



## Post COVID-19 World, The Texture of Health Policy And Exim Vis-à-vis Change In Comprehensive Economic Paradigm – Analysing Pragmatic Data

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### ABSTRACT:

On March twenty four, the govt. of Asian nation ordered a 21-day, nation-wide captivity so as to contain the unfold of COVID-19. At that time, total case numbers in Asian nation were comparatively low, with solely 492 confirmed. However, total tests conducted at that time were thus low, within the order of twenty thousand, that it had been not possible to grasp what actuality infection rate was, or however the unwellness was spreading. the choice to impose imprisonment was thus taken within the face of deep uncertainty, and, needed deliberation up the implications to livelihoods against the danger of an uncontained eruption. What square measure the possible impacts of COVID-19 on Asian nation, each on its health care and economic systems, and on its property development and global climate change agenda?

KEY WORDS: COVID-19, SAARC, BIMSTEC, STIMULUS PACKAGES, KEYNESIANISM, RCEP, MSME,

1.1 The world is facing humanity's biggest crisis since warfare II. nearly each country has been littered with the devastating Coronavirus unwellness (COVID-19). a scourge from China has gone everywhere. within the previous couple of months, Corona's geographic point has been shifted from China to Europe to the us. Till date, over 1.5 million individuals had been littered with COVID-19 and regarding eighty,000 individuals had died worldwide. Indirectly, billions of individuals are laid low with the impact of the world pandemic of COVID-19. what's atrocious is that the numbers probably stem from under-reporting and should in all probability rise alarmingly within the we tend toes ahead if we consider well patients and speedy tests. providing pandemic-driven crisis is consistently ever-changing, countries are wanting to flatten the curve for COVID-19.

Undoubtedly, this Coronavirus has placed the planet economy at a serious risk. Coronavirus ravages the economic foundations of world trade. Commentators have known this natural event as Associate in Nursinging outcome of hyper-globalisation or beginning of de-globalisation. However, the planet goes to face recession; and also, the world losses, in step with some commentators, might exceed the planet Wars I and II combined. At constant time, the falling world worth of oil has added any anxieties. many estimates are currently accessible on the economic loss and post-COVID-19 growth path, Associate in Nursinging most of the estimates show that the planet is already in an economic condition.

South and Southeast Asian countries are not any exception. they're heavily affected, health or otherwise. Countries are underneath full or partial and declared detention for the previous couple of weeks. it's a worldwide challenge and a worldwide response is termed for. Flattening the COVID-19 curve along helps everybody in Associate in Nursinging

Nursing comprehensive manner. in contrast to the 2007-08 world monetary Crisis, it's primarily a health crisis, that has born to Associate in Nursing economic shock.

Meanwhile, the planet order has been ever-changing quick. many theories are being postulated. Anti-globalisation rhetoric venom is currently unfurled. In such evolution “New Normal” of the planet order, the agreement is that countries ought to save the world from the epidemic if we want to measure along.

### **Stimulus Packages Announced**

<b>Country</b>	<b>Amount (US\$ billion)</b>
India	24
Bangladesh	8
Thailand	58
USA	2000
Malaysia	84
Singapore	4
Japan	990
Indonesia	26

\*As on 8 April 2020

(Source: Writer/s own based on several secondary data sources from various medias.)

India has with success controlled the transmission of COVID-19 until date, because of our well-coordinated steps to tackle the Corona epidemic.

India's artistry in prescription drugs and health science; mass public awareness with the assistance of digital systems; and a central political command; among others, so helped in containing the

South and Southeast Asian countries are following an identical approach in containing the COVID-19.

All of them have introduced stimulant packages, notably to support the heavily affected individuals, MSMEs, agriculture, exports, health, rural community, informal sector, etc.,

as an example, Asian nation has introduced over US\$ eight billion stimulant package, Indo-US\$ twenty-four billion, Siam US\$ fifty-eight billion. While every of the South Asian countries has undertaken forceful measures to avoid wasting its nation from COVID-19-driven pandemic, regional cooperation is felt necessary to effectively handle the common challenge.

as an example, a poker hand of SAARC leaders met through video conference on fifteen March 2020 to debate the scope and chance of a joint action.

