Examining the role of Service Sector in Karnataka's economic growth and learning policy lessons

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List of Abbreviations

ABLE	Association of Biotechnology led Enterprises
ADB	Asian Development Bank
BPO	Business Processes Outsourcing
BT	Biotechnology
CAGR	Compounded Annual Growth Rate
CBIC	Central Board of Indirect Taxes & Customs
CMIE	Centre for Monitoring of Indian Economy
DEA	Department of Economic Affairs
DES	Department of Economics and Statistics
DPIIT	Department for Promotion of Industry and Internal Trade
EPZ	Economic Promotion Zones
ETP	Effluent Treatment Plants
EXIM	Export - Import
FDI	Foreign Direct Investment
FIRB	Finance, insurance, real estate and banking
GDP	Gross Domestic Product
GIA	Grants-in-Aid
GM	Genetically Modified
GoI	Government of India
GoK	Government of Karnataka
GSDP	Gross State Domestic Product
GST	Goods and Services Tax
GSVA	Gross State Value Added
GVA	Gross Value Added
IBRD	International Bank for Reconstruction and Development
IMF	International Monetary Fund
IOT	Internet of Things
IT	Information Technology
ITeS	Information Technology enabled Services
LPG	Liberalization, Privatization and Globalisation
MoF	Ministry of Finance
MSME	Micro, Small and Medium Enterprise
NASSCOM	National Association of Software and Service Companies
NCERT	National Council for Educational Research and Training
NIC	National Industrial Classification
NSS	National Sample Survey
NSSO	National Sample Survey Organisation
OECD	Organization for Economic Cooperation and Development
R&D	Research and Development
RBI	Reserve Bank of India
SDP	State Domestic Product
SEZ	Special Economic Zone
STPI	Software Technology Park of India
UN	United Nations
VAT	Value Added Tax
VTPC	Visvesvaraya Trade Promotion Centre

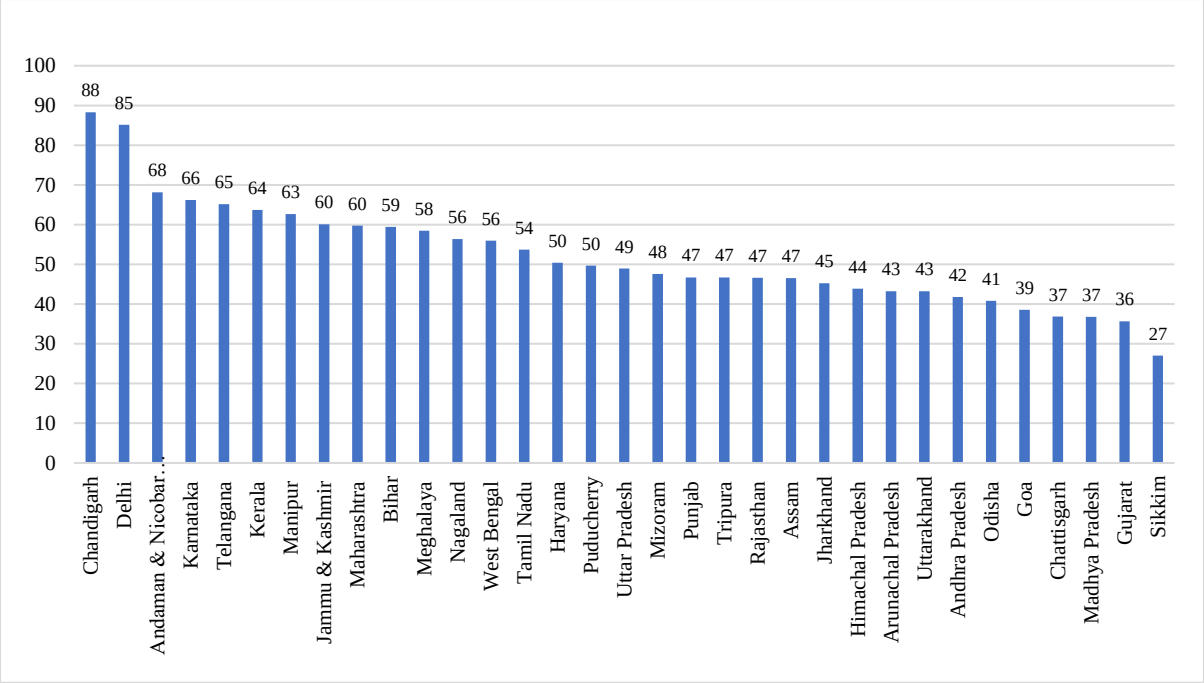
Chapter 1: Background

The unprecedented growth of service sector and trade, and their contributions to the national Gross Domestic Product in the post globalised phase of the 1990s, especially in countries like India, has attracted wide attention both in academic and policy circles. Services are the fastest growing sector in the global trade. Between 1970 and 2014, the trade pattern shows that services[1] constituted one-fourth of the world trade and increasingly services are becoming an important component of global production (Loungani, P et.al 2017). The emergence of service sector in developing countries like India meant that the evolution process bypassed the dominance of industry/manufacturing sector considerably in both shares of output and employment, and challenged the stylised facts learnt from following the growth trajectory of industrialised countries where the share of manufacturing went up in both output and employment replacing the primacy of primary sector and before the emergence of service sector (Fisher, 1935; Clark, 1940; Chenery, 1968; Kuznets, 1971). India's bypassing of the second stage and transitioning directly from the agriculture to the services sector has been termed as a mutation of growth (RBI, 2002). The share of service sector grew from about 38.6% of the GDP in 1980s to about 44.3% in 1990s to about 55.39% in 2020 with two-thirds of the FDIs coming in India for this sector (DEA, MoF, GoI, 2020), registering a compound annual average growth of about eight percent between 1950 and 2020. This trajectory helped India get out of what is usually termed as Hindu Rate of Growth of 3% per annum prevalent till the 1980s. The growth of service sector is internationally fuelled by what is grouped as modern services: finance, insurance, real estate and banking (FIRB) and transport, storage and communication services (Eichengreen & Gupta 2011). India also performed significantly well for services that can be splintered and unbundled in the global value chain, especially because of outsourcing made possible by the new globalised processes (Pazhayathodi, 2010; Ghani, & Kharas, 2010).

