

# DAILY PT POINTERS

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## India-Iran 10-year pact on Chabahar faces 'potential risk' of sanctions: U.S.

**Suhasini Haidar**  
NEW DELHI

The new 10-year agreement between India and Iran to develop the Chabahar port carries the “potential risk” of sanctions, the U.S. State Department said on Tuesday, casting a cloud over whether the special exemption India had received from the U.S. in 2018 will still be applicable for the next phase of development and invest-



Officials during the signing of the contract on Monday. PTI

be under the scanner if the U.S. decides against ex-

port,” U.S. State Department spokesperson Vedant Patel said. “U.S. sanctions on Iran remain in place and we’ll continue to enforce them,” he said, adding that all entities considering business deals with Iran “need to be aware of the potential risk that they are opening themselves up to and the potential risk of sanctions”.

The statement by the U.S. is significant as India has thus far managed oper-

- The US State Department has warned India about the potential risk of economic sanctions that any entity considering a business deal with Iran faced after New Delhi signed a 10-year deal with Tehran to operate the Chabahar port.
- India signed a 10-year agreement with Iran to operate and manage the Chabahar Port, located close to Iran’s southeastern border with Pakistan.
- India and Iran have projected the port as a key hub for the 7,200-km-long International North South Transport Corridor for moving freight between India, Iran, Afghanistan, Armenia, Azerbaijan, Russia, Central Asia and Europe, bypassing Pakistan.



## The Hindu-S&T(GSIII)(Page 5)

### 'NISAR satellite can monitor tectonic movements accurately'

The satellite is likely to be launched later this year; it can fully map the earth twice a month, measure water bodies, greenery, snow cover, track agricultural changes, desertification, and aid in the study of climate-related issues, says ISRO Chairman

INTERVIEW

S. Somanath

T.S. Subramanian



Amid the hectic activity at the Indian Space Research Organisation (ISRO) ahead of its NISAR satellite launch, the space docking experiment (Spadex) this year-end, and the Gaganyaan mission, *The Hindu* spoke to ISRO Chairman S. Somanath. Excerpts:

**What is unique about NISAR (NASA-ISRO Synthetic Aperture Radar) satellite? We are going to launch it from Sriharikota. In what way will NISAR benefit India and the U.S.?**

This is a Synthetic Aperture Radar satellite with two bands – S-band and L-band. The S-band payload

tion cover and snow cover. It, therefore, basically looks at the whole of the earth in terms of surface, water, greenery and all of that. It gives full coverage of the earth two times a month.

We can study climate change-related issues, agricultural changes through patterns, yield, desertification and continental movements precisely. It can measure tectonic plate movements accurately. So a lot of geological, agricultural and water-related observations can be obtained

to go in July but it may go only in October-November.

**What is the problem?**

I cannot tell you because it is on the spacecraft on the U.S. side. They wanted to do some corrections. So they have taken it back.

**What are the features of Chandrayaan-4, which will be a sample-return mission?**

Chandrayaan-4 is currently a concept we are working on. It is part of a series of

drayaan-3. We do not have a rocket capable of taking such a satellite [to the moon].

So we have devised a new method by which Chandrayaan-4 [spacecraft] can go there, drill, take samples and bring them to the earth. The detailed design of Chandrayaan-4 is going on. We have to go to the government to seek approval.

**The Chinese sent a spacecraft to the moon some days ago to bring back soil samples...**

I have nothing to say on it.

**When will you do the Spadex (space docking experiment, which will entail two satellites docking in space)?**

We are targeting this year.

**What have you done so far in the project?**

Docking is one of the technologies required to be demonstrated – autonomous docking. That is why we are launching this mission.

**The U.S. has invited an Indian astronaut to fly to the International Space Station (ISS). Of the four astronauts selected for the Gaganyaan mission, will you send one to the ISS?**

Yes. That is our plan. One of them should fly [to the ISS]. We are planning to have that this year itself.

**At what stage is the Gaganyaan project?**

Right now, the helicopter air drop test work [of the crew module] is going on at Sriharikota. So all of them are there now.

