



#TheIndiaDialog Working Paper Series

Working Paper (WP-2023-008 August, 2023)¹

Urbanization and Economic Growth: The Urgent need for Reimagining Kunal Kumar² and Divyansh Sahai³

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¹ The views presented here are those of the authors and do not necessarily represent the position of either Institute for Competitiveness or Stanford University. Working papers are in draft form. This working paper is distributed for purposes of comment and discussion only.

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Urbanization and Economic Growth: The Urgent need for Reimagining

Introduction

India is one of the few economic powerhouses globally that has witnessed sustained growth in the last few decades. Even though its per capita income has risen significantly from USD 575 in 1991 to USD 2,104 in 2018 (as per World Bank Databank), it is still at a low 148 out of 197 countries in constant per capita GDP terms (2010 USD). In comparison, China's per capita income in constant terms galloped from USD 786 in 1991 to USD 7,750 in 2019, a jump of almost ten times. It is not only about China. In a similar span of 28 years, the GDP per capita of South Korea rose seven times from USD 1,800 in 1970 to USD 12,600 in 1998. Similarly, Japan had a GDP per capita close to USD 8,600 in 1960 and was successful in raising it to around USD 34,800 by 1988

This is depicted in Figure 1 below.



Figure 1. Rise in real GDP per capita (2010 USD) of select countries during their best growth

Clearly, India has not been able to replicate the economic success of its East Asian neighbours in approximately the same time period of 28 years. It is not that we have done too poorly. The ratio of India's real per capita GDP to the world's average per capita GDP has jumped by about 2.5 times since 1991. However, with the global average per capita income at USD 10,881 in 2019, the average Indian is five times poorer than the average global citizen. There is an urgent need to rethink our for ushering rapid economic growth and making a quantum difference.

What causes Economic Growth?

There have been many notable attempts to understand the causes of economic growth. Adam Smith, in Wealth of Nations, argued that income per capita was determined by "the state of the skill, dexterity, and judgment with which labour is applied in any nation" (Adam Smith, 1776). David Ricardo's classical theory of comparative advantage suggest- ed that under free trade, an agent will produce more of and consume less of a good for which they have a comparative advantage, thus, leading to gains for individuals, firms, or nations from differences in their endowments and technol- ogy (Ricardo, 1821). The Solow-Swan model (1950s) was a neoclassical model which attempted to explain long-run economic growth by looking at the increase in capital accumulation, labour growth, and increases in productivity, commonly referred to as technological progress (Solow, 1956). This neo-classical model was an extension to the 1946 Harrod–Domar model that included a new term: produc- tivity growth. Endogenous growth models, developed by Paul Romer and Robert Lucas, placed greater emphasis on the concept of human capital by emphasizing how workers with greater knowledge, education, and training can help to increase rates of technological advancement (Romer P. M., 1994; Lucas, 1988). These bodies of work have helped evolve our understanding of the causes of economic growth immensely.

All the above theories broadly point to a society's level of technological progress being the best determinant of its eco- nomic progress. The challenge, however, is in understanding the dynamics of technological progress and quantifying its level in a given society. If that were possible, a better understanding of the dynamics of economic growth would have resulted. A common measure of technological progress has been growth in total factor productivity (TFP), which is the relative efficiency with which an economy produces goods and services, given a certain quantity of labour and capital. TFP is an indirect measure because it attributes to technology all output growth that cannot be explained by investment, i.e., growth in capital and increases in labour supply. However, utilizing TFP as an indirect measure has its challenges. It has been empirically found that not all facets of technology are captured by TFP, and hence it may not be the best indicator for measuring technological progress? The answer perhaps lies in the idea of economic complexity, which defines a measure for a society's capability endowment.

The idea of Economic Complexity

Economic Complexity is a proxy for the productive knowl- edge embedded in society. In its simplest form, productive knowledge can be defined as the knowledge of ways to make products. It can broadly be of three types – embedded, codi- fied, and tacit. Embedded knowledge is locked into products and processes in ways that are opaque to the user but makes the use of the product simple. For example, mobile phones, which are used ubiquitously even though their internal functioning is opaque to most of us. Codified knowledge is knowledge contained in SOPs, blueprints, manuals, recipes, etc. It may take years to perfect each of them, but when perfected, they can be used by people with lesser skills. The third and most important

form of productive knowledge is tacit knowledge. Speaking a language, managing an organization, playing an instrument, etc. are some examples of tacit knowledge. This is the knowledge which is learned by doing. While embedded and codified knowledge can be transferred easily (can be shipped, transported in bulk from one geography to another), tacit knowledge is very hard to transfer (learning can happen only through apprenticeships, learn on the job mechanisms at the same location).

