

This paper is inspired by a piece of research published by the McKinsey Global Institute in June of 2021. The paper explores the role of corporations in society and economies by mapping the different ways in which the economic value created by large companies flow either directly or indirectly to households in OECD economies.

Though India is not a member country, and the McKinsey research stays within the scope of the 38 OECD country economies, on reading the paper; there is reason to believe that the findings could have implications for the Indian economy and policy makers.

Therefore, I seek to explore two questions in my paper below:

- *Is it reasonable to assume that the McKinsey findings could apply to India*
- *If so, what policy implications would these findings have in the Indian context specifically with respect to:*
 - *Income inequalities*
 - *Rising prices of services like health and education*
 - *Reskilling/Upskilling workforce*

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India and the OECD:

The Organization for Economic Cooperation and Development is an association of 38 different countries and works with the goal of promoting the economic welfare of its members nations. It does so by helping member countries develop their economic and social policies. The OECD countries also account for about 80% of global trade, giving the joined-up entity significant leverage when it comes to influencing the space of international trade. Of course, a member country must be willing to make economic reforms in compliance with OECD guidance.

A bulk of the 38 member states are from Europe, followed by the Americas which have 5 countries in the organization and the four pacific members and two from the middle east.

The process of becoming a member is complex. A nation must be scrutinized by existing member countries and be willing to make reforms to meet expectations in areas like corruption, sustainability, corporate governance etc. While Brazil, China, India, Indonesia, and South Africa are recognized as key partners, they have desisted from being members.

India's decision to partner with the OECD by contributing to work agendas like taxation/fiscal affairs, financial education etc. and not becoming a member country, probably lies in an inherent need to retain a degree of independence in matters of policy: economic and social. Becoming a member of the OECD amounts to subjecting oneself to a rigorous review process. Typically, either at the request of the interested country or with the initiative of the OECD Council accession discussions are opened up. The Council would draw up an accession roadmap which among other things specifies the terms and conditions for accession. This usually entails technical reviews by various OECD entities to evaluate the readiness of the interested country to implement OECD policies, practices and instruments in various policy areas. The reviews often result in recommendations to align the candidate country to OECD standards.

Given the composition of the OECD which is heavily skewed towards developed nations, India may feel it does not fit well into the 'rich men's club'.

Therefore, India's focus has been to expand sectoral engagement and remain a member of various committees of the organization in areas such as taxation, transport research,

chemical, pesticides, biotechnology, consumer policy, statistics, fiscal policy, steel and private pension. Cautious of what message it sends to other South Asian countries, India will also try to weigh what it chooses to gain by becoming an OECD member country.

Can the McKinsey Findings be applied to India?

- India's GDP per capita is 86% lower than OECD best performers
- Similarly, Productivity is 82% lower than OECD best performers
- Inequality in India is higher than in most advanced countries, with the poorest 20% of households accounting for only 4.1% of the income generated
- India's current health expenditure as a percentage of GDP was reported to be at 3.544% in 2014 as estimated by the World Health Organisation Global Expenditure database. This is less than half the OECD average of 9.3% (OECD Health statistics 2014)

Having said that and despite the set-back of the pandemic, India remains a strong source of economic and population growth. If we ignore the aberration of 2020, growth rates in GDP reported for India have been healthy. As per the World Bank, India reported a GDP growth rate of 4.042 in 2019; 6.533 in 2018, 6.795 in 2017, 8.256 in 2016.

Also helping build perspective, would be a comparison of India with not just the best OECD performers but also with the less illustrious ones. The OECD publishes, once in 10 years, what it calls the wellbeing index. Believing that there's more than what meets the eye if one only looks at numbers of GDP and other indicators of economic growth; the wellbeing index is based on 11 topics the OECD has identified as essential, in the areas of material living conditions and quality of life.

The 11 areas covered in the index include housing, income, jobs, community, education, environment, civic engagement, health, life satisfaction, safety, and work-life balance. The 2020 How's Life Assessment shows Norway, Australia, Iceland, Canada and Denmark leading the rankings with South Africa, Mexico, Columbia, Turkey, Greece and Brazil being in the bottom 6 rankings.

