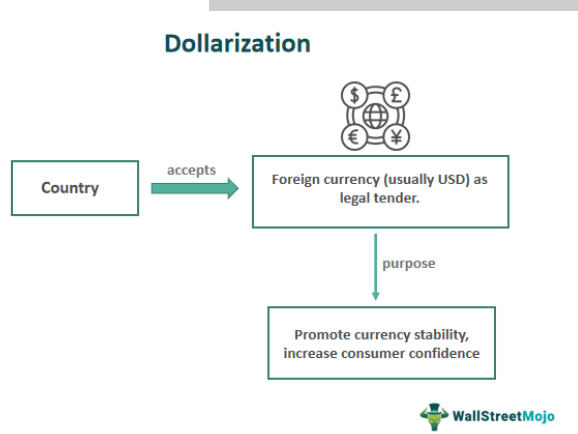


Dollarization in Argentina



- Javier Milei, the recent winner of Argentina’s presidential election
- The self- confessed “anarcho-capitalist” pledged in his campaign to replace Argentina’s currency the peso with the dollar, to eliminate the Central Bank and to slash government spending.

Why dollarization?

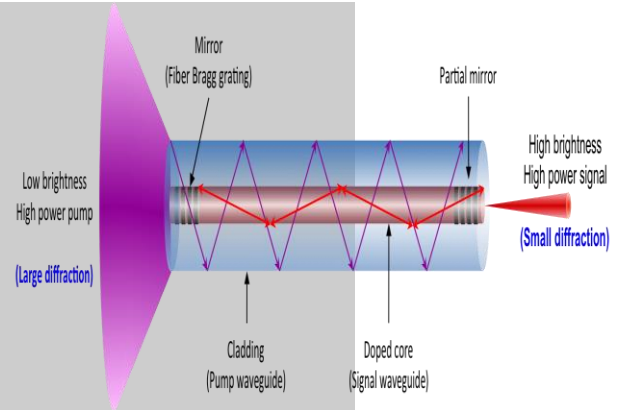
- Dollarization can act as a solution to hyperinflation by breaking the feedback link between rising prices and rising money supply.
- If the domestic currency is replaced by dollars, so the theory goes, money supply can no longer be controlled by vested political interests who can increase spending for political ends.
- The incessant rise of prices would be forced to moderate since consumers would no longer be able to access

currency easily, thus slowing down consumption demand.

- Dollarization can also have positive effects on growth.
- Since a small economy can only access dollars through foreign trade and/or capital inflows, it would incentivize the economy to focus on export successes and easing conditions for foreign capital, who would be more willing to invest in an economy with a stable currency.
- The stable value of the dollar would ensure that economic agents both foreign and domestic would be able to make long term plans regarding economic activity, plans that would otherwise not be possible under a currency that rapidly lost value.
- There are some potential problems.
- The adoption of dollars as a currency implies that economies lose an important source of policy leverage, with monetary policy now unable to control money supply.
- On the foreign trade front, countries would no longer be able to take recourse to depreciation to boost exports, focusing only on export promotion to stave off downturns.
- Some proponents of dollarization see this as a positive outcome, since it would ensure the government

resorts to productivity boosting methods to combat recessions, instead of changing exchange rates.

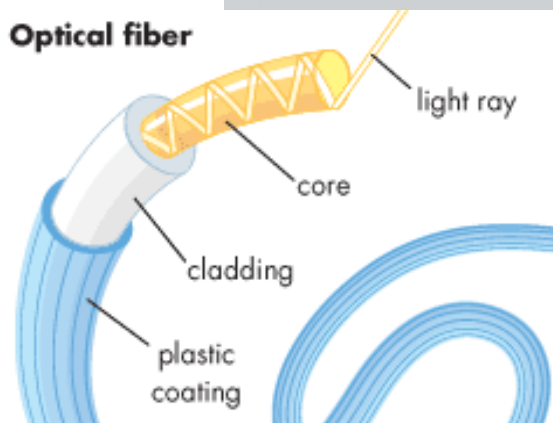
- The dangers of adopting an external currency without the ability to chart independent policy can be seen in the case of Greece.
- The adoption of the euro fueled growth in Greece, with capital inflows rising and tourism booming on the back of a stable currency.
- However, in the wake of the Eurozone crisis, Greece was bereft of both fiscal and monetary policy space, with monetary policy being determined by the European Central Bank (ECB) and fiscal policy restrained as a precondition for adopting the Euro.
- The Hindu



What is an optical fibre?