[1] Services refers to a large group of economic activities which do not belong either to primary or secondary sector. UN system of National Accounts defines services as, "Services are not separate entities over which ownership rights can be established. They cannot be traded separately from their production. Services are heterogeneous outputs produced to order and typically consist of changes in the conditions of the consuming units realized by the activities of producers at the demand of the consumers. By the time their production is completed they must have been provided to the consumers" and "The production of services must be confined to activities that are capable of being carried out by one unit for the benefit of another. Otherwise, service industries could not develop and there could be no markets for services. It is also possible for a unit to produce a service for its own consumption provided that the type of activity is such that it could have been carried out by another unit. This definition is practiced across countries to classify services. In India, National Industrial Classification provides classifications for services and at present it is NIC 2008 is used.

Both national and international factors including notable shifts in policies related to deregulation, liberalisation and easing of tariffs, as well as the incentivisation of the 'knowledge economy' through a new tax regime adopted by national and sub-national levels played a role in this 'tertiarisation' of the Indian economy (Banga, 2005; Banga & Goldar, 2007). This implies that both privatisation and globalisation processes played a significant role in the phenomenal expansion of the service sector witnessed in India and other developing nations. The emergence of information technology (IT) alongside the opening of the economy, removal of FDI restrictions, improving approval procedures, technological progress, creation of skilled labour and a large unsaturated domestic market coupled with emergence of modern services (business services, communication and banking) over traditional services (retail & wholesale trade, storage) at the global level made the Indian service sector grow its share rapidly and acquire the global brand identity (Mattoo, Rathindran & Subramanian, 2001; Eichengreen & Gupta, 2011; Choudhury, 2014, Mukherjee, A., 2013)). In this process of tertiarisation of the Indian economy, certain states play a more important role than others and Karnataka is among the top five states with the share of service sector in total GVA at 66.19% in the state during 2019-20 (Figure 1.1).

Figure 1.1 Shares of Service Sector in States Gross Value Added (GVA) in 2019-20



Source: Economic Survey 2019-20, Government of India

Chapter 2: The Present Research

This research is aimed at understanding the role of 'service economy'[2] in Karnataka and explore the policy implications for the future. The service economy is also referred to 'new economy', 'knowledge economy', 'post-industrial society' in varied context. While structural change is an inevitable consequence of economic growth with visible shifts in sectoral and occupational structure, it is important to understand these shifts vis-à-vis certain desirable policy objectives in a democratic polity that includes but is not limited to growth and productivity. For instance, employment is a major concern for a country like India which intends using its demographic to its advantage by creatively engaging youth in productive activities and also where livelihood security continues to be a major concern; or contribution to the state's revenue as that is critical to fund public expenditure, and also the stability and sustainability of the growth pattern is also important to ensure that this is reliable sector for its contributions to the economy. We examine the role of the service sector in Karnataka using these parameters evidenced through available data while also analysing the role of the state's policies and the interlinkages with the pattern that emerges from the analysis of data and policies.

Karnataka, a Southern Indian state that has come to be known as an IT and ITeS (IT enabled services) hub in India has taken a number of supportive policy initiatives to enable the growth of service sector in the state. Such as study becomes important to see whether these policies are rightly placed in terms of not only service sectors' contribution to growth but also to stability and its vulnerability to shocks such as global recession or the ongoing pandemic crisis. Unlike industry or agriculture, service sector is much more heterogeneous in nature and therefore we have undertaken a disaggregated analysis for sub-sectors to trace the diversity within. The analysis for Karnataka's case is embedded into the review of literature-both global and Indian, as well as linked with the analysis of relevant policies in the state. The rest of the report is divided into three sections. The following section, section 3, analyses the policies that have relevance for Service sector's growth and performance in Karnataka. Section 4, which is the main body of evidence analyses the growth and productivity of the service economy in Karnataka and also traces its

[2] **Service economy:** The term, "the service economy", conceptualizes not just a quantitative increase in terms of the service sector's share in the economy but also contains a connotation, if implicit, of qualitative change in which the sector should or could become a major driving engine for growth and innovation (OECD 2000). Not only the share of service industries in production, employment, consumption and trade grow to be higher, but also the proportion of services in intermediate inputs for other industries' production goes up.
https://faculty.washington.edu/karyiu/confer/seoul06/papers/kim_hj.pdf

contribution to employment and revenue through taxes. The fifth and the final section presents the conclusions and policy implications for Karnataka.

Chapter 3: A review of Karnataka's Service Sector related Policies

Karnataka has been an early starter in terms of attracting private sector investment for the IT, Biotech and BPO (Business Processes Outsourcing) industries largely enabled by various policy measures which have catapulted it to high growth in the last few decades. The state is the fourth largest among the Indian states and union territories in the share of services sector in the total GSDP of the state, which amounted to 65.4% in 2019-20 with a five-year average growth rate of 10.5%. It was the first state to set up a Software Technology Park in its capital, Bangalore, in 1997. This and various other policy measures has hugely contributed to the phenomenal growth of the services sector in the state. It is also one of the highest recipients of FDIs (Foreign Direct Investment) in the country, to the tune of USD 38,410 million (from 2007-08 to November 2020) and constituting eight percent of the all India FDI (DES, GoK, 2021). Today, Karnataka is also one of the largest exporters of software not only in the country but also in the world.