1.2 Among different selections, South Asian leaders have set to launch a regional fund to touch upon the crisis. Usages of electronic media like platform associated with health care consultants has been launched, and a follow-up videoconference of senior health officers was organized thenceforth, wherever countries have mentioned many necessary problems starting from specific protocols coping with the screening of products and other people at entry points and get in touch with tracing to on-line coaching capsules for emergency response groups.

Steps also are projected to foster technical cooperation, coaching and capability building, among others. Whereas the requirement to fight the pandemic is huge, this regional effort could be a sensible starting not solely to share the responsibilities however conjointly to reactive the SAARC method.

Few days later, the leaders of G20 countries had an internet summit and pledged to infuse over US\$ five trillion into the world economy to minimise the economic and Bharat conjointly had a conference with a number of the Indo-Pacific countries on problems associated with countering COVID-19. Identical initiative is however to occur just in case of BIMSTEC or between India and ASEAN.

1.3 On the opposite, association and EU convened a high-level video conference on twenty March 2020 to debate the COVID-19 scenario. association and therefore the EU in agreement to continue operating closely along to mitigate the impact of COVID-19, as well as on social and economic development. They are in agreement to boost exchanges and cooperation moving forward, with a read to additional regular exchanges between officers and consultants from association and therefore the EU on coping with this issue. Foreign Ministers of association and China additionally met in capital of Laos, Lao PDR on twenty Gregorian calendar month 2020 for the Special ASEAN-China Foreign Ministers' Meeting on the COVID-19. Among others, leaders of association and China have

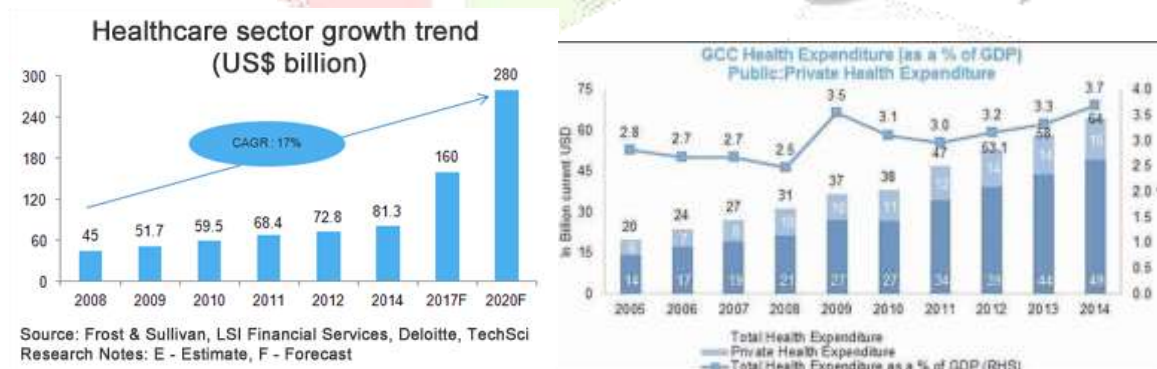
in agreement to accelerate cooperation within the region against COVID-19 by sharing data and best practices during a timely manner, as well as exchanging obtainable medical specialty data, technical pointers and solutions for epidemic hindrance and management, diagnosis, treatment and police work, with a read to enhancing capability in emergency readiness and response; and mitigate provide chain disruptions of pressing medical merchandise and promote analysis and development of medicines and vaccines.

There are made available lessons to find out from COVID-affected countries. For instance, Republic of Korea and Taiwan might manage the devastation with the assistance of fast tests and targeted solutions. Vietnam has no death from COVID-19 as on date. China has taken facilitate of digital technology to contain the unfold of COVID-19 in alternative major cities in solid ground. The common among all is that the application of digital technology like AI and Machine Learning (AI-ML) in containing the COVID-19 transmission and sharing information and data on COVID-19 on real time basis.

