

## China economic slowdown

Economic data coming out of Beijing over the past months indicate that all is not well with the world's second largest economy, which was expected to spring back and drive global growth after three years of grinding restrictions under President Xi Jinping's zeroCOVID policy.

Figures on August 8 showed that the country suffered its biggest fall in exports in more than three years. China's exports declined from a record high of \$340 billion in December 2021 to \$284 billion in May 2023.

The growth in China's GDP was fuelled by investments, not domestic consumption.

While many economies have followed an investment driven model, China's reliance on it was extreme. Investment was nearly 50% of its GDP, while household consumption in 2010 was just 34%. About five decades ago, China's economy was considered, as the Centre on Foreign Relations put it, an "economic afterthought". Decades of state ownership and central planning under Mao Zedong left China rural and impoverished.

During the 1970s, when the country was facing acute underinvestment

across multiple sectors, Deng Xiaoping's reforms opened up the economy.

This encouraged the formation of rural enterprises and private businesses, and liberalised foreign trade and investment.

Post1978 China saw average real growth of more than 9% and in several peak years, the economy grew more than 13%, in what was referred to as Beijing's growth miracle.

However, the policy focused predominantly on supply, not demand, meaning the growth in China's GDP was fuelled by investments, not domestic consumption.

Notably, unlike major economies, where GDP growth is conventionally perceived as an indicator of economic performance, China's growth target is a predetermined objective set by Beijing at the outset of each year, which local governments, the property sector and other sectors have to meet through delivering enough economic activity

Many economies have followed an investment driven development model, China's reliance on it was extreme. Investment was nearly 50% of its GDP, while household

consumption in 2010 was just 34%. Globally, the average for household consumption in GDP is about 60%, being around 70% in the U.S.

“genuine growth can be thought of as sustainable growth generated largely by consumption, exports, and business investment, whereas “inflated” growth consists mainly of non productive, or insufficiently productive, investment in infrastructure and real estate”.

Analysts say the government will have to pivot towards a consumption led model in order to manoeuvre out of the slowdown, which means putting more money in the hands of consumers instead of mobilising it for investments.

The inflated growth through mobilisation of resources and debt has in turn led to more debt.

China has generated 41% of the world's growth in the past decade, nearly twice the 22% contribution from the U.S., and way more than the 9% contribution from the euro area.

This means that China has generated 1.1 percentage points of the 2.6% real growth rate of the world economy.

It made up this big chunk of the global growth because its economy was growing at about 89% a year.

Now that its growth rate is half of that its contribution would also be halved to about 0.5 points.

The Hindu

---

### Gresham law

Gresham's law refers to the dictum that “bad money drives out good.” Gresham's law comes into play when the exchange rate between two moneys or currencies is fixed by the government at a certain ratio that is different from the market exchange rate.

Such price fixing causes the undervalued currency, that is, the currency whose price is fixed at a level below the market rate to go out of circulation.

The overvalued currency, on the other hand, remains in circulation but it does not find enough buyers.

It should be noted that the market exchange rate is essentially an equilibrium price at which the supply of a currency is equal to the demand for the currency.

Also, the supply of a currency in the market rises as its price rises and falls as its price falls; while, on the other hand, the demand for a

currency falls as its price rises and rises as its price falls.

So, when the price of a currency is fixed by the government at a level below the market exchange rate, the currency's supply drops while demand for the currency rises.

Thus a price cap can lead to a currency shortage with demand for the currency outpacing supply.

The Hindu

---

### Shanti Swarup Bhatnagar (SSB) awards

After nearly a year's delay, the Council of Scientific and Industrial Research (CSIR) has published the list of winners of the Shanti Swarup Bhatnagar (SSB) awards for 2022, considered among the prestigious prizes for science in India.

The Shanti Swarup Bhatnagar (SSB) Prize, instituted in the memory of the first Director General (DG) of the Council of Scientific and Industrial Research (CSIR), is usually announced on the foundation day of the institution on September 26.

The Hindu

---

### Reciprocity

What is reciprocity?

Simply put, the principle asserts that if a signal can be transmitted from Point A (the source) to Point B (the destination), the same signal can also be transmitted from Point B to Point A, simply by exchanging the positions of the source and the destination

A variety of applications Scientists and engineers have discovered more exciting applications of this principle.

Consider antennas, like the dish shaped ones used to receive signals for your television, or those erected on WiFi routers and radio sets, or discreetly packed into the body of a smartphone.