The amount of productive knowledge has increased over time, and hence, such knowledge has got divided into numerous specialized chunks. These specialized chunks of productive knowledge needed to manufacture a mobile phone today is much higher than what was needed to produce traditional agricultural produce. Specializations like screen technology, battery systems, material science, microprocessor design, memory devices, cooling systems, etc. are capabilities that cannot be present in any one individual/ organization. Such diverse capabilities can only exist in many different individuals and organizations, which then need to come together in a production network to aggregate them together to produce the mobile phone. Hence, to produce complex products, societies need to be able to first produce or accumulate a diverse set of capabilities and then aggregate them through a coordinated network of firms and organizations. As a result, information about the kinds of goods produced in a society can act as an excellent proxy to understand the aggregate set of capabilities available within it, and hence, the level of its economic complexity.

To manufacture more complex products, society needs to acquire newer and more complex capabilities. While it cannot manufacture products that require capabilities it doesn't have, it also has no incentive to create or acquire that capability because the products that demand it, do not exist in the first place. This difficulty poses a chicken and egg problem. The chicken and egg problem is exaggerated for products which require many more capabilities than which already exist in society. In such a situation, accumulating one or two of the missing capabilities is not enough as there are several other important ones without which the product cannot be produced. As a result, a society tends to diversify into products that require capabilities that are very similar to the ones already available in them. A society overcomes the chicken and egg problem by making such 'nearby' moves to adjacent possible products.

A society that does not manufacture precision watches probably doesn't have either trained watchmakers, special-ized machinery, a system for quality certification or export incentives for the watch industry. Even if investors are willing to invest in high-end machinery, the investments will not create any impact due to the absence of appropriate certification systems, export incentives, and suitable skills. As the missing inputs needed to manufacture precision watches are large in number, it obviously would be difficult for the society to diversify into it. On the other hand, if a significant number of inputs needed for the manufacture of a certain product are already in place, its easier to add the few remaining inputs successfully. For example, an economy where shirts are produced may have all but very few remaining capabilities needed to manufacture suits. An economy that has an oil rig repair industry should be able to diversify into shipbuilding by accumulating a few other capabilities. Arguably it would be easier to move from textiles into leather manufacturing or from two-wheeler manufacturing to car manufacturing instead of moving from agriculture to integrated circuits or leather to complex ma- chinery. Societies are more likely to diversify into products that need knowledge chunks, which are quite similar to the ones they already possess. Sustained diversification through such 'nearby' moves into more complex products over time enhances the economic complexity of societies.

Ricardo Hausmann and the team at Harvard's Center for International Development (CID) and MIT Media Labs have developed an empirical measure called Economic Com- plexity Index (ECI) for each country's state of technology.

Their observation shows that countries which have higher Economic Complexity Index, enjoy higher incomes per capita. They conclude that ECI is a much stronger predictor of growth than other commonly used indicators that mea- sure human capital, governance, or competitiveness. Most importantly, the framework throws light on what a country needs to do to increase its technological capabilities to foster economic growth.

Intuitively, leather and textiles or two-wheelers and cars feel like similar products. It is, however, rather tricky to measure their similarities mathematically. Even if the challenge of mathematics is overcome, the need for a humongous amount of data for the calculation will make it a non-starter.

The economic complexity framework uses the probability of a pair of products being coexported in the world export basket as a proxy to measure the proximity between them. The result of the exercise is a network connecting pairs of goods and services into what they refer to as the 'Industry Space' which is a visual representation of the proximity between various products. The structure of the Industry Space is important. There is a positive correlation between the complexity of a product and the centrality of its location in the Industry Space.

Each country, region, or city occupies a unique position in the Industry Space at a given point in time. In order to increase its economic complexity, it needs to diversify into the production of more complex products by adding newer capabilities. Strategic diversification decisions need to be based on the analysis of feasibility (how nearby the new product is) and possible strategic value (the complexity of the new product). Through a sustained sequence of such strategic diversification moves, societies can improve their economic complexity. These decisions normally fall under the realm of Industrial Policy. The difference in levels of economic growth across nations depends on the amount of knowledge that their societies hold. This is the idea behind economic complexity. An economy grows only when the amount of knowledge it holds grows with time.

A strong correlation has been observed between measures of economic complexity and the income per capita that societies can generate. Economic complexity is the best predictor of economic growth (Hausmann, Hidalgo, et al., 2013). Countries whose economic complexity is greater than what we would expect, given their level of income, tend to grow faster than those that are "too rich" for their current level of economic complexity. In this sense, economic complexity is not just a symptom or an expression of prosperity; it is a driver. To drive economic growth, countries need to improve the complexity of their economies.

Urbanization, Economic Complexity and Growth

While it is clear that a rise in economic complexity is crucial for growth, the one indispensable component in this process is urbanization. As discussed earlier, aggregation of capabilities leads to technological progress, and this can happen only when conditions in society enable the creation and growth of a web of networks, firms, and organizations that can harness those capabilities into well-orchestrated production processes. As countries undergo the process of structural transformation (by moving up the ladder of economic complexity from agriculture into manufacturing and services), the need for specialization, forward and backward linkages, shared services and markets to buy and sell those complex products increases. This need drives them to

co-locate into denser habitations, causing urbanization. Urbanization, thus, is a natural result of a rise in economic complexity.