There are many channels through that the COVID-19 happening might have an effect on Indian economy (or any economic for that matter), of that the disruption of provide chains is that the major one. Job loss is on the increase alongside the lag in producing and services activities. employees are back to their aim faraway places, thereby departure the approaching harvest in uncertainty. Lack of orders might eventually cause large trade contraction. additional fall in Indian rupee isn't remote. Besides, disruption in aviation, fall in travel and business, contraction in outside diversion industries, rise in bankruptcy and NPAs. whereas these are short-run effects, rise in death and destabilization, sophisticated diseases and continuation of the pandemic, etc., can't be dominated out. As a result, these shocks will spill over to alternative sectors and economies via trade and production linkages. Decoupling of economies, significantly between China and therefore the remainder of the planet might arise, forcing China to concentrate a lot of on domestic consumption.

COVID-19 crisis additionally provides opportunities. Countries might witness higher aid – each management and facilities. New social and behavioural norms – “social distancing”, “wearing masks”, “maintaining hygiene”, etc., are the new traditional, and countries need to modify with such new traditional amid the pandemic. Surely, vaccines and correct medicines to tackle the COVID-19 are fancied. However, there's no place of self-satisfaction. Countries need to be ready to tackle another such shock in future.

2.1 While internment is crucial for holding the Coronavirus, prolong isolation isn't the best answer to bring back the economy on the expansion path. within the post-pandemic amount, alongside new trade standards and certifications, the e-commerce and therefore the new worth chains might develop the pace, wherever trade facilitation means that connecting the countries over digital platforms (e.g. ability of digital interfaces) and paperless trade. The merchandising and shipment market are one amongst evolution. during this new scenario, consistent with the recently launched ‘Global Freight Forwarding Report’, continued automation and inclusion in fully encircling platforms that manage all modes of transportation and information analytics can dominate logistics market within the years ahead.



Prospects could expand manifolds in crypto currency, Fintech, computing and Machine Learning (AIML), Blockchain technology, to say many, as PRC (China) has already introduced the same interimly and internally. Countries can hunt for quicker, cleaner, safer transportation, rather than a standard FTA, that talks around trade liberalization and ‘shallow’ trade facilitation. Countries could elect safe and secure trade than “free” trade. New “pandemic” connected trade barrier(s) (can be classified as another NTM) could replace the normal quota and different tariff and non-tariff barriers. The new world order also will produce new jobs and skills. world establishments need reforms to contend with the rising state of affairs.

At identical time, countries shall undertake reform to strengthen the digital economy and e-commerce not solely to manage the pandemic however conjointly to facilitate trade. Trade barriers shouldn't be allowed to happen in exchange product and services notably those feed the health science.

Among different measures, what South Asia countries shall kill the post-pandemic amount is to supply extra solatium. for instance, exporters and importers is also waived from customs bonds until true improves and trade obtain the momentum or quicker payment of incentives to exporters or waving the interests on bank loans, etc. India's SWIFT may be a nice example here. India's trade partners shall work on ability of trade dealings digital interfaces like SWIFT.

If crisis is prolonged, price chains, each regional and world, will break. This could be a chance for Republic of India to leapfrog its export. Is Republic of India or other Asian nation will able to opt for new markets? India could style a method to exchange an excessive amount of reliance on China for the imports, notably pharmaceutical company genus Apis. Shifting the establishment chains from China conjointly offers FDI opportunities.

If World Trade Organization is unable to supply its due services on time, Asian nation might think about vocation a world or regional dialogue to line up new trade standards and certifications for export and import within the post-Covid-19 amount.

It's tough to reform inter-governmental organisations wherever Asian nation or different South Asian countries square measure minor stakeholders, however it's not possible. In this time of crisis, countries follow economic theory to come up with jobs for the community, which can then facilitate to enhance the mixture demand, and also the production.

2.2 Since the headache is currently on the govt., the managed economic system ought to be allowed to figure until the expansion returns back. Countries got to work along whereas handling the crisis, notably for the post-crisis recovery.

No event higher demonstrates why a stronger network between countries is therefore important to style a technique for the complete Asian region.

People who square measure unwell with Coronavirus would like doses of latest medicines, that then persist building antibodies, save lives, improve gas levels and speed up recovery, within the same approach, countries nowadays would like "economic antibodies" to save lots of the economies from any disasters.

