.

### Sebi is planning to introduce a "when-listed" platform which will allow trading of shares of companies in a period between allotment of shares post the closure of IPO

The allotment of shares has to be done on T+1 day. In the period between the allotment of shares and listing day, investors trade in the grey market — an unregulated risky market. It is this pre-listing grey market trading activity which the Sebi wants to reduce.

### What is grey market?

Grey market refers to an unofficial trading of securities even before being listed on stock exchanges. This is an unregulated market and works on demand and supply. Investors purchase or sell shares notionally in the grey market even before they get

listed. The grey market is a cash market and there is no delivery of shares. Many retail investors also look at the premium offered in the grey market on shares of a company which has launched an IPO, before considering investing in the offer.

### How does grey market trading in IPO happen?

Since the probability of getting shares allotted in an IPO is thin, most investors, who are keen to buy shares of a company, enter into the grey market. The day a company announces its plan to launch an IPO, grey market activity for such a company's shares begins. There is a different set of brokers dealing in the grey market only. After arriving at a price band for an IPO, these grey market operators then fix a premium over and above the price band.

For example, if the price band for an IPO in the grey market is Rs 90-100 per share, the premium would be Rs 10, Rs 20, or Rs 30 higher. Once the premium is fixed, investors send their bids to

grey market operators for either buying or selling.

For settlement of grey market trades, the opening price of share of a company on the official listing day is considered. If on the listing day, the stock opens higher than the grey market purchase price, grey market operator would be obliged to pay the difference between the opening price and the grey market purchase price to investors. In case of a lower opening than the purchase price, investors bear the loss.

### How would 'when-listed' help investors?

The Sebi Chairperson said that as soon as the allotment of shares in an IPO is over, the entitlement to that share gets crystallise, which means that investors have the right to sell that entitlement.

"The idea is that whatever the grey market (trading) is going or right now in the pre-listing period, we think that's not suitable. If you got your allotment and you want to sell it, sell it in the organized market," Buch said.

- Sebi plans to introduce a "when-listed" platform to allow trading of shares between the IPO bidding closure and the official listing, aiming to reduce unregulated "grey market" trading. Currently, there's a gap between share allotment (T+1 day) and listing (T+3 days), during which grey market trading happens. This unregulated market involves buying or selling shares at a premium before the official listing, with investors hoping to profit if the stock opens higher. Sebi's platform would provide a regulated way to trade during this period.