Urban enthusiasts argue that cities are the engines of economic growth. According to them, cities increase productivity through the creation of agglomeration economies. Let's look at the link between urbanization and economic growth across different countries. A study of data from a cohort of developed countries (western Europe, North America) during 1960-2000 shows a strong positive correlation between urbanization and economic growth.

On the other hand, even though the urban population rose from slightly below 20% to around 36% in both Asia and Africa between 1960 and 2000, per capita income increased 340% in Asia compared to only 50% in Africa. The increase in China's urban population from 51% in 2011 to 59% in 2018 corresponded to a rise in per capita income of 73% (USD 5,633 vs. USD 9,771). Brazil, during the same period, saw its urban population rise from 81% to 86%, but its per capita income nosedived from USD 12,291 to USD 8,921, a decline of 27%. A research paper from the London School of Economics concludes that there is a detrimental impact of large cities on economic growth in developing countries, suggesting a 2.3% decrease in 5-year growth rates for an increase in average city size by 100,000 inhabitants (Susanne A.Frick, 2016). The correlation between urbanization and economic growth cannot be taken for granted, as the data is ambivalent. While there is a strong positive correlation between urbanization and economic growth in some parts of the world (e.g., western Europe, North America), in some others, there seems to be either no correlation or negative correlation (e.g., parts of Africa, Brazil). The study of the sectoral composition of GDP growth across all countries confirms a strong link between a structural shift from agriculture to urban activities (manufacturing and services) and urbanization (Urbanization and Growth -M Spence, PC Annez, RM Buckley, 2009). While it can be established that urbanization is a natural consequence of economic growth, the reverse correlation may not necessarily hold true. Increased urbanization may not necessarily lead to increased economic growth. Having discussed the central role of economic complexity in creating prosperity in society, we can infer that urbanization will support economic growth only if it supports improvement in economic complexity, i.e., fosters conditions leading to increased accumulation and aggregation of productive knowledge and thereby boosting technological progress in society.

Role of the City

Technological progress (accumulation and aggregation of capabilities) over time leads to economic growth. Over two-thirds of world GDP is produced in its cities. However, it is not evenly distributed across all cities. Global Metro Monitor 2018, a report by Brookings Institution, found that the 300 largest metropolitan cities generated nearly one-half of the world's production while accounting for a little under one-fourth of the world's workforce in the year 2016. The ability of cities to overcome the chicken and egg problem (as discussed before) is vital to the process of economic devel- opment. The role of city governments is significant in this context. Their role will vary, ranging from no intervention at all to specific interventions based on their local context. Not only general formulae cannot be prescribed; they are best avoided. The traditional view that city governments are mere vehicles for the provision of basic infrastructure and services like roads, water supply, waste management, streetlighting, etc. needs to be challenged. This view assumes that actions instrumental in catalysing economic growth are exogenous to the functioning of city governments. Nothing can be farther from reality. Instead, the effects of city government's decisions on creation, growth, and nurturing of a complex web of coordinated actions among various actors in the city leading to generation, exchange, and accumulation of ideas are critical.

City governments play an instrumental role in matters related to land use planning, labour market mobility, adoption of technology, availability of specialized services, and prevalence of innovation practices. It is clear from empirical evidence that new and young firms are going to play the most crucial role in productive job creation in the future (VA Nageswaran, G Natarajan, 2019). City Governments play a pivotal role in creating ease of doing business in processes related to permissions, licenses, and compliance requirements, thus enabling the creation and growth of new businesses. They are instrumental in ensuring the availability of infrastructure in the local context, which is critical to the success of nascent formal businesses. Public amenities like hospitals, theatres, cinema halls, stadiums, parks, etc. and fundamental governance services like maintenance of law and order, social security, protection of property rights, etc. are crucial for the business sector. City governments, by promoting high-density growth, can allow both workers with differentiated skills and firms with specific needs to reduce their search costs. (Wheeler, 2001). They provision transportation systems that impact the ability of people to live, work, and play together. Affordable housing markets are either provided or coordinated by them. The ability of cities to perform these complex socio-economic functions is crucial for economic growth and job creation.

A city functions as a system of systems interacting with each other dynamically. In order for it to become an engine of economic growth, the city government needs to anchor con- text-specific decisions for strategic diversification to boost the city's economic complexity. For example, diversification into the real estate sector would involve the adoption of integrated economic and land use planning frameworks, the establishment of effective mechanisms for quick approvals, provision of skilled architects, trained masons /construction workers, and appropriate regulatory environment to boost investor/ customer confidence. A foray into agro-processing would need to be backed by provision of packaging units, cold storages, marketing mechanisms, transportation infrastructure for transport of food products into markets. Diversification into complex machinery would need focus on the availability of appropriate technical skillsets, policy incentives for manufacturing, construction of convention and exhibition centres, and forwardbackward linkages to support the industry. Going big on emerging technologies would necessitate the availability of world-class digital connectivity infrastructure, IT skilled human resources, open innovation practices etc. Cities with a focus on tourism have different needs from those focused on the automobile industry. Similarly, cities focused on textiles will have vastly different needs from those focused on financial services. Investment decisions in mobility systems involve prioritization according to the needs of the labour market. Affordable housing projects need adherence to the mixed- use, mixed-income principle, and closeness to economic and transit corridors. Thus, a medley of context-specific decisions in the fields of policy, law, infrastructure, admin- istration, finance, technology, institutions, etc. are needed in order to actuate such diversification. City Government's role as an anchor is vital in this regard.