- Optical fibres are made of thin cylindrical strands of glass.
- The diameter of a typical fibre is close to the diameter of a human hair.
- These fibres can carry information, such as text, images, videos, telephone calls, and anything that can be encoded as digital information, across large distances almost at the speed of light

Optical fibre How do optical fibres work?



- Light is an electromagnetic wave with a spectrum of frequencies.
- Visible light, Xrays, radio waves, and thermal radiation (heat) all lie on this spectrum. Humans see the world around us via sunlight, but it took us a long time to control and guide light through fibre optic cables or “light pipes” to send coded signals.
- When a beam of light falls on a glass surface, it passes through partially

while the rest is reflected away. When it passes through, its path bends because the refractive index of glass is different from that of air.

- The refractive index is the property of a medium that determines how fast light can travel in it.
- When a beam travels in the reverse direction, that is from glass to air, it's possible that it won't enter the air.
- Instead, it will be completely reflected back within the glass.
- This phenomenon, known as total internal reflection, is the basis of guiding light across long distances without a significant loss of optical power
- A fibre optic communication system consists of three parts a transmitter which encodes information into optical signals (in the form of rapidly blinking light pulses of zeros and ones); an optical fibre that carries the signal to its destination; and a receiver which reproduces the information from the encoded signal.
- Optical waves allow a high data transmission rate, up to several terabits per second in a single fibre.

The Hindu

National mission on Quantum technologies

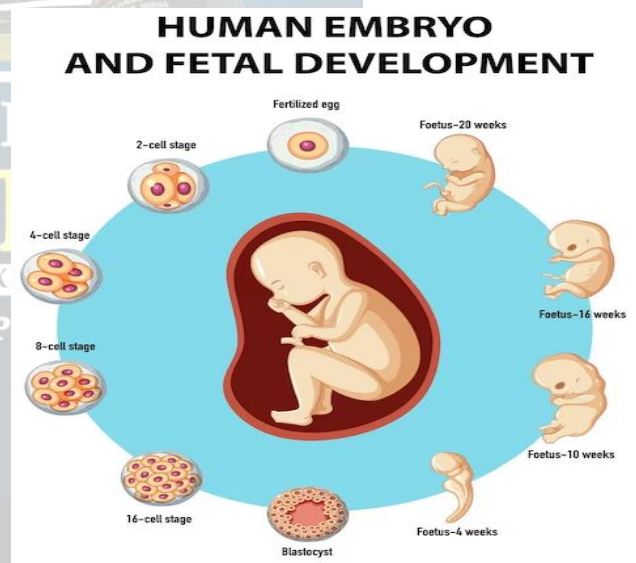
The infographic is titled "National Mission on Quantum technology and its applications" and is part of the "UNION BUDGET 2020". It features a central image of a hand holding a glowing quantum network. The text is organized into several bullet points:

- The areas of focus for the NM-QTA Mission will be in fundamental science, translation, technology development and towards addressing issues concerning national priorities
- The mission can help prepare next generation skilled manpower, boost translational research and also encourage entrepreneurship and start-up ecosystem development.
- Quantum principles will be used for engineering solutions to extremely complex problems in computing, communications, sensing, chemistry, cryptography, imaging and mechanics
- Their applications which will be boosted include those in aero-space engineering, numerical weather predictions, simulations, securing the communications & financial transactions, cyber security, advanced manufacturing, health, agriculture, education
- It can bring India in the list of few countries with an edge in this emerging field will have a greater advantage in garnering multifold economic growth and dominant leadership role

At the bottom, there are social media handles for IndiaQST and the website www.dit.gov.in.