A large set of independent policies for various sub sectors within the services sector have a bearing on the functioning and performance of the sector. In the Indian context at sub-national level, the national policies also play a role at state levels. Broadly, at the national level, two policy initiatives associated with the 'Economic Reform Period": FDI Policy during the period of liberalization of the 1990s and the SEZ (Special Economic Zone) policy in early 2000s, played a major role in the expansion of the services sector in the country in general and Karnataka in particular. In early 1991, following a severe economic crisis where its foreign exchange reserves were dangerously low, India approached the International Bank for Reconstruction and Development (IBRD) and International Monetary Fund (IMF) and received a loan of $7 billion resulting in the new economic policy which led to the opening up of the economy and removing restrictions in the private sector. This led to the famous reforms – Liberalization, Privatization and Globalisation (LPG). The reform policies initiated in 1991 including export-import policy, technology upgradation and fiscal policy, and other reforms were comprehensive and sought to tackle the structural rigidities in the economy. These policies helped the service sector to use the opportunities that had opened up to the country because of the globalisation of processes and outsourcing of IT and BPO services thus paving the way for the investments in this sector (NCERT, 2014)

Apart from the LPG reforms, the Special Economic Zones (SEZs) as they are called also played a significant part in the progress made in the services sector. SEZs were successors of the earlier Economic Promotion Zones (EPZs) which suffered from

many bureaucratic hurdles and lack of laws governing the EPZs. The SEZ policy came about as an initiative of the EXIM policy statement of 1997-2002 for transformation of the earlier EPZs. The SEZ policies eased the restrictions of earlier channels by encouraging 100% FDI through automatic channels for various sectors. Apart from this, the other objectives included promotion of technology transfer, employment generation and infrastructure development. The formal SEZ Act came in 2005. The state governments too started having their own SEZ Acts and Karnataka became one of the frontrunners in this regard by bringing a SEZ policy in 2009.

The SEZs were envisioned as zones which operate as separate economic centres focusing on a particular sub-sector such as IT or apparel as a public private partnership. Many state governments including Karnataka took different measures to invite the private players to their states. Karnataka offered incentives such as exemption from entry tax, stamp duty, registration charges, reduction in tax on supply of petroleum products to SEZs, electricity tax exemption to SEZs and some capital investment subsidy (Tantri, M. L.,2013; Visvesvaraya Trade Promotion Centre, 2020). Karnataka was successful in attracting a number of IT companies starting their operations here because of specific incentives and certain other inherent locational advantages. We next examine specific policies for certain sub-sectors that contributed heavily to the service sector growth in the state.

3.1 Karnataka's IT Policy

The capital city of Karnataka, Bangalore, is the fourth largest technology cluster in the world. Karnataka invested in setting up of Satellite Earth Station for high-speed communication services to facilitate software exports in 1992 in Bangalore. It also established the country's first extended facility of the international gateway and network operations centre at the Software Technology Park of India - STPI (DES, GoK, 2020). It was also the first state to have an IT Policy way back in 1997. Karnataka is also India's largest software exporter, with electronic and computer software exports, with software and service export totalling US$ 77.80 billion in 2018-19. (Department of Electronics Information Technology, Biotechnology and Science and Technology, Government of Karnataka, 2020).

Karnataka also had other policies like the Karnataka i4 (IT, ITeS, Innovation and Incentives) Policy which was introduced in 2014 that was instrumental in the development of a technology innovation ecosystem in the state with a combined investments of Rs.6728 crores between 2014 and 2019 (Department of Electronics Information Technology, Biotechnology and Science and Technology, Government of Karnataka, 2020). As a result, the state houses a number of Research & Development (R&D) centres of big multinational corporations, in addition to

housing their other operations and also being base for a number of home-grown IT companies.

Some of the key factors for the successful emergence of the state as a IT hub go beyond IT policies alone and include industry friendly government, a tropical moderate climate in Bengaluru where extreme weathers are rarely experienced, single window clearance provisions, a good law and order situation compared to some of the other states, a highly skilled talent pool which was created by a high number of engineering colleges being set up in the state attracting students from all over the country, better connectivity with airports in tier 2 cities, good installed power capacity among other factors.

3.2 Karnataka's Biotechnology related initiatives

Karnataka is also known as the Biotech Capital of India (Ram, P., 2014). As Karnataka developed its IT infrastructure and policy, it also developed the Biotechnology space alongside. Bangalore had the advantage of housing a number of national educational and research institutions like the Indian Institute of Science, Raman Research Institute, Jawaharlal Nehru Centre for Advanced Scientific Research, National Centre for Biological Sciences, Central Food Technological Research Institute, which the state tried to use for pushing the biotechnology related initiatives. With the Biotechnology being seen as the next big sector in the technology innovation space, a vision group for Biotechnology was established sometime in 2000 to advise the government. The setting up of K-GANGA, (Karnataka Global Advisory Network Group on Agriculture), a network of overseas-based Indian scientists working on biotechnology with Bangalore connections was one of its first initiatives to encourage wider acceptance of the biotechnology and GM crops (Scones, 2003). Karnataka came up with its second policy, Millennium Biotechnology Policy-II in 2009 to harness the benefits of the biotechnology industry for the common citizens by offering numerous fiscal incentives like investment promotion subsidy, waiver of conversion fine, subsidy for effluent treatment plants (ETPs), interest-free loan on VAT, anchor unit subsidy, interest subsidy, and financial support towards patent registration, standardization, water conservation, and energy conservation. Special commitment was made in this policy in the area of biofuels (Ram, P., 2014). All these paid back in the form of revenue generation; in 2014, Karnataka was contributing to 26 percent of India's biotech revenues and the biotech export revenues contribution of Karnataka was $530 million.