City governments largely do not associate themselves with the important role of human capital development. This again stems from the siloed approach to governance where anchoring such functions are thought to be exogenous to their mandate. Ultimately the city suffers because it lacks the custom-fit capabilities needed for its economic context. Traditional approaches to human capital development have focussed on the acquisition of academic degrees and not on the development of necessary capabilities. One of the reasons for this is the disconnection between the worlds of 'practice,' i.e., the industry and the world of 'education,' i.e., academia. Human capital development efforts have, thus, become distant from the needs of society's production processes. This is why a society may end up with a huge number of graduates and post-graduates but would still not have enough people who know how to make furniture, join pipes, or create insulated electrical wiring. The problem is accentuated by the fact that decisions on human

capital development are taken centrally, leading to the mismatch between national/ State priorities and local needs.

General education is a poor proxy for productive knowledge of society. Instead of thinking of it as 'doing by learning,' ed- ucation today needs to be reimagined as 'learning by doing.' City governments can catalyze acquisition of productive knowledge as per the city's needs through the formulation of apprenticeship programs, learn on the job schemes, avenues for internships/ fellowships for college students, experiential learning mechanisms, etc. The role of city governments in anchoring the creation of a well-functioning health system cannot be exaggerated. Poor health conditions create friction in any economy's economic growth efforts. Income inequality is a natural result of economic growth. The ability of city governments to deliver inclusive growth through the formulation of appropriate social security nets is vital for sustainable development. The ability of city governments to empower neighbourhoods, communities, and families in taking day-to-day decisions is crucial for their long- term success. Instead of a top-down provision of policies, infrastructure, and services, such empowerment enables city governments to limit their own role to the creation of choices while the communities choose solutions best fit to their needs.

In today's age, governments have to be mindful of the impact of technology and globalization on the jobs of the future. While globalization creates new opportunities, it also wipes out existing ones. Digital inclusion is vital to ensure inclusive growth as new technologies of the era threaten to widen gaps and create greater chasms in society. They need to spend on creating excellent IT infrastructure and internet backbone to enable the acquisition of new knowledge. Economic growth, driven by the acquisition of new productive knowledge and the twin forces of new technology and globalization make it imperative for city governments to think of job creation as a dynamic process built on continuous interplay between their learning systems and industrial evolution. Greater collaboration between civil society, governments, academia, and industry, the quadruple helix is foundational in this context.

The role of the Government in creating markets, in stimulating innovation, in creating dynamic networks and in pushing the frontiers of new technology has been instrumental in many contexts. The case of Japan is an example. The flow of new knowledge can best explain the rise of Japan in the 1970s and 80s through the collaboration between academia, businesses and the government creating strong user-producer linkages, diversification of economic activities and a strong integration between R&D, production and technology import activities at the enterprise level. In her book, The Entrepreneurial State, Mariana Mazzucato stresses the role of local governments, and I quote, "Regional systems of innovation focus on the cultural, geographical and institutional proximity that create and facilitate interactions between different socioeconomic actors. Studies focussing on industrial milieu such as industrial districts and local systems of innovation suggest that conventions and specific socio-in- stitutional factors in regions affect technological change at the national level. Specific factors might include interactions between local administrations, unions, and family-owned companies in, for example, the Italian industrial districts."

There is a deep connection between cities and markets. The role of cities is intrinsic to the process of creation and growth of markets. In more ways than one, cities are incubators of ideas and economic growth. City governments around the world are investing in fostering knowledge and innovation networks. Chief Innovation Officers lead inno- vation teams as they strengthen the city's ability to leverage data science, open innovation, and co-creation. Through these efforts, cities are improving their competitiveness by adopting flexible regulatory policies, creating hyper-local partnerships to solve complex problems. Placemaking, the flourishing shared

economy, mobility-as-a-service, per- sonalized learning management systems are few examples of products that are setting new benchmarks in the urban innovation space, thus boosting local economic growth. Arguably, the most important question that would shape the destiny of cities in the future is can they innovate?

Each economic context places a unique ask on city govern- ments. It's difficult for them to be able to decipher those specific needs in the normal course. How do they answer the questions - In which capabilities do we need to invest? What infrastructure will be best aligned to their economic needs? In order to seek answers to these questions, city govern- ments need to create 'formal' mechanisms of sustained and meaningful dialogue among various stakeholders in order to build a deeper understanding of their city. These mech- anisms may include, inter alia, formal forums for dialogue between actors within the Quadruple Helix- Government, Communities, Industry and Academia in the form of Joint Working Groups; Investment Promotion and Facilitation Councils; Public Private forums for Economic Cooperation, Economic Development Councils, etc. Such mechanisms may help keep the 'eyes' and 'ears' of cities open to the specific needs of their ecosystem.