The Hindu

Embryo development - Jumping gene



- In the early stages of the human embryo, before it has implanted in the mother's womb, the cells arrange themselves in a particular way.
- A blob of cells gathers towards one side of the embryo and the other cells

arrange themselves around this blob.

- This blob is called the inner cell mass. It contains cells with the ability to make all the other types of cells in the human body i.e. the cells in this blob are pluripotent.
- Since a whole human body takes shape from this blob, scientists are naturally very interested in studying it in detail.
- One way that scientists study cells is by looking at the kinds of proteins the genes in the cells can make that human embryonic stem cells express a gene called HERVH, a virus like gene that's important in maintaining pluripotency.
- Based on his analysis of the gene expression data in 2016, Dr. Singh found that most of the inner cell mass cells also express HERVH but not the noncommitted cells that eventually die.

The Hindu

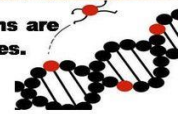
What is Jumping Genes?

- Transposable elements (TEs), also known as "jumping genes," are DNA sequences that move from one location on the genome to another.
- These elements were first identified more than 50 years ago by **geneticist**

Barbara McClintock of Cold Spring Harbor Laboratory in New York. Biologists were initially skeptical of McClintock's discovery

JUMPING GENES

- **Jumping genes was first discovered by Barbara McClintock while observing maize plant in 1940.**
- **Jumping genes also called as transposons are present in both prokaryotes and eukaryotes.**
- **They are DNA sequences that jump from one location in the genome to another. That is they have the ability to both replicate themselves and insert elsewhere in the genome.**
- **In 1965, McClintock suggested that these jumping genes might play a regulatory role in determining which genes are turned on and when its activation takes place.**
- **Jumping genes cause mutation in various ways. If a transposon inserts itself into any other part of the genome, they can destroy or alter the gene activity.**
- **Transposons are generally programmed to avoid jumping into active genes.**



The Hindu

Teenage galaxies and web telescope



- The galaxies were observed glowing with eight elements hydrogen, helium, oxygen, nitrogen, sulfur, argon, nickel, and silicon.
- "Oxygen is noteworthy because it's one of the most important components of 'galaxy DNA,' in terms of tracking past growth.

Current Affairs 28th November 2023 by Saurabh Pandey

- Incidentally, oxygen is also the third most abundant element in the universe, teenage galaxies those aged about 2 to 3 billion years after the Big Bang.

- The Hindu

James Webb Space Telescope (JWST)

- The James Webb Space Telescope (JWST) is a [space telescope](#) designed primarily to conduct [infrared astronomy](#).

- The U.S. [National Aeronautics and Space Administration](#) (NASA) led development of the telescope¹ in collaboration with the [European Space Agency](#) (ESA), and the [Canadian Space Agency](#) (CSA).

- The JWST was launched 25 December 2021 on an ESA [Ariane 5](#) rocket from [Kourou, French Guiana](#) and is intended to succeed the [Hubble Space Telescope](#) as [NASA's flagship mission](#) in [astrophysics](#).

- The telescope is named after [James E. Webb](#), who was the [administrator of NASA](#) from 1961 to 1968 during the [Mercury](#), [Gemini](#), and much of the [Apollo programs](#).

- It provides improved [infrared](#) resolution and sensitivity over Hubble, viewing objects up to 100

times fainter than the faintest detectable by Hubble.

The Hindu

World disorder

- Liberal democracy confronts a multitude of dangers. On September 11, 2001, with al-Qaida attacking the Twin Towers in New York, terrorism gained a new dimension.

- The attack on the State of Israel by Hamas, a Palestinian terror outfit, however, represents a new high in the evolution of terrorism.

- The attack on Ukraine by Russia on February 24, 2022,

- A new battleground has opened up very recently in West Asia, following the terror attack by Hamas on Israel, which is turning into an all-out conflict.

- A massive United States Naval deployment, from the Mediterranean to the Gulf of Oman, in the wake of the Hamas Israel conflict, has the potential of bringing Iran backed Shia militant organisation (such as the Hezbollah) directly, and Iran at a later date, into the conflict.