Country	GDP In billion USD	Real GDP growth rate	Unemployment	Per Capita Income/GDP	Health Expenditure as %age of GDP	Inequality Gini Coefficient
India	2708.77 (2020)	4.04% ('19) -7.97% ('20)	7.11% (2020)	1964.88 USD (2020)	1.3% (2018)	47.9 (2018)
Brazil	1434.08 (2020)	1.41% ('19) -4.06% ('20)	13.67% (2020)	6783.05 USD (2020)	9.51% (2018)	53.3 (2017)
Greece	189.26 (2020)	1.86% ('19); -8.25% ('20)	16.85% (2020)	17670.29 USD (2020)	7.8% (2019)	31.1 (2020)
Turkey	719.54 (2020)	0.92% ('19)	13.9% (2020)	8548.18 USD (2020)	4.7% (2019)	41.9 (2019)

		1.79% (’20)				
Columbia	271.46 (2020)	3.28% (’19) -6.25% (’20)	15.44% (2020)	5389.12 USD (2020)	7.3% (2019)	49.7 (2017)
Mexico	1076.16 (2020)	0.06% (’19) -8.24% (’20)	4.71% (2020)	8421.19 USD (2020)	5.5% (2019)	43.4 (2017)
South Africa	302.11 (2020)	0.15% (’19) -6.96% (’20)	32.5% (2020)	5067.15 USD (2020)	8.3% (2018)	63 (2021)

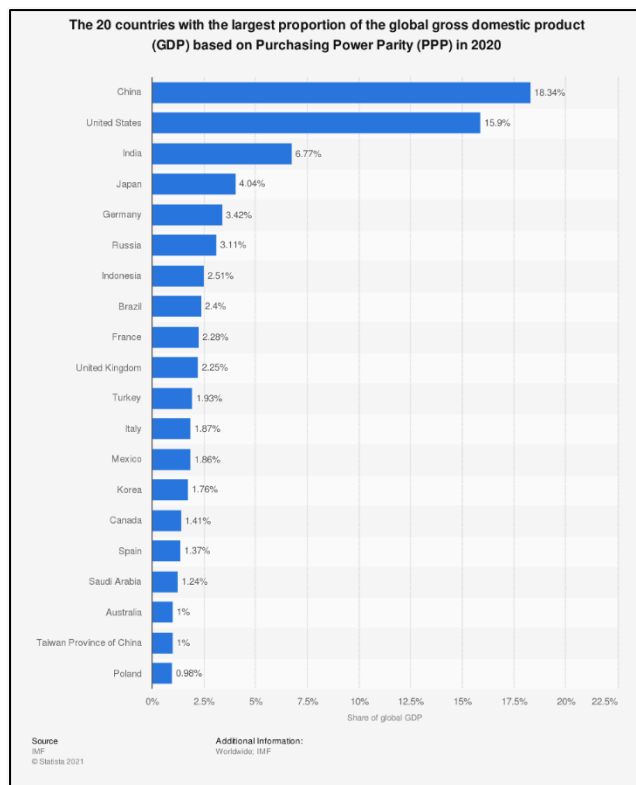
World Bank and IMF Data as sourced from statista.com

The Gini coefficient measures the deviation of the distribution of income (or consumption) among individuals or households in a given country from a perfectly equal distribution. A value of 0 represents absolute equality, whereas 100 would be the highest possible degree of inequality.

How’s Life? shows that OECD averages hide as much as they highlight: what is true on average is not always true for every member country – and even less for different population groups within those countries. Even the rise in life expectancy is faltering for some OECD countries where it is plateauing. Since 2010, housing affordability, relative income poverty, voter turnout, and social support have each worsened in roughly as many OECD countries as they have improved. The greatest gains in current well-being have often been concentrated in countries that had weaker well-being at the start of the decade, many of them in eastern Europe. By contrast, resources for future well-being – such as Economic, Natural and Social Capital – have often seen a widening of the gap across OECD countries, with top-performers pulling further away, and problems deepening among those already struggling. While some well-being gains since 2010 have gone hand-in-hand with recent GDP growth, this is far from guaranteed in all cases – especially for health outcomes, inequalities and the environment.

The above table shows that when evaluated using basic economic indicators, India might not score very high on parameters like per capita GDP, but in terms of GDP growth rate it remains an economic powerhouse to be reckoned with.

The below table illustrates the size and impact of the Indian economy as it ranks 3rd in the world, behind only China and the United States when it comes to proportion of the global gross domestic product based on Purchasing Power Parity in 2020.