In 2017, Karnataka came up with the third version of the Karnataka Biotech Policy for the period 2017-22, whose main aims were to encourage investments in new technology platforms of life sciences for effective multi-disciplinary collaborations. It

also envisions more streamlined financial incentives and concessions for larger investments (Special Correspondent, The Hindu, 2017)). The other broad aims were also to encourage R&D programmes in new emerging areas of technology for the development of bio-economy and also encourage new entrepreneurs by instituting funding mechanisms and mentorship programmes for biotech start-ups to stimulate innovations and discoveries (Department of Electronics Information Technology, Biotechnology and Science and Technology, Government of Karnataka, 2020). As of 2019-20, Karnataka occupies more than one third of India's Bio-Economy at USD 22.6 Billion and this contributes to nearly 9.3% of the state's economic output signifying its importance in the state's economy (DES, GoK, 2020).

3.3 Startup India and Karnataka's Startup Policy

Startup, as the name suggests is any company which starts off or kicks off with a new idea, typically something that has not been done before and is a novel idea which offers an innovation in either products or services. These are usually new age entrepreneurs starting off on a small scale and testing their ideas with the use of technology, internet and other new age novelties in the area of technology. India has provided the space for such innovations in the post reforms era with one of the biggest IT giants in the world today, Infosys, being a startup at one point in time. Recognising the need to promote such startup ideas and new-age small-time entrepreneurs, the Government of India came up with the Startup India scheme in 2016 with the main objective 'to build a strong ecosystem for nurturing innovation and startups that would drive sustainable economic growth and generate large scale employment opportunities' (DPIIT, Ministry of Commerce, GoI, 2021). As of Dec 2020, Rs.4509 crore have been invested in 384 startups through the fund of fund schemes and 41317 startups have been recognised by the DPIIT, which is the official organization hosting this scheme.

Karnataka had gone ahead and introduced its own Startup Policy (2015-2020) even before the Government of India came up with its first startup policy. This was also because of the recognition of Karnataka, especially Bangalore, which had already become home to nearly 5000 startup companies, as 'the only Indian city to be ranked within the best twenty startup eco systems across the world- by the Global Startup Ecosystem Ranking Report 2015. As per this report, the State's long and sustained leadership in driving the IT economy and conducive R&D ecosystems led to this development, as the state aspires to stimulate the growth of about 20,000 tech startups by 2020. It has a startup focussed funds of about UDS 47.3 million and about 10000 registrations on its StartUp portal (DES, GoK, 2021). The Karnataka government's 2021-22 budget also announced multiple policy initiatives including setting up of a new venture capital fund of Rs.100 crore to support new and

emerging technology institutes. The state has also decided to take measures to formulate cyber-security policy and data centre policy (Poojary, T., 2021).

The State Government has also set up the Centre of Excellence – Data Science and Artificial Intelligence in partnership with the National Association of Software and Service Companies (NASSCOM) which is an Indian non-governmental trade association and advocacy group focused mainly on Information Technology (IT) and Business Process Outsourcing (BPO) industry. With the emergence of Artificial Intelligence, Machine Learning and Big Data as critical key areas for future, the state is all set to provide the right impetus for enabling Karnataka to become a favoured destination among entrepreneurs which encourages the new technology world.

The subsequent sections would, among other things, also gauge the relationship of these policies with the patterns that we observe for growth and contributions of the service sector in Karnataka.

Chapter 4: Analyses of the Service Sector in Karnataka

In the context of advanced industrialised countries, the unprecedented growth in service sector output and employment is seen as a continuation of economic transformation. There is evidence that confirms Kuznets' hypothesis (Kuznets, 1966) who suggests based on empirical evidences from developed countries that service sector expands only when the secondary sector already acquired prominence in both value added and employment as a result of rapid industrialisation. In the late 1980's and the early 1990's, the OECD economies started witnessing the growth of service economy as a universal trend. Sectors like finance, insurance and business services experienced a strong increase in growth rates and accounted for almost 30 percent of the total value added in the economy. Conversely, the group of services with high employment growth rates and weak productivity levels included education, health and social services with low educational requirements (OECD, 2001).

Though classical economists' categorization of service sector as involved in non-material production was considered as unproductive as against the material creation of value through the production of goods, the debate has come a long way wherein service sector is no more treated as such. Rather the preponderance of service sector in country's national income is largely attributed to the high levels of income and subsequently high-income elasticity of demand with Engel's law[3] in operation. This led to the well-known work by Fuchs (1965) on emerging 'service economy' and subsequently of the famous proposition of 'cost disease' hypothesis of services by Baumol[4] (1967) given the operation of competitive market conditions. The recent literature has hypothesised the rationale behind the rising share of services is the outsourcing of service activities produced within the manufacturing sector resulting in the rising share of modern services (Eichengreen, B., & Gupta, P., 2011)). The last hypothesis highly evident in the post-colonial economies is the de-industrialisation hypothesis (Dasgupta & Singh, 2006), a result drawn from the framework of comparative advantage.