**Is the training of the four astronauts still going on in Bengaluru? They had completed**

- NISAR is a joint Earth-observing mission between NASA and the Indian Space Research Organization (ISRO) with the goal to make global measurements of the causes and consequences of land surface changes using advanced radar imaging.
- NASA and ISRO are providing two radars that are optimized each in their own way to allow the mission to observe a wider range of changes than either one alone.
- It carries L and S dual band Synthetic Aperture Radar (SAR), which operates with Sweep SAR technique to achieve large swath with high resolution data. The SAR payloads mounted on Integrated Radar Instrument Structure (IRIS) and the spacecraft bus are together called an observatory

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GETTY IMAGES

### On the importance of regulatory sandboxes in artificial intelligence

Regulatory sandboxes have become a significant instrument in various countries, used to evaluate innovations within a defined and monitored time frame while being subject to regulatory oversight and controlled constraints

Anhita Chaurha

The advancement of Artificial Intelligence (AI) technologies has posed both unprecedented opportunities and complex challenges for societies worldwide. As AI applications continue to proliferate across industries such as healthcare, transportation, finance, and more, concerns have emerged regarding ethical implications, data privacy, and potential risks associated with their deployment. In response, many governments and regulatory bodies have turned to innovative approaches such as "AI regulatory sandboxes" to strike a balance between fostering AI innovation and ensuring responsible development.

Regulatory sandboxes have become a

While the inception of the first formal regulatory sandbox is often attributed to the Financial Conduct Authority in the U.K., numerous other nations have subsequently introduced or announced similar initiatives to assess innovations spanning various industries. According to data from the World Bank, as of November 2020, there were approximately 73 regulatory sandboxes, both announced and operational, within the financial sector across 57 jurisdictions. In India, all financial sector regulators, including the Reserve Bank of India, Securities and Exchange Board of India, Insurance Regulatory and Development Authority of India, Pension Fund Regulatory and Development Authority, and International Financial Services Centre Authority, have launched their respective regulatory sandboxes. Expanding beyond finance, Karnataka has

sandbox provides a controlled environment for experimentation, offering invaluable insights into AI technologies capabilities and limitations while fostering collaboration between innovators and regulators. Additionally, it promotes transparency and accountability by requiring participants to disclose information about their AI models, addressing concerns about opacity and enabling tailored regulations. Furthermore, by mandating risk assessments and safeguards, the sandbox encourages responsible innovation, mitigating potential societal impacts of AI applications and nurturing a culture of ethical development within the industry. Article 53 of the European Union's AI Act, has the provision of a regulatory sandbox to test technology before making it mainstream. Additionally, Spain became the first European country to

vision through seven working groups. The latest proposal of the Digital India Act, 2021 also talks about regulating AI by creating a separate set of laws and regulations. India's interest in regulating AI is grounded in a multifaceted approach encompassing economic ambitions, ethical considerations, job creation, industrial transformation, and overall societal welfare. As a global technology hub, the chair of the Global Partnership on Artificial Intelligence and the Delhi Declaration, India aspires to foster innovation in alignment with its cultural and ethical values. A comprehensive regulatory sandbox can be envisioned to guide businesses, researchers, and policymakers, steering AI development towards sustainable growth. A regulatory sandbox should not be viewed as an approach to directly govern

- Regulatory sandbox refers to live testing of new products or services in a controlled regulatory environment. It acts as a "safe space" for business as the regulators may or may not permit certain relaxations for the limited purpose of testing.
- Regulatory sandboxes have become a significant instrument in various countries, used to evaluate innovations within a defined and monitored time frame while being subject to regulatory oversight and controlled constraints

### Hepatitis A outbreak in Kerala: 12 deaths so far, 4 dists on alert

**SHAJU PHILIP**  
THIRUVANANTHAPURAM,  
MAY 14

KERALA IS seeing its worst outbreak of the Hepatitis A virus in recent years, with the state reporting 1,977 confirmed cases and 12 deaths in the first four-and-a-half months of this year, government data showed.

Apart from the confirmed cases, 5,536 suspected cases have been reported in the state this year, and 15 more deaths are suspected to have been caused by the virus.

The Hepatitis A virus (HAV) affects the liver, and is transmitted through contaminated food and water, or through direct contact with an infectious person.

State Health Minister Veena George has put out an alert for the four districts – Kozhikode, Malappuram, Thrissur and Ernakulam – from where the most number of cases were reported. "Directions have been issued to strengthen grassroots-level action plans in these districts. Water sources in all affected areas will be chlorinated, and restaurants have been told to supply only boiled water. Eateries will be inspected to ascertain whether all employees have mandatory

health cards," she said.

According to state health department data, the number of cases reported until May 13 this year is higher than the number reported in the whole of 2023 (1,073 cases), 2022 (231), 2021 (114), 2020 (464), 2019 (1,620), 2018 (1,369), and 2017 (988).

Public health expert Dr N M Arun said the quality of water in the state has come down significantly in recent years. "HAV mainly spreads through the faeces of infected persons. In many places, leaky water pipelines get exposed to waste pipelines. This becomes glaring during the summer, when water supply becomes erratic," he said.