Gradual gap of the economies and adjusting in "New Normal" is that would like of the hour. Asian nation should accelerate its diplomatic strength in South and Southeast Asia and / or geographical region as there are new scope and economic opportunities can be seen and therefore may be adopted.

For instance, the RCEP is gone, however Asian nation, will we have a tendency to get improved and / or make a comeback or retrieve or regain if we follow up our unfinished tasks in trade (by micro-connecting of nations in Southeast Asia) physical and digital (financial or economic) property, health and non-traditional security areas.

Activating the Indo-Pacific this point might come high dividends within the post-pandemic amount.

India's diplomacy has competed major role in managing the crisis on a 24x7 basis, be in lifting the distress folks from many components of the planet or following the pandemic minute by minute or subsidence immediate and complex queries.

Asian nation should still play a bigger role in building a cohesive neighbourhood during this "New Normal" at a time once the partnership are guided by new ethics, challenges. To get a way of the solution to the current question, we will develop a collection of risk factors, and see however Asian nation positions against them.

These factors are often classified in 3 groups: exposure and attention hardiness, political economy position, and Social Security.

The table below develops some pointers for each of those classes.

Category	Indicator	Value	Evaluation
Exposure and healthcare robustness	Population share over 65 (% total pop)	3.2%	Good
	Hospital beds per thousand (per 1000)	0.7	Poor
	Healthcare spending share in GDP (% GDP)	3.5%	Poor
Macroeconomic health	Fiscal deficit (% GDP)	7.4%	Poor
	Forex reserves (forex reserves to short-term foreign debt)	1.7	Good
	Commodity exports (% total merchandise exports)	18.2%	Moderate
	Tourism exports (% total exports)	5.4%	Good
Social security	Informal employment (% total exports)	80%	Poor
	Adequacy of social security coverage (welfare transfers as % total household welfare)	4.6%	Poor

2.3 Republic of India receives a decent score in terms of the share of higher than sixty-five in total population as long as COVID-19 disproportionately impacts older folks, India's younger demographics could facilitate to alleviate pressure on the care system.

However, on each hospital beds per 1,000, and care outlay, Republic of India scores poorly.

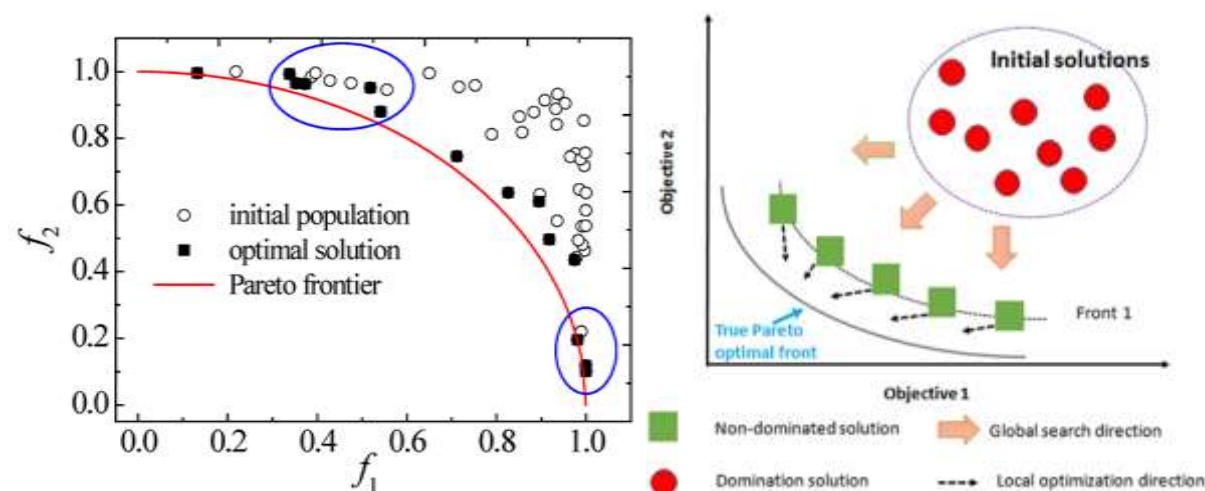
- Macroeconomic health: Republic of India scores poorly on its financial deficit, indicating that it'll be difficult to considerably increase public expenditure to cushion the COVID-19 impact.