Antennas can both send and pick up signals in the form of electromagnetic energy.

The Hindu

---

### Picoflare

Researchers studying the findings of the Solar Orbiter Aircraft, a joint mission by the European Space Agency and the U.S. space agency NASA, recently announced that they had detected small jets of charged particles that were being expelled in intermittent fashion from

the outer regions of the sun's outer atmosphere.

According to the researchers, these 'pico flare jets' could be a source of the solar wind, which have important effects on the solar system at large as well as on the earth's magnetic field.

A solar wind is a high speed stream of charged particles from the sun, but their exact origin remains unclear.

Scientists only know that coronal holes are source regions for the solar wind. Coronal holes are transient parts of the sun's corona, or the outermost portion of its atmosphere, where the atmosphere is relative less dense and cooler, and from where the sun's magnetic field extends into space

The researchers observed the relatively small picoflare jets within emissions from the coronal hole that they were observing.

While they lasted only a few dozen seconds, the researchers calculated that they contained enough energy to power a nontrivial fraction of the solar wind. 'Pico' is an order of magnitude that denotes  $10^{12}$ , or one trillionth of a unit

The researchers named these jets from the sun thus because they

carried approximately one trillionth as much energy as the largest flares that the sun is believed to be able to produce, according to the researchers.

The discovery is notable because while strong gusts of the solar wind produce beautiful aurorae over the high latitudes of different planets, they also set off a cascade of effects that disrupt the earth's magnetic field and damaging electronics in satellites in space and in circuits on the ground.

The Hindu

---

### Food insecurity

The 'State of Food Security and Nutrition in the World' of the Food and Agriculture Organization (FAO) estimates the proportion of the population across countries unable to afford a healthy diet (reported in this newspaper on August 31, 2023, under a datapoint).

The figure for India in 2021 is devastating to note an estimated 74% of the population cannot afford a healthy diet.

Given a population of 1,400 million, this makes for approximately one billion Indians.

A shrinking ability of households to finance their food requirement is

evident also in studies undertaken in India itself.

To have engineered the Green Revolution in India at a time when it was a desperately poor country challenged by having to ensure food security to a staggeringly large number is perhaps more significant.

With hindsight, we can see that mistakes were made, among them the rampant use of chemical fertiliser, fuelled by subsidy, which degraded the soil.

There was also the reliance on procurement prices rather than productivity increase to ensure farm incomes, which fuelled inflation.

We also see that the policy was almost exclusively focused on cereals rather than pulses, the main source of protein for most Indians.

The first Green Revolution had a specific agenda of making India self sufficient in food

Yield increasing interventions on the farm are needed to at least contain the cost of production, if not to actually lower it.

Agricultural yield is lower in India than in East Asia, pointing to the potential for an increase

It has been pointed out for some time that increased public expenditure on irrigation is not reflected in an increase in irrigated area whether due to waste or the diversion of funds has not been established.

The ongoing fragmentation of already small land holdings lowers the capacity for productivity enhancing capital investment, for which leasing is a solution. India's network of public agricultural research institutes needs to be energised to resume the sterling role they had played in the 1960s.

Finally, extension has now more or less vanished from where once the gram sevak was a familiar figure in the village, playing a crucial role in the dissemination of best practices. It must be revived.

The Hindu

---

## G20

The 83paragraph Declaration made progress on cryptocurrency regulation, and crystallised a figure of nearly \$10 trillion needed for climate change adaptation and mitigation projects for the Global South, although it failed to agree on any fossil fuel "phaseout" deadlines.

There were several other initiatives too: the admission of the 55member

African Union has corrected an imbalance that so far only allowed the EU as a regional grouping in the G20.

The Hindu

---

The Global Biofuel Alliance was an important step towards more research and delivery of alternative energy sources for a world still dependent on fossil fuels.

Finally, an India Middle East Europe Corridor with the promise of U.S. investment has dazzling possibilities, but details of its funding and execution still need to be drawn out.

India's attempt to take the G20 outside of the ordinary, single venue template, to hold 200 meetings in over 60 cities, drawing more than 1,00,000 official visitors from 125 countries, has been noted as a unique initiative, albeit at considerable extra cost; it remains to be seen whether future G20s will find it a viable example to follow.

Above all, India's G20 leaves an indelible mark in its attempt to "popularise" an organisation seen till now as a staid and boring event bringing world leaders to a high table where arcane subjects are discussed, decisions made are not scrutinised, and without bringing real change to the lives of the wider global population.