* projected
In 2010 PPP U.S. dollars
Source: OECD



statista

When Jim O Neil first wrote about the BRIC (Brazil, Russia, India and China) economies it was with a view to reinforcing the changes that would be needed in the framework for global economic governance in order for these economies to actually reach their potential. The potential assessment was essentially a function of the size of the nation's workforce and the economy's productivity. According to Jim O Neil, while India has disappointed in recent years, overall, it has not strayed from the path that had been envisioned. For both Brazil and Russia, however, 2010–20 economic performance was very disappointing. Brazil and Russia have continued to be excessively dependent on commodity trade and hence vulnerable to world commodity cycles, hurting their own sustainable development. They both need to ensure that their secondary and tertiary sectors grow with an accompanying shrink in the primary

sector. They also need to grow the role of the private sector. China of course has more than realised its potential and given the size of the Chinese economy, the BRIC economies taken together are now larger than EU economy and close to the size of the US economy.

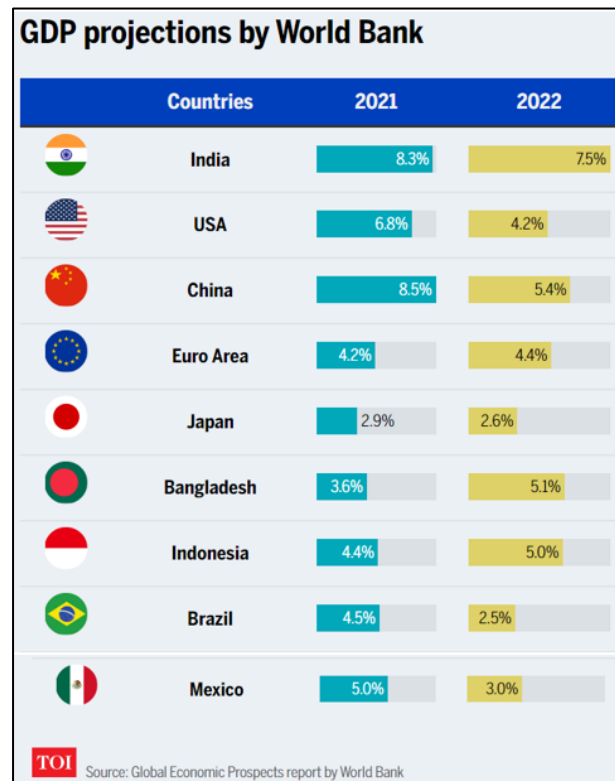
On an average, every Indian is earning 30 per cent more now than what he or she earned six years ago, which is in the fiscal year 2014-15. Per capita income in India rose from Rs 72,805 in FY15 to Rs 94,954 in FY19. Between FY 2010-11 and FY 2014-15, the per capita income rose 17 per cent. Increased per capita income gives more disposable income in the hands of people, which eventually raises the standard of living.

Even as inflation concerns loom large and the impact of the second wave of infection is not yet certain, India is expected to emerge as one of the fastest growing economies in Asia only after China this year. It is expected to return to pre-covid growth rates by the end of the year.

A key partner for the OECD, India has become the fastest-expanding G20 economy with a projected growth rate of 8.3% for 2021 and poised to become the world's 3rd largest economy. . In less than ten years, sustained growth supported by fiscal, structural, and social reforms has lifted about 140 million people out of extreme poverty. The introduction last year of the centralised goods and services tax is expected to contribute to India's market integration and the improvement of the investment and business climate. India has also advanced decentralisation of fiscal responsibility to empower the states and make policies more responsive to local needs.

The OECD is ready to step up its collaboration with India to help promote reforms for more sustainable and inclusive growth throughout the country. India's valuable policy experience has enriched the work of the OECD, increasing the relevance of its analyses and legal standards in today's increasingly globalised world. In turn, the Organisation's ability to bring together

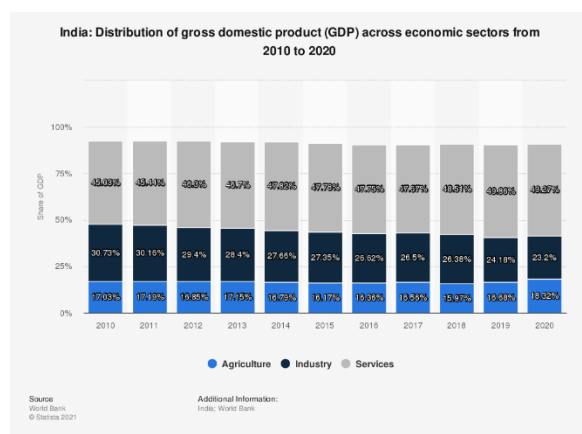
expertise and evidence-based analysis benefits India by informing its policy choices and supporting its reform agenda.