4.1 GSDP contribution and sectoral growth rates: a historical analysis

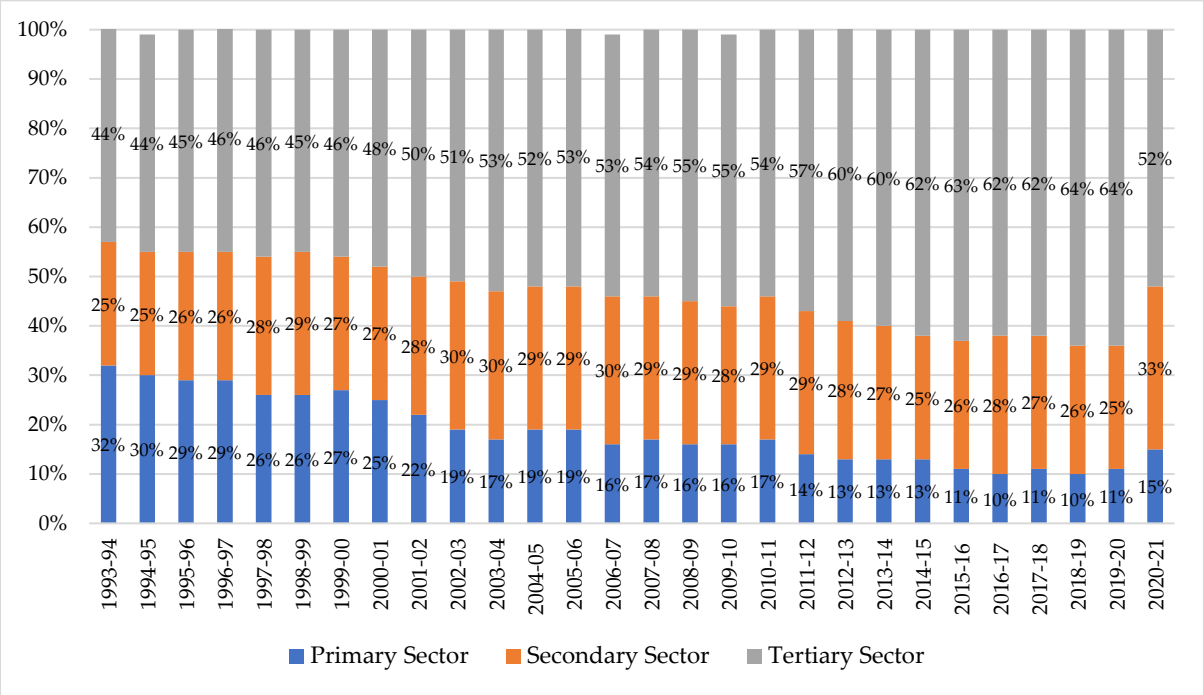
In this section, we undertake a detailed analysis of the Karnataka economy's growth and structure with special emphasis on service sector. The analysis is conducted for the years 1993-94 and 2019-20. The data on GSDP is sourced from Gross State

[3] Engel's Law: It is an economic theory which states that the percentage of income allocated for food decreases as income rises while the proportion spent on other goods increases.

[4] **Baumol's Cost Disease** (also called the Baumol effect) is a phenomenon observed in certain primarily labour intensive industries where there is little or no gain in productivity over time, resulting in rising production costs. https://www.marketing91.com/baumols-cost-disease/

Domestic Product of Karnataka to which splicing is conducted for constant prices for the base year 2011-12.

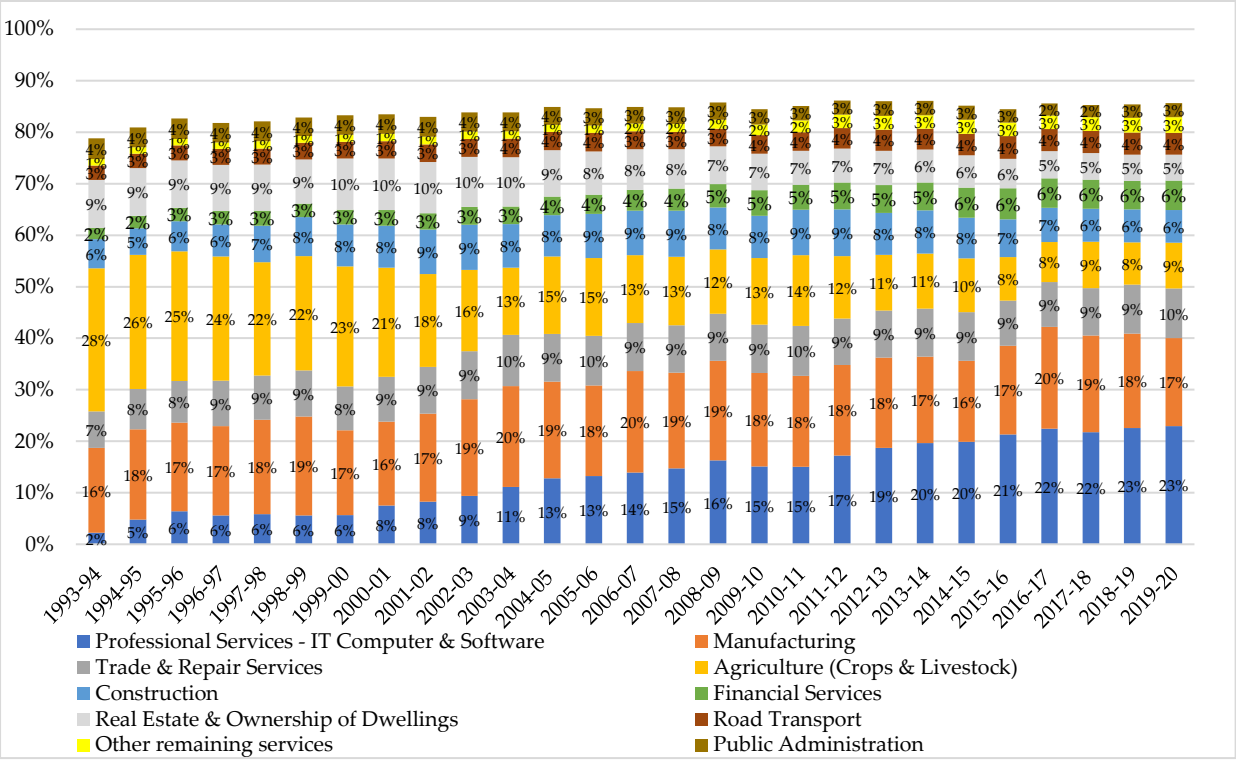
Figure 4.1: Shares of Aggregate Sectoral GSDP from 1993-94 to 2019-20 for Karnataka