One of the worst-affected areas is Vengoor panchayat in Ernakulam, where around 200 people have been infected with HAV since April 17. The panchayat has seen one death and 41 people are currently in hospital, where the condition of four of them is said to be critical.

Panchayat president Shilpa Sudheesh said the health department has found that the outbreak there was caused by contaminated water supplied by the state water authority. "There was no proper chlorination of the water," she said.

- Hepatitis A is an inflammation of the liver caused by the hepatitis A virus (HAV).
- The virus is primarily spread when an uninfected (and unvaccinated) person ingests food or water that is contaminated with the faeces of an infected person.
- The disease is closely associated with unsafe water or food, inadequate sanitation, poor personal hygiene and oral-anal sex.
- Infection is common in low- and middle-income countries with poor sanitary conditions and hygienic practices, and most children (90%) have been infected with the hepatitis
- There is no specific treatment for hepatitis A. Recovery from symptoms following infection may be slow and can take several weeks or months. It is important to avoid unnecessary medications that can adversely affect the liver, e.g. acetaminophen, paracetamol.



## Indian Express-Health(GSII)/S&T(GSIII)-Page 12

### New FLiRT variant of the Covid virus — should you worry?

ANKITA UPADHYAY & ANONNA DUTT  
NEW DELHI, MAY 14

THE NEW coronavirus variant called KP.2 — nicknamed FLiRT — that has been linked to rising cases of Covid-19 in the United States, the United Kingdom, and South Korea, has been in circulation in India since November 2023, genomic surveillance data show. About 250 KP.2 sequences have been reported so far by INSACOG, the country's genome sequencing consortium.

#### What is the KP.2 variant of the Covid-19 virus?

KP.2 is a descendant of the JN.1 variant of the virus. It is a sub-variant of the Omicron lineage with new mutations. FLiRT, the nickname of KP.2, is based on the letters representing two immune escape mutations that allow the virus to evade antibodies.

Genomic scientist Dr Vinod Scaria said: "These two mutations on the spike protein disrupt the major sites on the spike protein

where antibodies bind and neutralise the SARS-CoV-2 virus. These mutations allow the virus to escape antibodies."

#### What do the genomic data on KP.2 from India show?

A little more than half of the 250 KP.2 genomes sequenced by INSACOG — 128 sequences — were from Maharashtra. The highest number of KP.2 sequences were found in March.

India has been reporting the highest proportion of KP.2 sequences in the world, global data show. KP.2 sequences made up 29% of Covid-19 sequences uploaded by India to the Global Initiative on Sharing All Influenza Data (GISAID), the world's largest repository of these sequences, over the last 60 days.

However, JN.1 continues to be the dominant variant of SARS-CoV-2 in the country. There were 679 active cases of Covid-19 in India on May 14, according to Union Health Ministry data, and one death — in Delhi — with Covid was recorded.

#### Can KP.2 cause severe disease?

FLiRT is characterised by its ability to evade immunity from vaccines and previous infections. Its symptoms are similar to those of earlier variants, including fever, cough, fatigue, and digestive issues.

Experts are watching the variant closely, but they are not very concerned at the moment. "There is no need to worry," Dr Anurag Agarwal, dean of the Trivedi School of Biosciences at Ashoka University, said. "These [immune escape] mutations [like the ones on FLiRT] have been seen before."

The US Centers for Disease Control and Prevention notes that there are currently no indicators suggesting that KP.2 would cause more severe illness than other strains.

#### However, could KP.2 drive up infections?

Yes, FLiRT has a heightened transmission rate and, like its parent JN.1, it is likely to drive a wave of infections, Dr Scaria said. Also, the infections are likely to spread silently — be-

cause without severe symptoms, most people are unlikely to get themselves tested.

Dr Rajesh Chawla, senior consultant, pulmonology and critical care at Indraprastha Apollo Hospital in Delhi, said given the likelihood of easy spread of the virus through respiratory droplets, there is need to take stringent precautions, especially for those with a compromised immune system.

Senior citizens are vulnerable to severe illness due to factors such as age-related physiological changes, decreased immune function, and the presence of comorbidities.

Research indicates that adults aged 60 and older, especially those with pre-existing medical conditions like heart disease, lung disease, diabetes, or cancer, are more likely to experience severe and potentially fatal Covid-19 infections compared to other age groups.

People who are 65 and older, or immunocompromised, and pregnant women are the most vulnerable.

#### What are the symptoms of KP.2 infection?

This variant, like many of its Omicron predecessors, mainly affects the upper respiratory tract. "There is no documented difference in presentations," Dr Scaria said.