Given this backdrop, despite India's figures on per capita GDP, Gini coefficient, health expenditure; the sheer size of her economy and projected growth rates; the applicability of Mc Kinsey findings around the role of corporations in society and economies by mapping the different ways in which the economic value created by large companies flow either directly or indirectly to households becomes even more valuable to explore. As the economy grows, the role of corporations too would grow and therefore, it becomes very material to understand if there are any implications for policy making by better understanding how the value created by these organisations flows directly or indirectly to households and have these patterns changed over the last 25 years.

Mapping the economic value flows:

The business sector overall contributes 72 percent of GDP in the OECD as per the McKinsey paper. Measured in GDP per capita, the contribution of the entire business sector has tripled since 1960 on average in major OECD economies, in proportion with their overall economic growth. Companies underpin 85 percent of technology investment and 85 percent of labor productivity growth since 1995, a larger proportion than their GDP contribution.



~72%

A parallel measure in the Indian context would be to look at the contribution of the Industrial and Services sector to GDP over the last 10 years. The share of agriculture has more or less remained between 17% to 18% over the last ten years. The share of industry has fallen from roughly 31% to 23% and the services sector has grown from 45% to 49%. As of 2020 data, the total contribution of the Industrial and Services sector to India's GDP has remained steady at

In the framework employed by McKinsey, economic value flows from companies to households via eight pathways, of which labour income and consumer surplus are the largest direct pathways. Of the eight pathways through which economic value from corporations flows to households and the economy; five are directly measurable monetary flows: labour income, capital income, taxes, investment in capital assets, and payments to suppliers. The money flowing through the supplier and investment pathways passes through other companies to reach households and the economy. The sixth is consumer surplus (the difference between what consumers are prepared to pay and what they do pay), which we estimate. The final two pathways are negative and positive spill overs, which we do not assess comprehensively beyond the examples of environmental impact and contributions to total factor productivity growth (unaccounted for in additional labour or capital input). The paper goes on to define these pathways as:

Labor income pathway. This pathway comprises wages/salaries/benefits that flow to employees from a corporation and would include social security contributions as well as personal income taxation.

Capital income pathway. These are monetary flows to shareholders and creditors in the form of dividends, share buybacks, and interest. This pathway does not include capital gains or wealth effects from changes in the price of financial instruments as they are traded in secondary markets. This income is generated through shares held by the household, or indirectly through investment or savings instruments they own which in turn get invested in companies through stocks or mutual funds- and retirement benefits. This pathway also reaches households via public pensions funds which get invested in organisations and reap returns in the form of cash flows.

Tax pathway. These are the tax payments remitted by a company directly to government, like corporate income taxes and excise duties for example. They are part of the organisation's value added at the selling price net of sales taxes. The size of the pathway is a function of a country's corporate and personal tax policies: taxes on sales where the burden is usually passed on to the end consumer; taxes could be levied on personal income (salaries and wages) which in the organised sector would get taxed at source. Taxes collected through these routes ultimately find their way to households because the tax revenue generated by the government is redirected to public spending in provision of services to citizens or even in the form of labour income through subsidies or co-employee benefits, or in the form of consumer surplus passed on through subsidized prices of goods and services.

Investment pathway. A part of the earnings of corporates is ploughed back in the form of investments in capitalized assets which in turn are used for production of goods and services. This pathway reaches households in three indirect channels:

- Salaries/wages of those employed in organisations that are providers of capital goods; dividend earnings for shareholders of these organisations. Capital goods could be physical such as property, plant, and equipment, and intangible like goodwill from acquisitions or software and data assets that can be monetised in a business model;
- second, like a multiplier effect, through the actual use of capital goods in production, which in turn leads to additional streams of revenue and economic value that then flows through all the eight pathways; and,
- third, savings as cash – which is basically current consumption postponed for future consumption – which then remains available to spend on future investment or pay out through the other monetary pathways.

Supplier payments pathway. The organisation's ecosystem includes suppliers who provide raw materials/intermediate input goods and services which are used in the production process. Supplier payments are payments made to these supplier companies such as shared service centers which manage business processes that are not core to the organisation's competitive advantage: payroll for example, or order to cash processes. These monies then flow to households indirectly as labor income, capital income, and tax payments of those other companies or through several companies in a supply chain or commercial ecosystem (as in the case of capital goods providers). The supplier companies could be large as well as small and midsize enterprises (SMEs) – like ancillary industries, that serve as employment generators, for example.