Economic growth, thus, cannot be thought of as exogenous to the subject of urban development. A simplistic view of cities as mere providers of basic infrastructure and services like water, roads, waste management, streetlighting, etc. is detrimental to our thrust on economic growth. Economic growth takes place endogenously through a complex web of coordinated actions in the fields of administration, finance, policy, planning, infrastructure, technology, etc. by different actors in the city. Actions anchored by city governments are intrinsic, inseparable, and important in the catalysis of this process and cannot be thought of in isolation.

Moving beyond Cities: The Argument for Regional Development

An increased pace of economic growth is bound to cause increased urbanization. Spatial redistribution of population and wealth becomes inevitable in such a scenario. Income inequality is an inevitable fallout of the process of economic growth. Governments can ill afford to let such inequality widen as it can have disastrous consequences. This is why having appropriate strategies for balanced regional develop- ment are important for governments driving the economic growth agenda.

From an efficiency standpoint, policy should strive to attain an 'optimal' level of spatial inequality. This is easier said than done. A rise in city size leads to negative externalities such as congestion, higher rents, and commuting time, which undermine the benefits of co-location. Agglomeration benefits within a city; therefore, do not rise ad infinitum with increases in city size. It seems to follow an inverted U-shape function: productivity increases up to a certain threshold of the city population, after which congestion costs outweigh the benefits from agglomeration and productivity starts to decrease (Susanne A.Frick, 2016). This threshold is not absolute but would vary from city to city depending on its ability to create, sustain, and grow diverse economic activity and hence, increase complexity. Beyond the said threshold, workers and firms would be better off relocating to a different city. The policy environment should make it easy for workers and firms to undertake such relocation. Policy action would be needed, broadly, in three areas:

Mitigation of coordination failures that prevent employees or companies from internalizing the external benefits they create for others by re-location. E.g. [incentives/approvals etc.] Openness to trade and creation of adequate intercity transport infrastructure.

Affirmative action on land, labour, and legal frame- works to eliminate bureaucratic red tape, high-handed local politics, slow judicial systems that together act as a growth inhibiting system

In absence of supporting conditions, a large city whose size is beyond optimal can exist, perhaps in combination with virtually non-existent satellite cities. This may result in a low economic development trap. The larger-than-optimum city reduces the productivity of workers and firms, which, in turn, curtails economic growth. Low growth makes the possibility of starting a new city more difficult, thus trig- gering a self-catalytic process of 'over-urbanization' of the large city, even after it has much exceeded its optimal size threshold. Unless the growth-inhibiting system is eradicated, a well- functioning system of cities will remain an elusive goal. Empirically, results for high-income countries suggest that people and firms are more prone to relocate once the large city reaches the tipping point on the productivity curve. Furthermore, cities in developed countries have been able to overcome some of the diseconomies by creation of a system of cities. However, in developing countries, many cities are already in a low economic development trap.

Emphasis not only on better functioning of the large city but also on the efficiency of the formation of a system of cities is vital for balanced regional development. The draft National Urban Policy Framework (NUPF) of the Government of India has acknowledged the need for appropriate paradigms of regional development. It states, "The potential for cities to create regional growth beyond their immediate boundaries depends on how they are integrated into their hinterlands and regions. In India, the hierarchy of settlements is highly skewed with a few large cities and many small villages. This is due to an approach of city management that looked at urban development in silos, rather than understanding it as the interplay of a number of programs across spatial scales. In a balanced hierarchy of settlements, cities have a two-fold beneficial relationship between city and hinterland. Firstly, in an integrated network of cities, towns and villages spread effects of investments are higher, which leads to greater regional equality. Secondly, a balanced network of settlements attracts knowledge workers, which leads to further economic development."⁴

Interconnected urban networks dominate economic activity across the world. The Hong Kong-Macau-Shenzhen cluster in China, Boston-New York-Washington and the GoI (2018), National Urban Policy Framework 2018, Ministry of Housing and Urban Affairs. 13

San Francisco-Silicon Valley in the US and so on. In India, there are regions such as Delhi-NCR, Mumbai-Pune, and Bangalore-Chennai. The impact of these hubs is felt far from their immediate vicinity. Delhi-NCR, for instance, impacts economic activity in Jaipur, Chandigarh, Dehradun, and Agra. Draft NUPF suggests that the key to stimulating higher economic growth in eastern India lies in driving Kolkata as a hub and investing in connecting it more strongly to Ranchi, Patna, Bhubaneswar, and Guwahati. This is a fundamentally different perspective from seeing each of these cities in isolation. 2

Key Policy Implications

Deepen economic data generation and analysis at the city and regional levels: Though it is cities and regions which drive economic growth, most of the economic data is generated and aggregated only at the State and national levels. Datasets from the Economic Census, National Sample Survey Organization, Annual Survey of Industries, Goods and Services Tax Network, Labour Bureau, etc. are useful starting points. However, these datasets do not have the level of granularity as desired for analysis at the city/ region level. Such data gaps need to be identified and plugged immediately.