Dr Chawla said that those affected report fever or chills, cough, sore throat, congestion or runny nose, headache, muscle aches, difficulty in breathing, fatigue, loss of taste or smell, brain fog, feeling less wakeful and aware, and gastro-intestinal symptoms including upset stomach, mild diarrhoea, and vomiting.

Hospitalisation rates for patients with these symptoms were not higher than usual, Dr Chawla said.

#### How can infection be prevented?

Preventive measures are the same as the ones that have been advised since the beginning of the Covid outbreak four years ago. Social distancing and the use of well-fitting respirators like N95s or KN95s in indoor public settings protect against all variants of the

#### Covid-19 virus.

Increased air flow and filtration in indoor spaces also help reduce the concentration of virus particles. Vulnerable groups and those living in areas where the infection is in circulation should be especially careful.

#### Do we need booster shots of Covid-19 vaccines?

Most Covid-19 vaccines available in India are aimed at the original variant of the virus, so additional shots are unlikely to help.

"In late April, the World Health Organisation's Covid vaccine advisory group advised the use of JN.1 lineage as the antigen for upcoming vaccine formulations, as the FLiRT variants are within the JN.1 family. However the Indian vaccines are not updated with the JN.1 variant, and therefore booster doses in India are unlikely to be effective," Dr Scaria said.

Dr Agarwal said that most Indians do not need a booster because they have probably already had repeated infections, including silent infections with JN.1.



- KP.2 and KP1.1 sublineages are descendants of the JN.1 variant of the SARS-CoV-2 virus with two new added spike mutations. They are nicknamed the FLiRT group of variants (labelled so because of their technical names,
- The FLiRT variants, especially KP.2, appear to have increased transmissibility compared to previous Omicron sub variants.
- The symptoms associated with FLiRT infection mirror those of other Omicron sub variants, including sore throat, cough, fatigue, nasal congestion, runny nose, headache, muscle aches, fever, and potential loss of taste or smell,"

## Indian Express: S&T (GSIII)-page 12

### WHAT IS GPT-4o, OPENAI'S LATEST, MOST POWERFUL AI MODEL YET

**BIJIN JOSE**  
BENGALURU, MAY 14

OPENAI on Monday introduced its latest large language model (LLM) called GPT-4o, billed as its fastest and most powerful AI model so far. The company claims that the model will improve its AI chatbot ChatGPT and make it easier to use.

Until now, OpenAI's most advanced LLM was GPT-4, which is only available to paid users. However, the GPT-4o will be freely available.

**What is GPT-4o?**

GPT-4o ('o' stands for 'Omni') has been developed to enhance human-computer interactions. It lets users input any combination of text, audio, and image, and receive responses in the same formats. This makes GPT-4o a multimodal AI model — a significant leap from previous models.

It could assist users with a variety of tasks, from real-time translations to having real-time spoken conversations. OpenAI said that the new updated version of ChatGPT will also have updated memory capabilities, and it will learn from its previous conversations with users.

GPT-4o will be made available to the public in stages.

**What is the technology behind it?**

combination of three different models, transcription, intelligence, and text-to-speech, while GPT-4o is a single model that allows for a more holistic processing and understanding of inputs. For example, GPT-4o can understand tone, background noises, and emotional context in audio inputs at once. This was a big challenge for earlier models.

Another leap is in areas of speed and efficiency. GPT-4o responds to queries as fast as a human does in conversation, in around 232 to 320 milliseconds.


**Why does all this matter?**

The AI race is intensifying, with tech giants Meta and Google working towards building more powerful LLMs and bringing them to their products. GPT-4o could prove beneficial for Microsoft, which has invested billions into OpenAI, as it can now embed the model in existing services like its search engine.

The new model also came a day ahead of the Google I/O developer conference, where Google is expected to announce new updates to its Gemini AI model.

**What are GPT-4o's limitations?**

On its official blog, OpenAI said that GPT-4o is still in the early stages of exploring the potential of unified multimodal interaction, meaning certain features like audio outputs are initially



- OpenAI introduced its latest large language model (LLM) called GPT-4o on Monday (May 13), billing it as their fastest and most powerful AI model so far. The company claims that the new model will make ChatGPT smarter and easier to use.
- **GPT-4o (“o” stands for “Omni” here)** is being seen as a revolutionary AI model, which has been developed to enhance human-computer interactions. It lets users input any combination of text, audio, and image and receive responses in the same formats.
- GPT-4o is capable of interacting using text and vision, meaning it can view screenshots, photos, documents, or charts uploaded by users and have conversations about them.
- The GPT-4o also features enhanced audio and vision understanding

# India volatility index rallies: What does it mean for investors?

HITESH VYAS  
MUMBAI, MAY 14

INDIA VIX, which is an indicator of the market's expectation of volatility over the near term, has surged past the 21 mark. The rise in the India VIX shows that fear among traders or market participants on the expected volatility is more now as compared to 15 days earlier. Currently, the fear among the market players is coming from the outcome of the ongoing Lok Sabha elections.