Consumer surplus pathway. Consumer surplus is the notional value obtained by consumers when they buy a product or service for a price less than the highest price they would be willing to pay. Empirically, companies have many more consumers than employees, making this a more diffused measure of how many households a company reaches through its pathways.

The McKinsey study finds that over the last 25 years, the size of these pathways has changed. Capital income has grown while labour income and supplier payments have fallen.

Looking at organisational archetypes

The McKinsey research goes on to cluster companies into a framework and they propound eight archetypes in their analysis. The framework distinguishes between companies across 2 parameters: their factor inputs (labour vs capital) how they create economic value and their relative impacts on the economies through the eight pathways we spoke about earlier. They labelled these eight archetypes as follows:

- Discoverers
- Fuellers
- Financiers
- Technologists
- Experts
- Deliverers
- Makers and
- Builders

Fuellers, as the name suggests are energy companies: oil, coal, gas sectors which are primarily engaged in activities like exploration, extraction, refining, distribution, and sale of energy resources. These companies are characterised by large investments in physical assets, robust labour productivity, high wages/salaries and also high emissions (the negative spill over pathway which the study struggled to assess comprehensively).

Financiers are the organisations which make up the financial products/services sectors and would include banks, insurance, venture capitalists, real estate companies. These organisations would be engaged with providing capital and financial services to meet the economic needs of governments, companies, individuals/households. They would also provide for hedging against risks, at a price. These companies would have the highest capital incomes and are known for high wages/salaries.

Experts are primarily service organisations. As the name suggests, these organisations charge a price for their subject matter expertise. Typically, companies included in this category would be for profit hospitals, educational institutions, health services. For these companies their

biggest assets are the knowledge (and experience) resident in their employees. They therefore are characterised by high employee remuneration in order to attract and retain their people assets.

Technologists cover the hardware, software, digital and tech, media companies. These entities are characterised by high R&D and typically responsible for enhancing the productivity of the economy. In many instances these organisations have triggered deep price reductions and hence contributed to increased consumer surplus.

Discoverers are basically companies that rely heavily on research in order to differentiate their products in the market and try to create a unique value proposition. Intellectual property is key to their competitive advantage in the market. Pharmaceutical and biotech companies are obvious candidates in this category. Some FMCG companies which also invest heavily in R&D would fall into this group. For example, companies like Unilever invest around € 1 billion in R&D and have a portfolio of more than 20,000 patents and patent applications world-wide.

Deliverers are primarily engaged in supply and distribution operations. They are characterized by high employment levels and high supplier and marketing costs usually associated with retail and distribution companies.

Builders are organisations engaged in construction, operation of physical infrastructure assets and include utility, telecommunications, and transportation companies. Manufacturers of chemicals and raw materials (like iron and steel) would also fall in this category. Their utilisation of physical infrastructural assets is almost two times the average level across industries. Along with fuellers, this category of companies are also responsible for the highest levels of emission.

All other manufacturers are clubbed in the **Makers** category, making it the biggest archetype. Given the large footprint, they are responsible for the highest contribution to the pathways both in absolute and relative terms. Their employment intensity, just above average across the archetypes, combines with high wages to make their labor income among the largest of all archetypes. Given their ability to bring prices down on account of scale and technology, they have also contributed to increases in consumer surplus.

Changes in the mix of archetypes over the years (quarter of a century) explain most of the decline in labor income, while evolution of archetypes explains most of the increase in capital income, consumer surplus, and supplier payments

Based on the companies surveyed in this study within the OECD countries, the paper found that:

- The share of total revenue generated from organisations which make up the cohort in Builders and Makers has fallen sharply. This is a material finding, because traditionally Makers and Builders were the mainstays of these economies
- The share of Discoverers declined marginally
- All other cohorts, though, Financiers, Experts and Deliverer registered the largest growth in share of revenue generated within their respective economies.

This change in relative contributions has had consequences for the income pathways associated with these large corporations. For example, organisations that are a part of the cohort of Makers, are typically associated with larger labour income generation on an average. Whereas archetypes where revenue share has grown in size, are typically associated with lower labour income contributions on average. *When we balance these out, the net result has been a decline in overall labour income component across companies.*

The shrink in the labour income pathways has its roots in another factor. The number of employees per dollar of revenue dropped sharply for companies making up the cohorts of Experts, Fuellers and Builders (at constant dollar prices). And this fall was more than proportionate to the growth in real wages experienced in these three cohorts.