in contrast to different rising countries, India's foreign debt is tiny and it's ample interchange reserves, leading to a decent score on the indicator of the quantitative relation of Republic of India scores moderately on the indications of artefact exports as a share of total exports, and is therefore unlikely to be considerably hit by the autumn in, likewise, the share of commercial enterprise in India's total exports is comparatively low, in contrast to another developing or rising countries like Thailand.

- Social security: Republic of India scores poorly in terms of the massive (almost 80%) portion of the personnel in informal employment (also in terms of daily wage earnings): targeting this huge population with adequate social support. Likewise, the adequacy of existing Social Security coverage is poor.

Overall, viewing these indicators, it seems unlikely that India—unlike different additional exposed rising markets—would expertise a full-on economic science meltdown, within the kind, for instance, of a balance of payments crisis, dramatic exchange (of currency) devaluing, and a neglect foreign debt.

However, the indications recommend that India's vulnerable population is probably going to suffer dearly from the economic fallout of COVID-19 lockdowns, because of the large share of the informal economy, the challenge of targeting vulnerable populations inside this informal economy, and therefore the government's scarce financial resources to try accordingly.



The International Monetary Fund is sticking out a dramatic reduction in India's GDP rate to one.9% in 2020, with a dramatic formed recovery to 7.4% in 2021.

With the govt unable to guard incomes throughout the crisis, there will be a considerable quantity of wealth destruction throughout the imprisonment amount.

If the previous couple of years have told North American country something, it's that shocks to the informal economy, like ending and therefore the introduction of a product and repair Tax (GST), are substantial, persistent and unpredictable in their impacts.

3.1 GDP growth within the vary of 1-2% in 2020, and 4-5% in 2021, seems additional affordable. Implications for the agenda of property development and global climate change. Firstly, the govt is probably going to enter into the post-COVID amount with a still worse financial position than was the case in 2019, once the consolidated financial deficit, as well as central government, regime, and off-balance sheet borrowings amounted to around 8.5% of GDP.

This may constrain the capability of the govt to portion further resources to property objectives, for instance conveyance. As variety of decarbonisation choices area unit negative price in India, for instance the transition to renewables within the power sector, wherever renewables area unit.

Secondly, we are able to expect substantial money fragility and reduced risk-appetite within the company sector.

This can be already evident within the case of the electricity distribution firms, that were wallowing in debt before the COVID-19 crisis and area unit currently facing a really Indian and international investors area unit probably to be rather more cautious of allocating capital to risky new comes, which can hamper the transition in sectors wherever clean technologies.

On the opposite hand, investors area unit presently seeing first-hand however coal power has been the primary to suffer in associate economic condition.

Coal plant load factors were already abysmal because the economy slowed throughout 2019, well before the COVID-19 crisis; they need tanked as power demand has fallen concerning it's burdensome outcome to examine, however investors can obverse capital for brand spanking new coal in India.

On the additional positive facet, a number of the behavioural changes created by households and therefore the formal sector might continue when the crisis.

Travelling in India's full cities was already brutal: enforced work from home has shown that point, cash and energy are often saved through telecommuting.

India's radically poor air quality has dramatically started improving, which might raise awareness of however poor it had been within the initial place—annually additional Indians die of pollution than were ever probably to die of even associate uncontrolled COVID natural event.

larger investment in social resilience and tending will probably be wound into a narrative round the want for governments to guard their voters, as well as from global climate for several Indians, however, the belly is presently speaking louder than the brain. However, India emerges from this lockdown—socially and politically—remains to be seen.