Moreover, today these datasets do not talk to each other, are maintained in silos, and government agencies demonstrate excruciating inertia in sharing them even with each other. In an age of big data analytics, machine learning, and artificial intelligence this approach undermines our ability to harness the power of these technologies. Once, granular data is available at the city/ regional level, the Economic Complexity framework can help visualize paths towards strategic diversification and prioritize actions accordingly. Cities can achieve economic growth by supporting strategic diversification of industry. To chart a growth roadmap, such strategic efforts should consider both the proximity of the new industry to existing ones, as well as its strategic value. To grow and attract complex industries, cities need to focus on accumulating and aggregating the right capabilities continuously.

Harmonize policy environment to create an unequivocal focus on economic growth at all levels: There are many priorities, programs, and policies currently. In the absence of harmonization amongst them, different actors in the economic system end up working towards different goalposts in a fragmented and inefficient manner, sub-optimally addressing the national imperative leading to its under achievement and wastage of resources in the process. While the need for different policies in different sectors cannot be denied, their tendency to work at cross purposes to each other needs acknowledgement and minimization. The classic case is of labour laws. Even taxation laws that may seem prudent from the viewpoint of revenue collection may sometimes be detrimental to long-term economic growth. Similar is the case with urban and rural development policies, which instead of working in a symbiotic fashion, work at cross purposes to each other. Direct efforts to increase entrepreneurship have been less useful than long term investments in the acquisition of productive knowledge and building appropriate infrastructure. Even today, nearly half of India's labour force is in agriculture, contributing merely one-sixth of its GDP. Macroeconomic policies like monetary policy, fiscal policy, industrial policy, regulatory and judicial environment, etc. have an important role to play in supporting this upward mobility in the economy but they cannot be looked at in isolation. The need of the hour is to harmonize these policies and create an investment environment that supports the movement of people away from agriculture into manufacturing and services.

In the book "How Asia Works: Success and Failure in the World's Most Dynamic Region," Joe Studwell emphatically highlights the pursuit of strong industrial policies which led to stupendous economic growth in Japan, Korea, Taiwan, and China. Countries like Germany, Canada, New Zealand, Australia are examples of other countries that have made policies like health, education, research focussed on the achievement of economic growth. United States is probably the best example of state-supported innovation and has, over decades, directed significant public investments into technology and innovation, which has been the reason for its stupendous economic growth, industrial policy, regional and urban policy action have to flow from each other, intertwined in cumulative and circular causation.

Understand the cause-effect relationship between economic growth and urbanization: While urbanization is a natural consequence of economic growth, the reverse correlation does not necessarily hold. Increased urbanization may not necessarily lead to increased economic growth. Urbanization supports economic growth only if it improves economic complexity, i.e., fosters conditions leading to increased accumulation and aggregation of productive knowledge and thus help push the frontiers of technological progress in society. State Governments redefine geographical boundaries through administrative orders and/ or classify cities into different categories without accounting for their specific economic contexts. These actions are based on a wrong understanding of the correlation between economic growth and urbanization. None of these artificial mechanisms affect economic growth. A uniform formula to define urban areas across the country to stop perverse competition among States regarding the declaration of statutory towns may be the need of the hour. However, what is absolutely clear is that these definitions do not matter much. What matters more is the ability of areas, whether classified as urban or rural, to boost economic complexity and not their classification as either. Every- thing else has to flow from this overarching focus.

Focus urban investments through the lens of Eco- nomic Complexity: Centrally Sponsored Schemes of GoI in the urban sector (U-CSS) largely consist of sector (water, solid waste, etc.) grants, focused on the creation of general infrastructure through implementation of top-down designs. They have, no doubt, been laudable initiatives with tremendous achievements across the country in the provision of basic infra- structure and services like roads, water supply, waste management, streetlighting, etc. However, actions to support economic growth have never been a direct priority in their design. Any such correlation is indirect and not measurable. Besides U-CSS, even State and local investments have not focused on the achievement of specific and measurable economic outcomes. Cities are systems of systems, and hence, siloed approaches produce suboptimal results and thus lead to inefficient use of money. India, on an aggregate, spends close to only 1 percent of its GDP on its urban areas. While on the one hand, the need to substantially increase such investments cannot be exaggerated; on the other, there is an urgent need to focus existing investments on the achievement of tangible economic outcomes.

Perverse incentives tend to get embedded in the urban ecosystem through over-reliance on 'grant-based' fund- ing. One, the focus of city governments on enhancing their own tax revenues declines, and they show no appetite for raising commercial finance due to the availability of 'easy' grants. Central and State Govern- ments need to recognize the principle of subsidiarity and implement the 74th CA in true spirit. Post the 74th CA, U-CSSs seem anachronistic. However, if they need to exist, they should target the achievement of key outcomes and allow city governments flexibility to use the funds for innovative, integrated, and bottom-up solutions to their context-specific needs.