Groups which saw the highest growth in capital income and labour income pathways were Technologists, Financiers and Discoverers. These three archetypes were responsible for two-thirds of the increase in capital income pathway calculated on a per dollar revenue basis.

As already mentioned, due the nature of activities and phenomenon of scale combined with advancements in technology; Makers and technologists contributed to increased consumer surpluses resulting from significant price drops.

What's also interesting is that the characteristics responsible for definition of the archetypes became more and more pronounced over this period. Technologists and Discoverers increased their stock of intangible assets like intellectual property and patents; they increased their R&D expenditures and capital income more than the other archetypes. Employment went up by the largest extent in the Deliverers. While most other cohorts reduced physical capital assets; Fuellers actually added to their stock of these. And Experts who rely on the tacit knowledge asset of their employee base, saw the biggest rise in wages as they continued to wage a war on talent.

These findings help explain the other phenomenon documented by this study: high income households have benefited the most from the patterns and shifts in the economic impact of corporations over time.

While the study recorded an increase in consumer surplus originating from Makers and Technologists created through price reductions resulting from innovation gains/increased scale; they also experienced price increases in industries like education and healthcare which ate into some of the gains in consumer surplus (Experts and Discoverers narrowing their consumer surplus pathway). And this happened to a greater extent in lower income households.

The twenty percent of households with highest incomes increased their share of expenditure on education and healthcare; because they can afford it; but this also made it more challenging for the lower income households as more of their income now went to the rising costs of these services.

Implications of these findings for India:

In the Indian context, we have already seen in the earlier section of this paper that the share of agriculture has more or less remained between 17% to 18% over the last ten years. The share of industry has fallen from roughly 31% to 23% and the services sector has grown from 45% to 49%. As of 2020 data, the total contribution of the Industrial and Services sector to India's GDP has remained steady at ~72% .

The service sector in India typically includes organisations in Banking and Financial services, IT and IT Enabled Services, FinTech companies, healthcare and tourism companies; logistics and transportation, media and entertainment, education, sports, legal and para legal services, risk management and advisory functions.

Going by the above composition of the services sector in India, it seems akin to the Mc Kinsey archetypes of Financiers, Experts, Technologists and Deliverers.

Therefore, the McKinsey findings which essentially said Financiers, Experts and Deliverers registered the largest growth in share of revenue generated within their respective economies, finds a parallel in the Indian economy as well.

The McKinsey study also found that the share of total revenue generated from organisations which make up the cohort in Builders and Makers has fallen and this seems borne out in the Indian experience as well with the share of the industrial sector falling from 31% to 23% in the last ten years.

We can therefore say, that it would not be unreasonable to extend the implications of a change in the mix of archetypes seen in the OECD economies and the consequent impact it has on income pathways; to the Indian context as well.

Two implications stand out primarily:

- a decline in overall labour income component across companies. Organisations that are a part of the cohort of Makers, are typically associated with larger labour income generation on an average. Whereas archetypes where revenue share has grown in size, are typically associated with lower labour income contributions on average. When we balance these out, the net result has been a decline in overall labour income component across companies.
- high income households have benefited the most from the patterns and shifts in the economic impact of corporations over time.

The question that begs asking is what implications the above phenomenon would have for policy leaders in India how they would accentuate the positives, capture opportunities, and address challenges through changes in government spending and in sources for revenue generation (through taxation, for example).

In this section of the paper I look at three possible areas which could have implications for intervention through state policies.

Income Inequalities in India:

The change in the mix of archetypes over the years documented by the study compounded by the characteristics responsible for definition of the archetypes becoming more and more pronounced over this period carry implications in that high income households having benefited the most from the patterns and shifts in the economic impact of corporations over time, worsening income inequalities.

This indicates the need for an imperative centred around using policy regimes to neutralise the deepening income inequalities within the Indian economy.

Indian policy makers have always been concerned around alleviation of poverty and inequality. The first 40 odd years from independence saw a largely interventionist regime as the belief was that a complete exposure to the free play of market forces might result in under investment in sectors crucial to development. However, the growth focused agenda made the economy vulnerable to the redistributive effects of inflation which typically adversely affected peasants, workers and those in the unorganised sector.