Source: Author's calculations using DES data

At an aggregate level, the primary sector's contribution to GSDP has fallen from 32% in 1993-94 to 11% in 2019-20 while the secondary sector's contribution has remained the same (25%). The tertiary sector's share in the GSDP saw a dramatic increase from 44% to 64% in 2019-20 maintaining consistency. Most of the decline in the primary sectors' share is picked up by the services sector and accounts for sixty percent of the gross state domestic product (Figure 4.1). The share of agriculture (crops and livestock) between 1993-94 and 2020-21 has seen a consistent reduction in its contribution to GSDP from 28% in 1993-94 to 9% in 2019-20. Forestry, Fishing, Mining contribution has seen very negligible change in their contribution to growth (between 2 & 1 percent) between the period 1993-94 and 2019-20. Manufacturing sector's contribution to growth has been less than 20% implying that the sector has not been contributing to value added as it is expected to do so in the course of development. Construction (6-8%), Trade (8-10%), Road Transport (3- 4%), Public Administration (4%), Education (2-3%) and Health (1-2%) have shown consistency in contribution to GSDP over these years. Financial Services has seen a positive increase in its contribution from 2% to 6% during the same period. However, it is IT, Computer & Software that have seen the highest growth in its share from 2% to 23% in the contribution/size to GSDP. Real Estate & Ownership of Dwellings has seen a decline from 9% to 5% and the share of the Business Consultancy has also declined from 8% to 3% (Figure 4.2).

Figure 4.2 Share of top ten sectors by GSDP in Karnataka

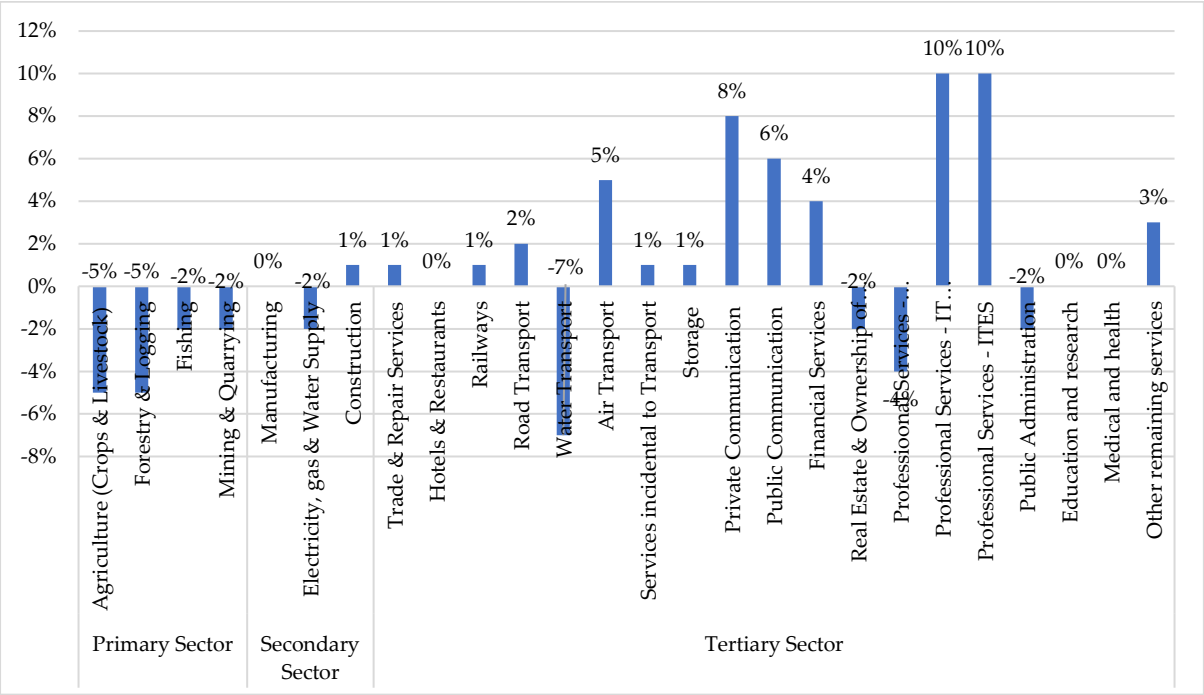


Source: Author's calculations using DES Data on sector-wise GSDP

Within the Service Sectors, it is Professional Services – IT & Computer Software that has consistently seen its share increasing beginning 1993-94 from 5% to 36% in 2019-20 followed by Real Estate & Ownership of Dwellings that has contributed largely but has witnessed a consistent decline over years from 21% to 8%. Further, it is Trade that has witnessed an increase from 16% in 1993-94 to 20% in 1998-99 but declined later to 15% in 2019-20. These three subsectors within service sectors have contributed to the major share in value addition.

At a sectoral level, we can see an average growth rate of Karnataka's economy between 1993-94 and 2019-20 is six percent on an aggregate level. It is service sectors that have witnessed higher than average growth rate during these three decades. Private Communication, Trade, Public Communication has witnessed the highest growth over this period. Professional Services saw a drastic decline while Agriculture and Forestry experienced lower than average growth (Figure 4.3). We further analyse the growth rates for the five periods to mark significant policy developments that is expected to have brought some structural changes and consequent growth effects, wherever necessary. Those are 1993-94 to 2003-04 (post liberalisation effect), 2003-04 to 2007-08 (Boom period), 2007-08 to 2012-13 (post-crisis period), 2012-13 to 2016-17 (pre-GST and Demonetisation), 2016-17 to 2019-20 (GST and Post Demonetisation).