Some examples of specific inputs needed by a city whose economy depends on agro-based industries are cold storage units, packaging units, marketing centres, transportation infrastructure for fast transport of fresh produce etc. A good sewerage network, water supply system are examples of general inputs, which by no means are unimportant. However, by themselves, they would not lead to improved economic growth unless specific inputs are provided for.

Investment in creation of a market for better seeds could cause an agricultural revolution; improved freight infrastructure could open up new possibilities for light manufactures; clarifying property rights and land-use regulations may lead to growth in the real estate sector. Provision of specific inputs like these as per the need of a city/ region's context should be the most important goals of urban investments at all levels.

Transform urban local bodies into economic develop- ment enterprises: Empower, empower, and empower. Our cities are rich, but our urban local bodies are poor. Lack of authority, autonomy, accountability (3As) has incapacitated them. The 74th amendment, though en- acted to solve lack of the 3As, has in practice, burdened our urban local bodies with huge responsibilities of service delivery without granting them the requisite autonomy to manage their own affairs. Over-depen- dence on State and national governments threatens to sever their links

with citizens and creates a complex principal-agent problem, wherein the principal, i.e., the citizens, have poor control over the way their agents govern them.

The underperformance and lack of capacity of our ULBs are mere symptoms of the underlying disease, which is a lack of control over their destinies. They are governed by risk-averse bureaucrats, who are transferred frequently at the whims of State Governments. This creates a very difficult problem of lack of ownership, continuity, and fearlessness. They do not have powers to formulate human resource policies suitable to their context or enact laws and regulations on subjects devolved to them as part of the 12th schedule. They lack full fiscal powers to levy and modify different taxes and financial powers to raise commercial finance from the market based on their capital needs. All these decisions need to be ratified/ approved by State Governments, which defeats the spirit of the 74th CA. ULBs as City Governments should be able to take these decisions independently.

A City Investments Support Unit should be formed at both the State and National levels to support cities to access borrowings and other innovative sources of finance. There needs to be statutory sharing of GST between all the three tiers of Government- Centre, States and ULBs. This may necessitate an amendment to the Constitution to allow for trifurcation of GST receipts between the three tiers of Government.

Climate change, economic growth, urbanization, energy use, quality of life, globalization, IR 4.0, structural transformation and jobs are real issues facing urban India. Such dynamic, complex issues will need to be addressed through integrated, holistic thinking. Cities need to create 'formal' mechanisms of sustained and meaningful dialogue among various stakeholders in order to have their eyes and ears open to the needs of the ecosystem. They should become better enablers and consumers of innovation by investing in appropriate human capital and infrastructure as well as by making their policy/ regulatory environments more flexible.

The ability of city governments to empower neighbourhoods, communities, and families in taking day-to-day decisions is crucial. Actions anchored by city governments in the fields of administration, finance, policy, planning, infrastructure, technology, etc. are intrinsic, inseparable, and important for economic growth. By only seeing cities as providers of basic infrastructure and services, we limit ourselves to a very micro view of urban governance. Economic growth has to be a key objective of the city government. This can only be possible if city governments are fully empowered in the true spirit of the 74th Amendment. The true strength of State and National Governments lies in the strength of their cities to function as economic development enterprises. Prioritize regional development as much as urban development: Metropolitan regions can offer a slew of productive benefits – efficient transportation infrastructure, labour markets, a vibrant knowledge economy, and ease of collaboration. Regions affect their local urban development as they provide financial and transaction services that reduce regional capital and trade costs. An understanding of these interactions is vital, and hence the need for a coordinating mechanism at the regional level cannot be exaggerated.

Regional Development Authorities have traditionally been construed as predatory organizations that usurp the powers of elected urban local bodies and impinge on their jurisdiction. Even if both have distinct geo- graphical and functional jurisdictions, they hardly work in a symbiotic manner due to the lack of coordinating mechanisms and appropriate governance structures. Thus, robust and well-coordinated regional governance systems have not emerged in our country. While the co- ordinating mechanism at the regional level is a must, it should exist in harmony with existing city governments. One way to make this possible is to separate key 'design' functions which need attention at the regional level - integrated economic planning, integrated water resources planning, creation of regional transit plans, etc. and house them with the regional entity. In contrast, the 'manufacturing' functions like providing infrastructure and services, creating local land-use plans, raising capital, entering into public-private partnerships, etc. can continue to be performed by the city governments in sync with the overall plan for the region. The regional entity can be visualized as a professional body, acting as the integrator and the shared support system for all local governments in the region. There is an example that exists in the world of technology; Apple – known for its iPhone – does not manufacture even one of those phones. It is, in essence, a design company, which outsources the manufacturing of components and assembly to manufacturers across the world. The company arguably designs some of the easiest-to-use and visually appealing smartphones in the world and is one of the biggest sellers of the mobile phone. Can we look at an 'Apple model of regional development'? Create an Integrated Ministry for Economic Growth, both at the Centre and State levels: This may sound radical but would be worth more than a fleeting thought. The intricate links between industrial policy, urbanization, regional development, and economic growth have been discussed in this paper. I propose the setting up of an integrated Ministry, both the national and state levels to bring convergence between these functions through the 'whole of Government' approach. Reduction of income and spatial inequality, promotion of symbiotic urban and regional development policies to foster the growth of systems of cities to unlock the fullest potential of key economic regions should be its key objective.