### Cost-Benefit Analysis Formula

$$\text{Benefit-Cost Ratio} = \frac{\sum \text{PV of all the Expected Benefits}}{\sum \text{PV of all the Associated Cost}}$$

$$\text{Net Present Value} = \sum \text{PV of all the Expected Benefits} - \sum \text{PV of all the Associated Cost}$$

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Also need to add Capital Asset Pricing to get Risk Free Rate of Return etc.

$$R_e = R_f + \beta * (R_m - R_f)$$

where,

- $R_e$  = Expected Rate of Return
- $R_f$  = Risk-Free Rate of Return
- $\beta$  = Beta of the Security
- $R_m$  = Market Rate of Return
- The Gross Profit Margin formula is calculated by subtracting the cost of goods sold from net sales and dividing the difference by net sales. Generally, a gross profit margins calculator would rephrase this equation and simply divide the total gross profit dollar amount we mentioned above by the net sales.

$$\text{Gross Profit Margin} = \frac{\text{Net Sales} - \text{Cost of Raw Materials}}{\text{Net Sales}}$$

Marginal Product of Labour = Change in Production Output / Change in Input Labour

Or

$$\text{Marginal Product of Labour} = \Delta Y / \Delta L$$

Further, the formula for the marginal product of labour can be elaborated into **Marginal Product of Labour =  $(Y_1 - Y_0) / (L_1 - L_0)$**

Where,

- $Y_0$  = Initial Production Output,
- $Y_1$  = Final Production Output,
- $L_0$  = Initial Labour Unit
- $L_1$  = Final Labour Unit

A single analysis of a test sample can be regarded as literally sampling the imaginary set of a multitude of results obtained for that test sample. The uncertainty of such subsampling is expressed by

$$\mu = \bar{x} \pm t \frac{s}{\sqrt{n}}$$

where

$\bar{x}$  = "true" value = (mean of large set of replicates)  
 $\frac{\square}{x}$  = mean of subsamples  
 $t$  = a statistical value which depends on the number of data and the required confidence (usually 95%).  
 $s$  = standard deviation of mean of subsamples  
 $n$  = number of subsamples

(The term  $\frac{s}{\sqrt{n}}$  is also known as the *standard error of the mean*.)

The principle is to establish a statistical linear relationship between two sets of corresponding data by fitting the data to a straight line by means of the "least squares" technique. Such data are, for example, analytical results of two methods applied to the same samples (correlation), or the response of an instrument to a series of standard solutions (regression).

*Note:* Naturally, non-linear higher-order relationships are also possible, but since these are less common in analytical work and more complex to handle mathematically, they will not be discussed here.

The resulting line takes the general form:

$$y = bx + a$$

where

$a$  = intercept of the line with the y-axis  
 $b$  = slope (tangent)

In laboratory work ideally, when there is perfect positive correlation without bias, the intercept  $a = 0$  and the slope = 1. This is the so-called "1:1 line" passing through the origin (dashed line in Fig. 6-5).

If the intercept  $a \neq 0$  then there is a systematic discrepancy (bias, error) between  $X$  and  $Y$ ; when  $b \neq 1$  then there is a proportional response or difference between  $X$  and  $Y$ .

The correlation between  $X$  and  $Y$  is expressed by the correlation coefficient  $r$  which can be calculated with the following equation:

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \cdot \sum (y_i - \bar{y})^2}}$$

where

$x_i$  = data  $X$   
 $\bar{x}$  = mean of data  $X$

$y_i$  = data  $Y$   
 $\bar{y}$  = mean of data  $Y$

It can be shown that  $r$  can vary from 1 to -1:

$r = 1$  perfect positive linear correlation  
 $r = 0$  no linear correlation (maybe other correlation)  
 $r = -1$  perfect negative linear correlation

Often, the correlation coefficient  $r$  is expressed as  $r^2$ : the *coefficient of determination* or *coefficient of variance*. The advantage of  $r^2$  is that, when multiplied by 100, it indicates the percentage of variation in  $Y$  associated with variation in  $X$ . Thus, for example, when  $r = 0.71$  about 50% ( $r^2 = 0.504$ ) of the variation in  $Y$  is due to the variation in  $X$ .