Figure 4.3: Compounded Annual Growth Rate across Sectors (Between 1993-94 and 2018-19)



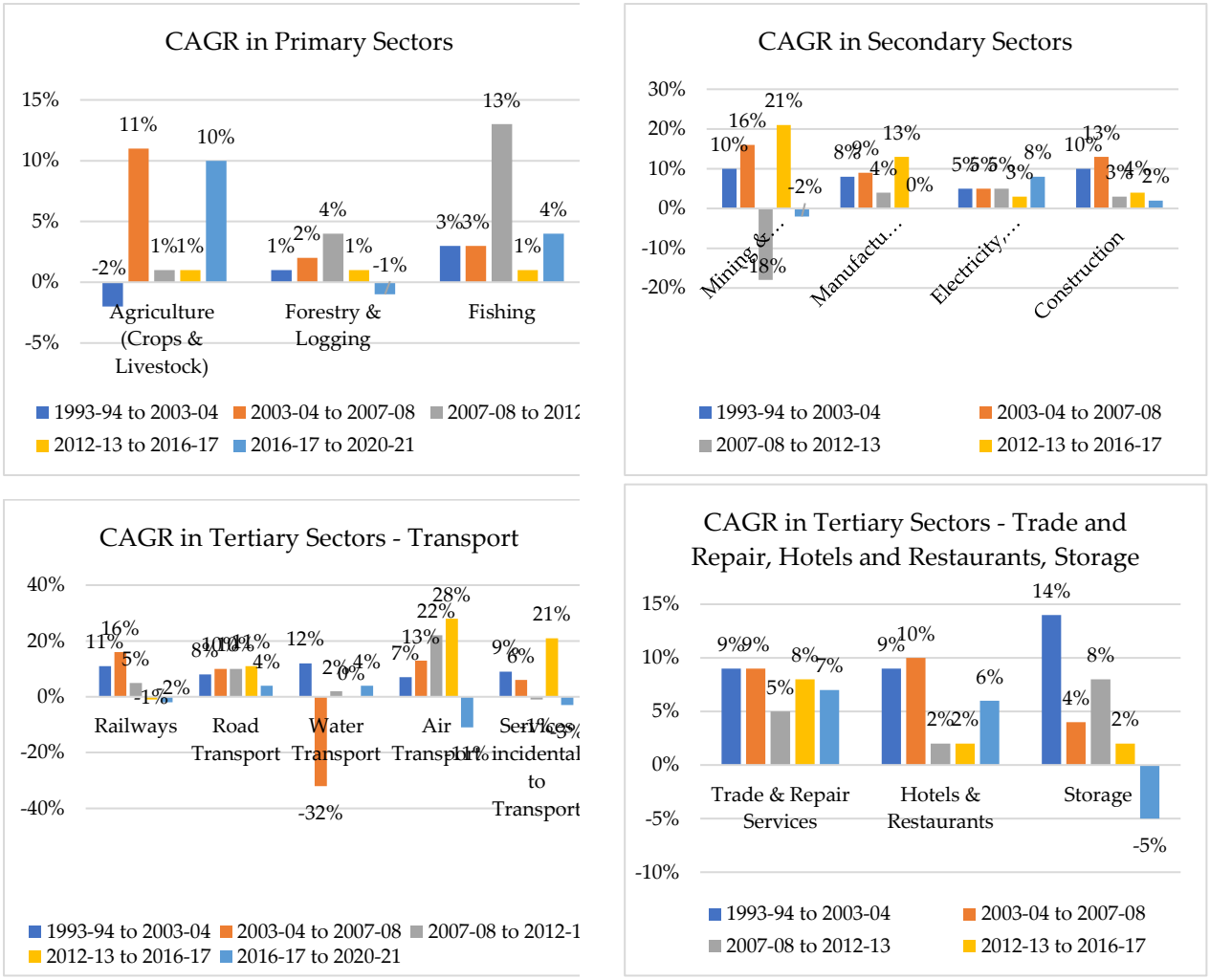
Source: Author's calculations using DES Data on sector-wise GSDP

Post liberalisation period (1993-94 to 2003-04): It shows that in the first period, IT & Computer Software has seen the highest growth rate per annum (24%) followed by Communication (21%), Storage (14%), Financial Services & ITES (11%), Construction & Mining (10%), Trade (9%) and Road Transport (8%). Agriculture (Crops & Livestock) saw a negative growth rate of 2% per annum in this period and Business Consultancy saw a decline of 10% growth per annum (Figure 4.4).

Boom Period (2003-04 to 2007-08): India's economy was booming with 9% growth rate per annum. At an aggregate level, almost all sectors fared the high growth across sectors. In particular, ITES saw the highest growth rate per annum (45%) followed by Private Communication (24%), IT & Computer Software (19%), Financial Services & Mining (16%), and Construction (13%)[5] (Figure 4.4). It is in this period public communication saw a trend very different from private communication when compared to other periods where they performed similarly.

[5] Please note that in Karnataka, based on the accounting standards, the Construction sector is considered as a part of the Industries, and therefore Secondary sector.

Figure 4.4: CAGR across all Sectors for Five Time Period



Source: Author's calculations using DES Data on sector-wise GSDP

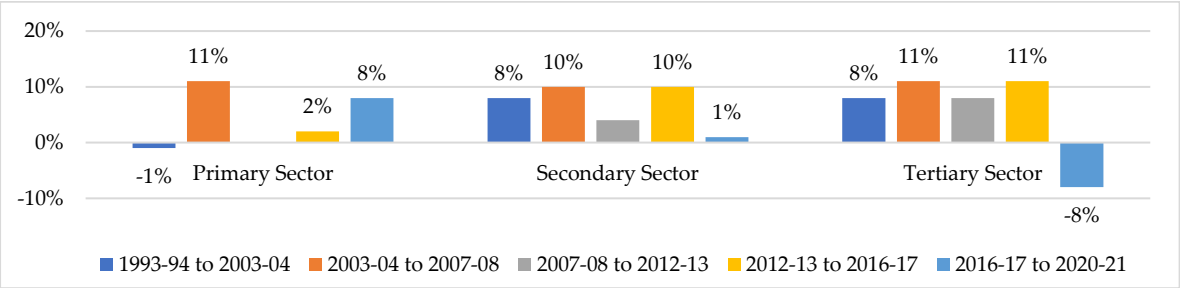
Post Crisis period (2007-08 to 2012-13): In this period when the world economy got affected due to financial crisis, Karnataka's economy saw a decline in the growth rate across all sectors. However, the sectors that performed fairly well was Fishing with 14% growth per annum. Construction saw a drastic decline from 10% to 3% during this period. Private Communication saw a decline from 24% to 11% and Public Communication from 13% to 10%, Financial Services from 17% to 11%, Professional Services – Business Consultancy from 11 to 3%, IT & Computer related software from 19% to 11%, ITES from 45% to 16%, Agriculture from 11 to 1%, Manufacturing from 9 to 4%. Hotels & Restaurants saw a decline from 10% in the previous period to 2% in this period (Figure 4.4). It is only Health, Education, Other remaining services, Storage and Forestry that saw an increase in growth during this period. It is noteworthy and social service sectors saw a higher growth though other sectors underwent drastic decline. Mining saw a negative growth rate of 18% per annum during this period. It tells us about the character of the growth in a globalised economy, where the domestic economy is meshed with and therefore