The mid 1980s saw a gradual shift with the government adopting market oriented economic reform policies – like increased fiscal allocations to rural areas which sought to neutralise the

redistributive effects of inflation. The 1990s brought in a period of intense economic liberalisation and globalisation.

Based on data available up until 2011–12, inequality remains high in India compared with other countries at similar levels of economic development. It also has a rising trend over time, particularly since the early 1990s – which reflects the same 25 odd years that the McKinsey study covers.

While the rate of rise in inequality seems to have slowed down after 2004–05, it continues to show a rising trend with factors like caste, gender, region, and religion adding to it.

Gini Index (World Bank estimates) India:

Year	Gini Index
1983	32.1
1987	32.6
1993	31.7
2004	34.4
2009	35.4
2011	35.7

(World Bank, Development Research Group. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments.

<https://data.worldbank.org/indicator/SI.POV.GINI?end=2011&locations=IN&start=1983>)

More recent estimates of the Gini coefficient for India place it closer to 50, a phenomenon which has caused much concern and raised eyebrows around the so called success of the New Economic Policies (NEP)

In a UNO-WIDER working paper, author Himanshu is able to demonstrate that the inequality in India has largely been driven by changes in the labour market, with an increasing share of capital at the cost of labour. The rise in profit rate has accompanied a decline in wage share. But it has also been accompanied by rising inequality in access to public services such as health and education. Which interestingly corroborates the insights from the McKinsey study around the OECD economies.

<https://www.wider.unu.edu/sites/default/files/Publications/Working-paper/PDF/wp-2019-42.pdf>

<file:///C:/Users/p00072274/Downloads/SSRN.pdf>

Neutralising price increases in industries like education and healthcare:

While the study recorded an increase in consumer surplus originating from Makers and Technologists created through price reductions resulting from innovation gains/increased scale; they also experienced price increases in industries like education and healthcare which ate into some of the gains in consumer surplus (Experts and Discoverers narrowing their consumer surplus pathway). And this happened to a greater extent in lower income households.

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Reskilling/upskilling workforce:

GLOSSARY

Consumer Surplus

Consumer surplus is an economic measurement of consumer benefits. A consumer surplus happens when the price that consumers pay for a product or service is less than the price they're willing to pay. It's a measure of the additional benefit that consumers receive because they're paying less for something than what they were willing to pay. Consumer surplus is based on the concept of marginal utility which is defined as the increase in satisfaction (utility) that a consumer gains by consuming one additional unit of the good/service. Consumer surplus would increase as the price of the good falls and decrease with an increase in the price of the good.

As per the law of diminishing marginal utility, the additional gain in utility drops as more and more units of the good is consumed. Consequently, the consumer surplus too falls as additional units of the good are consumed.

The demand curve is a downward sloping curve – representing the law of diminishing marginal utility. It shows the relationship between the price of a product and the quantity of the product demanded at that price, with price drawn on the y-axis of the graph and quantity demanded drawn on the x-axis. Given the law of diminishing marginal utility, a consumer is willing to consume additional units of the good only with a fall in price of the good.

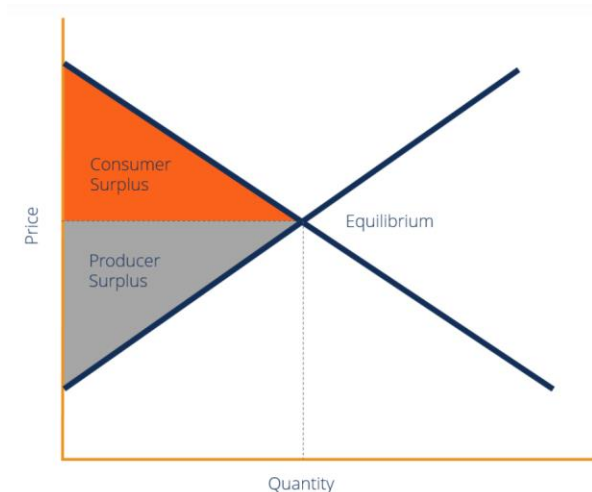
The supply curve is an upward sloping curve. Sellers/suppliers will make available larger quantities of the good in the market for higher prices. Suppliers over the long term can make decisions on how much to produce and bring to the market. But at any given point in time, they respond to the market price by deciding how much to sell versus how much to stock.