The line parameters  $b$  and  $a$  are calculated with the following equations:

$$b = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sum (x_i - \bar{x})^2}$$

and

$$a = \bar{y} - b\bar{x}$$

It is worth to note that  $r$  is independent of the choice which factor is the independent factory and which is the dependent  $Y$ . However, the regression parameters  $a$  and do depend on this choice as the regression lines will be different (except when there is ideal 1:1 correlation).

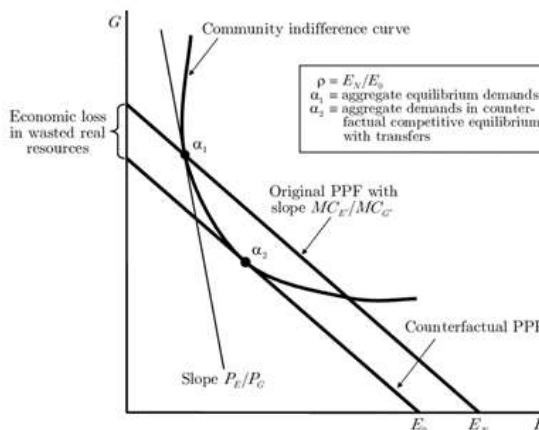
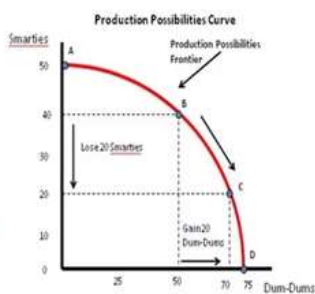
3.2 With the spotlight on the world pharmaceutical offer chain, an internment at a significant Indian producing hub earlier this month caused waves of unrest. Now, weeks later, that hub is keep a copy and running—but considerations concerning India's management of the U.S. drug offer faucet area unit still alive and well.

Some of the world's biggest generics and active pharmaceutical ingredient (API) suppliers have factories in Baddi, India—responsible for thirty fifth to four-hundredth of the nation's pharmaceutical output, that were clean up part or fully as a part of the internment, together with Sun company, Abbott Laboratories and / or Dr. Reddy's.



## Production Possibilities Curve

- The Production Possibilities Curve illustrates the trade-offs facing an economy producing two goods.
- The *production possibilities frontier* (the line) shows all the possible combinations of the two products using all the available resources.
- Since we are using all available resources, *increasing the production of one of the goods means decreasing the production of the other good* (illustrates the idea of trade-offs).



The set up includes investment \$1.3 billion in domestic pharmaceutical producers and doubtless revitalizing state-run corporations to build low-cost generic production.

According to Bloomberg, seventieth of India's imports of Apis come back from China, totalling \$2.4 billion of India's \$3.56 billion in import defrayal for those merchandise every year.

India and China's dominance in provide has been at the middle of U.S. politicians' entails a pivot toward wrenched domestic producing, that may build up drug production capability to counteract shortages in times of crisis. The agency same it'd briefly enable hospitals to supply hard-to-find medication from combining pharmacies to treat bound patients hospitalized with severe COVID-19.

3.3 The new rules, meant to last as long as hospitals still encounter shortages of key medication, apply to combining pharmacies that are not already sanctioned by the agency as "outsourcing facilities." To qualify, the someone medication should be listed on the FDA's shortages list, and hospitals should have exhausted all alternative choices to access a billboard version of the drug. Hospitals, specifically, are onerous hit by cascading shortages of key medication, notably anaesthetics and painkillers used for patients that need ventilation care as well.

The novel coronavirus pandemic has caused a number of issues within the world pharmaceutical provide chain—particularly in China, a significant producer of drug ingredients. Now, seeing a chance, Republic of India is reportedly performing on an idea to supersize its own ingredient producing to combat Chinese dominance within the Asian and / or global market.

The Indian government is going to increase domestic production of pharmaceutical ingredients to counteract a perceived over-reliance on Chinese imports currently hampered by COVID-19 shutdowns, as stated by Bloomberg.

India has known and prioritized production of fifty-three raw materials and active pharmaceutical ingredients (APIs) as a part of its "China-plus-one" policy to fill in provide gaps on the basis realistic approach.