### What is the Volatility Index?

The Volatility Index, VIX or the Fear Index, is a measure of the market's expectation of volatility over the near term. Volatility is often described as the 'rate and magnitude of changes in prices' and in finance often referred to as risk. Usually, during periods of market volatility, the market moves steeply up or down and the volatility index tends to rise. As volatility subsides, the Volatility Index declines. The Volatility Index is a measure of the amount

### INDIA VIX

■ India VIX is a volatility index computed by the NSE based on the order book of NIFTY Options

■ For this, the best bid-ask quotes of near and next-month NIFTY options contracts which are traded on the F&O segment of NSE are used

market volatility over the next 30 calendar days. The higher the India VIX values, the higher the expected volatility and vice versa, as per NSE.

'VIX' is a trademark of the CBOE, and Standard & Poor's has granted a license to NSE, with permission from the CBOE, to use such a mark in the name of the India VIX and for purposes relating to the India VIX.

### Why has India VIX surged?

In May so far, the India VIX has risen by around 53 per cent to above 20. On

Agarwal, Senior Vice President - Derivatives Research, Kotak Securities. A high number indicates participants are getting more cautious and expect volatility as the event unfolds.

India VIX reflects the expected volatility and typically rises ahead of events like elections that could have a major impact on the market's trajectory. As expectations of outcome keep changing, VIX also keeps rising, said Deepak Jasani, Head of Retail Research, HDFC securities Ltd. "However this time around though the VIX has risen, it has risen at a pace slower than in the previous elections as there was lower uncertainty about the outcome when the elections began," he said.

### What is the outlook on India VIX?

According to Geojit Financial Services Chief Market Strategist Anand James the behavior of India VIX now has a lot of similarities to the period shortly before the 2019 electoral results announcement. Then too, markets had come off peaks in March, and VIX shot up to 28.6. The main difference is that prior to this, VIX was in a 20-14

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- The Chicago Board of Options Exchange (CBOE) was the first to introduce the volatility index for the US markets in 1993 based on S&P 100 Index option prices. In 2003, the methodology was revised and the new volatility index was based on S&P 500 Index options

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## PIB-Economy(GSIII)

### IndiaSkills 2024: India's Biggest Skill Competition to Commence in New Delhi

Over 900 Candidates to Participate in 61 Skills

Posted On: 14 MAY 2024 8:43PM by PIB Delhi

The IndiaSkills Competition 2024 – the country’s biggest skill competition designed to demonstrate the highest standards of skilling is all set to commence on 15th May 2024. The Ministry of Skill Development and Entrepreneurship (MSDE) has organised an inauguration ceremony at Yashobhoomi, Dwarka, New Delhi which will witness the participation of over 900 students from more than 30 states and Union Territories and over 400 industry experts.

The four-day-long IndiaSkills will allow participants to showcase their diverse skills and talent on a national platform across 61 skills – from traditional crafts to cutting-edge technologies. While 47 skills competitions will be held onsite, 14 will be held offsite in Karnataka, Haryana, Uttar Pradesh, and Gujarat keeping in mind the availability of best infrastructure. The students will also participate in 9 exhibition skills such as Drone-Film making, Textile-Weaving, Leather-Shoemaking, and prosthetics-makeup.

The students participating in the national-level competition have been trained in ITIs, NSTIs, Polytechnics, institutes of engineering, institutes of nursing, and institutes of biotechnology. This is a testament to the international-standard training Indian youth are receiving in the existing skill network.

Winners of IndiaSkills, with the help of the best industry trainers, will get prepared for the WorldSkills Competition scheduled to take place in Lyon, France in September 2024, which will bring together 1,500 competitors from over 70 countries.

Talking about the event, Shri Atul Kumar Tiwari, Secretary, Ministry of Skill Development and Entrepreneurship (MSDE) said that the IndiaSkills Competition opens new avenues of opportunity for the skilled youth, empowering them to dream beyond conventional boundaries and showcase their skills on the global stage. It also celebrates the invaluable role of skills and craftsmanship in nation building, while also symbolising the intrinsic value of skill development in shaping the future of the nation amidst rapid technological advancements and dynamic global trends, he said.

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