Mechanisms to achieve these objectives would be manifold, and, more importantly, different for different regions. Rather than having its own top-down, one- size-fits-all approach, it will support specific actions needed to catalyze economic growth in those regions. The Ministry's key role would be to nurture collaborative action through public, private entities across the board, thus bringing the much-needed harmonization between priorities, policies, programs, and functionaries at all levels of governments. The Ministry, both at the national and state levels, will foster right synergies between various actors and address evolving situations in an agile and effective manner.

While espousing the need for an integrated Ministry, I am conscious that the intention is not to create a top- down behemoth to direct the course of economic pol- icy. The world's greatest achievements have come, not from the dictates of governments but because of their calming presence. Not every aberration or distortion needs policy action. The need of the hour is to decentralize power, both in the public and private domains. Policymakers in a centralized setup, even with the best of intentions, cannot imagine the numerous variables that can impact outcomes at the local level. The core argument in proposing the integrated Ministry is not to centrally direct the course that cities and regions should take, but rather to support them in their local endeavors through creation of appropriate institutional, policy alignment and coordination between different actors in the federal system- funding agencies, government departments, other public and private entities and so on. Economic prerogatives are path-dependent and hence, different for different regions and cities. Cities and regions should continue to be the primary drivers of economic growth.

Urgency for Action: The Impending Lockdown

The demographic pressure of millions joining the workforce every year has coincided with the mega trend of automation driven by newer technologies. Companies are now building smarter factories that require one-fourth or less of the manpower needed than even five years ago. The employment elasticity to output has been declining across core sectors.

Companies are squeezing out inefficiencies in their supply chains through redesign of business processes and their enablement by optimization technologies. During 1993- 2012, employment elasticity was 0.24 (i.e., a 10% change in real GDP led to a 2.4% change in employment), which is a marked drop from 0.414 in the 1980s (The Future of jobs in India- A 2022 perspective; NASSCOM, FICCI, EY 2018). The employment elasticity to output is further expected to decline in the coming years, with the gradual adoption of radical technologies by Indian companies.

The world is adopting Industry 4.0 at hurtling speed with the introduction of industrial revolution enabled by smart sensors, automation devices, new generation of robots, Internet of Things (IoT), cloud computing, location detection technologies, human-machine interfaces, augmented reality, 3D printing, artificial intelligence (AI), big data analytics, and mobile devices among others. It is creeping into our day-to-day lives at a faster rate than ever before. Indian manufacturers are adopting smarter manufacturing to decrease the productivity gap with other countries as India's labour productivity is low compared to world standards. Meanwhile, the cost of hardware is falling. The new generation of robots are cheaper than traditional ones, have higher reliability, and thereby require less people to maintain. Manufacturing would simply struggle to absorb the release of workers from the less productive farm sector.

The other mega trend is anti-globalization. Between 2004 and 2011, global trade was growing almost double the rate of global GDP growth, of about 3.5% (Das, 2019). In other words, economies were very open. In 2009, after the recession, trade growth shrank but recovered for a couple of years. However, since 2012, global trade is growing slower than global GDP growth. Global GDP is back to over 3% growth rates after the recession, but trade has fallen below 3% (in most of the years). The fiscal and monetary policies pursued by different countries have been able to drive their economies back on track. But this is not accompanied by a similar growth in trade, as previously witnessed during 2004-2011. Countries seem unwilling to trade. Empirically, no country in the world has been able to sustain a growth of 8% or higher simply based on domestic demand. For India, it would be challenging to maintain a growth of 8% for over a decade, no matter what happens to global trade. The next decade would determine whether India makes use of its demographic dividend, or creates a nightmare. The time to act is now.

The structural shift of labour from traditional sectors, such as subsistence farming and petty trade into modern organized sectors, has been slow. Agriculture, in the year 2012, had an adverse employment elasticity of 0.044, i.e., for every 10% growth in agriculture GDP, employment declined by 0.4% (Sangita Misra, 2014). This surplus labour, in addition to being deployed in organized sectors, needs to find significant employment in other sectors in contract or self-employment / entrepreneurship models. This poses a significant challenge, as almost half of India's workforce is still employed in agriculture. On the other side, manufacturing output as a percentage of GDP has been almost stagnant for around two decades, with the share of labour force participation in the sector decreasing during that time period. If India is not able to provide jobs in high productivity sectors so as to drive this structural transformation, these workers run the risk of being permanently shut out of the job market.

Reducing employment elasticity, forces unleashed by Industrial revolution 4.0, and the setting in of anti-globalization means that we may reach a point of no return – the point when huge numbers of able-bodied, young Indians may be 'locked out of the jobs market.' Economic growth is, therefore, an urgent need. India's economic story is intricately interwoven with its urban story. Some say the window of opportunity is five years, some ten and others fifteen. We must remember that even fifteen years is a very small timespan in the life of a nation, especially as diverse as India.

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