The set up includes investment \$1.3 billion in domestic pharmaceutical producers and doubtless revitalizing state-run corporations to build low-cost generic production. The very long-time generic Master of Education has received a raft of concentration, including from President Donald Trump as a possible and potential treatment for COVID-19.

With pharmaceutical provide chains pressure because of the novel coronavirus and China's role as a world ingredient producer has come back below scrutiny. Notwithstanding fears the East Asian country may fastened off the faucet for U.S. drugs, the agency same it hasn't nonetheless detected major signs for concern.

**Acknowledgement:** Author/s are immeasurably grateful to distinguished international scientist Prof. (Dr.) Dhrubajyoti Chattopadhyay for his constant support and inspiration.

## References

1. American Heart Association, 1998 *Heart and Stroke Statistical Update*. Dallas, Tex American Heart Association 1998;
  2. National Heart Lung and Blood Institute, *Congestive Heart Failure in the United States: A New Epidemic*. Bethesda, Md US Dept of Health and Human Services 1996;
  3. Graves EJ, Owings MF. 1995 *Summary: National Hospital Discharge Survey*. Hyattsville, Md National Center for Health Statistics 1997; Advance Data From Vital and Health Statistics, No. 291.
  4. Graves EJ. Detailed diagnoses and procedures, National Hospital Discharge Survey, 1990. *Vital Health Stat* 13. 1992;1131- 225 [Google Scholar](#)
  5. O'Connell JB, Bristow MR. Economic impact of heart failure in the United States: time for a different approach. *J Heart Lung Transplant*. 1994;13:S107- S112 [Google Scholar](#)
  6. Centers for Disease Control and Prevention, Trends in ischemic heart disease mortality—United States, 1980-1988. *MMWR Morb Mortal Wkly Rep*. 1992;41:548- 549, 555- 556 [Google Scholar](#)
  7. Centers for Disease Control and Prevention, Cerebrovascular disease mortality and Medicare hospitalization—United States, 1980-1990. *MMWR Morb Mortal Wkly Rep*. 1992;41:477- 480 [Google Scholar](#)
  8. Rich MW. Epidemiology, pathophysiology, and etiology of congestive heart failure in older adults. *J Am Geriatr Soc*. 1997;45:968- 974 [Google Scholar](#)
  9. Weinstein MC, Stason WB. Foundations of cost-effectiveness analysis for health and medical practices. *N Engl J Med*. 1977;296:716- 721 [Google Scholar](#) [Crossref](#)
  10. Weinstein MC, Fineberg H, Elstein AS et al. *Clinical Decision Analysis*. Philadelphia, Pa WB Saunders Co 1980;
  11. Kamlet MS. *The Comparative Benefits Modeling Project: A Framework for Cost-Utility Analysis of Government Health Care Programs*. Washington, DC Public Health Service, US Dept of Health and Human Services 1992;
- Further Reading:
- [1] Fukuda H, Ohashi Y. A Guideline for Reporting Results of Statistical Analysis in Japanese Journal of Clinical Oncology. *Jpn J Clin Oncol*. 1997;27(3):121-7. [[PubMed](#)] [[Google Scholar](#)]
  - [2] Altman DG, Gore SM, Gardner MJ, Pocock SJ. Statistical Guidelines for Contributors to Medical Journals. *British Medical Journal*. 1983;286:1489-93. [[PMC](#)] [[PubMed](#)] [[Google Scholar](#)]
  - [3] Daniel WW. *Biostatistics: a Foundation for Analysis in the Health Sciences*. John Wiley & Sons Inc; 1995. [[Google Scholar](#)]
  - [4] Bailar JC, III, Mosteller F. Guidelines for Statistical Reporting in Articles for Medical Journals. *Annals of Internal Medicine*. 1988;108:266-73. [[PubMed](#)] [[Google Scholar](#)]
  - [5] Puhan MA, ter Riet G, Eichler K, Steurer J, Bachmann LM. More Medical Journals Should Inform Their Contributors About Three Key Principles of Graph Construction. *Journal Clinical Epidemiology*. 2006;59:1017-22. [[PubMed](#)] [[Google Scholar](#)]