The equilibrium market price is determined by the interaction of the demand and supply curves in a free market economy. If price rises above the equilibrium price, demand falls, creating excess supply in the market at that point in time. This creates a downward pressure on the price till it comes back to the equilibrium price. Similarly, if price falls below the equilibrium price, demand increases creating excess demand in the market and this pushes the market price up till it reaches the equilibrium price.

At the equilibrium price and corresponding equilibrium quantity, the area in orange represents the consumer surplus enjoyed by the consumer.

Consumer Surplus = Maximum price willing to pay – equilibrium market price

Producer Surplus = Equilibrium market price – price at which the producer is willing to supply the good



Total Factor Productivity

The Solow residual is the portion of an economy's output growth that cannot be attributed to the accumulation of capital and labor, the factors of production. The Solow residual represents output growth that happens beyond the simple growth of inputs. As such, the Solow residual is often described as a measure of productivity growth due to technological innovation. The Solow residual is also referred to as total factor productivity (TFP).

The Solow residual drew attention to the lack of recognition for the role of innovation in economic growth, leading to more advanced economic analysis aimed at capturing the role of productivity growth.

The Solow residual is affected by a huge variety of technological, economic, and cultural factors. Innovation, investment in more productive sectors, and economic policies aimed at liberalization and competition all boost total factor productivity. Conversely, the Solow residual can be lowered by restrictive labor practices, excessive regulations, underdeveloped financial markets that fail to allocate capital efficiently, or anything else that affects the aggregate productivity of the economy.

The Solow residual has often been used as an explanation for the changing economic fortunes of national economies. For example, slowing growth in China has often been explained as an underlying productivity problem. In this interpretation, China's growth 'miracle' was the result of rapid capital accumulation and shifting underutilized labor into a modern capitalist economy, rather than a rise in productivity. China's TFP has been consistently negative since 2015, according to the Conference Board, because it has wasted huge amounts of financial resources on inefficient state-owned enterprises in industries like steel, coal, and cement, and excess infrastructure. Viewed through the lens of total factor productivity, China has managed to become an economic superpower through its sheer size rather than through gains in productivity.

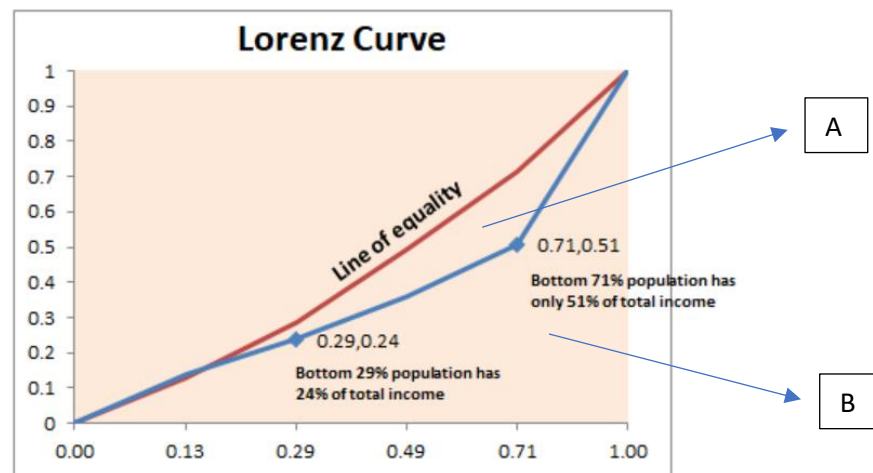
Gini Index

Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a

Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. It was developed by the Italian statistician Corrado Gini in 1912.

The Gini Index is not an absolute measure of wealth or income – a low-income country and a high-income country could have the same index if the incomes within the two countries are distributed identically.

The Lorenz curve is a graphical illustration of the Gini Index. It plots the proportion of the total income of the population (y-axis) that is cumulatively earned by the bottom x% of the population.



The 45-degree line is the line of equality (for example at any point on the line the bottom x percent of the population will have x% of the total income)

The Gini coefficient is the ratio of the area that lies between the line of equality and the Lorenz curve over the total area under the line of equality (marked A and B in the diagram); i.e., $G = A / (A + B)$. It is also equal to $2A$ and to $1 - 2B$ due to the fact that $A + B = 0.5$ (since the axes scale from 0 to 1).

The further a Lorenz curve deviates from the perfectly equal straight line (which represents a Gini coefficient of 0), the higher the Gini coefficient and the less equal the society.

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