- China, for its part, is vigorously pursuing its two contradictory goals

viz., to checkmate the 'U.S.-dominated world order' and in turn ensure the success of a China-dominated order. Issues such as Taiwan are, hence, not receiving the attention they deserve.

- Notwithstanding the West Asia imbroglio, it is the uneasy situation in the IndoPacific region that contains even greater potential for a wide ranging conflict one that could well involve the U.S. and China directly

Technological threat

- As growing numbers of people, cognitively and psychologically, become dependent on digital networks, many critical aspects of their thinking and functioning would be conditioned by AI.
- The emergence of generative AI will be the real game changer, and experts predict that the situation could become even more critical in the near future.
- The real risk is that it could alter the very fabric of nation states, with truth itself becoming a casualty the deepfake syndrome.
- The use of AI, especially for military and security purposes, is cause for utmost concern. It has to be managed with great care, for the dangers are immense.

- AI is capable of being vitiated, and subject to different types of 'adversarial attacks' viz. 'poisoning' (which typically aims to degrade a module's ability to make relevant predictions), 'backdooring' (which involves a malicious trigger input that causes the AI module into misclassifying inputs), 'evasion', etc

- Quantum computing is another dimension that is likely to transform the world. Quantum's unique ability to crunch stacks of data is already reshaping certain designated sectors.

- Quantum AI simulation denotes a mind boggling degree of effectiveness and efficiency but there are equally intrinsic risks attached to it.

- Another domain of global risk is health, for as humanity advances, health has become a critical factor of everyday existence

What is meant by zero-day attack?

- A zero-day (also known as a 0-day) is a vulnerability in a computer system that was previously unknown to its developers or anyone capable of mitigating it. Until the vulnerability is mitigated, threat actors can exploit it. An exploit taking advantage of a zero-day is called a zero-day exploit, or zero-day attack.

Restructuring of Supreme court

- The Supreme Court of India has three jurisdictions under the Constitution: original, appellate, and advisory.
- The Supreme Court serves as a Constitutional Court as well as a Court of Appeal.
- The Court sits in benches of varying sizes, as determined by the Registry on the directions of the Chief Justice of India (CJI), who is the Master of the Roster.
- Constitution Benches of the Supreme Court typically comprise five, seven, or nine judges who deliberate on a specific issue related to constitutional law.
- Article 145(3) of the Constitution provides for the setting up of a Constitution Bench.
- It says a minimum of five judges need to sit for deciding a case involving a “substantial question of law as to the interpretation of the Constitution”, or for hearing any reference under Article 143, which deals with the power of the President to consult the Court.
- Typically, cases before the Supreme Court are heard by Division Benches (of two judges) or full Benches (three judges) to examine a wide range of topics, such as film prohibitions/restrictions or charges that a police commissioner abused his position.
- Under its very broad jurisdiction, the Supreme Court has entertained frivolous public interest litigations, such as demands that passages be deleted from the Quran or secularism be removed from the Preamble to the Constitution
- In March 1984, the Tenth Law Commission of India proposed that the Supreme Court be split into two divisions: the Constitutional Division and the Legal Division.
- The proposal stated that only issues pertaining to constitutional law would be brought to the proposed Constitutional Division.
- Reiterating this, the Eleventh Law Commission stated in 1988 that dividing the Supreme Court into parts would make justice more widely available and would significantly decrease the fees that litigants have to pay.
- in Bihar Legal Support Society v. Chief Justice of India (1986), the Supreme Court stated that it was “desirable” to establish a National Court of Appeal that would be able to entertain special leave petitions.

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- This would allow the Supreme Court to only entertain constitutional and public law related questions.
- As a step towards making the Court more accessible, the 229th Law Commission Report (2009) recommended four regional benches to be located in Delhi, Chennai or Hyderabad, Kolkata, and Mumbai to hear non constitutional issues.
- The Supreme Court, as we know it now, was founded on January 28, 1950, under Article 124 of the Constitution, two days after India became an independent, democratic republic. It came into being in Delhi as a result of Article 130

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