vulnerable to the global economic fluctuations. The dependence on the outsourcing of activities by multinational companies got affected due to global financial crisis and impacted the growth of these sectors in Karnataka. In turn, this downturn also seemed to have affected the demand for manufacturing and agricultural goods.

Pre-GST and Demonetisation (2012-13 to 2016-17): In this phase of the post financial crisis era, we witness Business Consultancy (26%) , ITES (22%) and IT & Computer related software (15%) respectively having higher growth rate per annum relative to other sectors. Mining and Manufacturing saw the next highest growth rate per annum of 21% and 13% respectively though it is important to note that the base was lower for Mining in the previous period which saw a negative growth. Trade saw an annual growth rate of 8% (Figure 4.4). Unlike the last period, Education and Health saw minute increases in growth rates in this period.

GST and post-Demonetisation (2016-17 to 2020-21): In the next and the most recent period where GST was enacted and demonetisation took place alongside the world economy slowing down due to declining demand, we have witnessed 100% decline in growth rate of Professional Services be it Business Consultancy, IT, & ITES, followed by Communication with negative growth per annum of 5%. Hotels & Restaurants that had seen a decline witnessed an increase in growth rates from 2% in previous period to 6% in this period (Figure 4.4). The nature of the growth is yet to ascertain as it could have been the growth in unorganised part of Hotels & Restaurants. Having said that, it is interesting to see that during this period, Public Administration, Education & Health and Agriculture have survived the game and have shown a growth of 10% per annum. However, it is also important to add that the last financial year of this period also experienced the first wave of Covid-19 pandemic, leading to lockdowns and economic slowdown, especially in trade and manufacturing.

Figure 4.5: CAGR for Sectors (aggregate), five time-periods

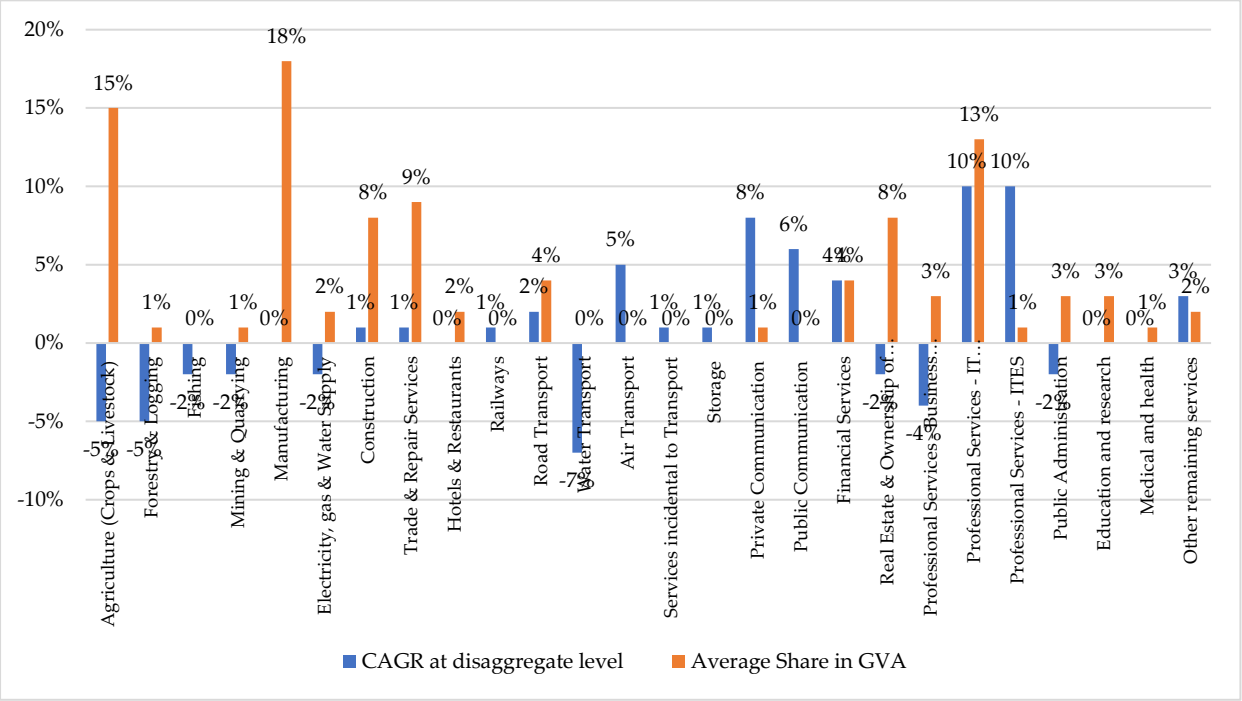


Source: Author's calculations using DES Data on sector-wise GSDP

At an aggregate level, we can see that all the three sectors witnessed the highest growth rates during the period 2003-04 and 2007-08 with Primary Sector having a growth rate of 11%, Secondary Sector with 10% and Tertiary Sector with 11%. Primary Sector consistently has seen less growth rates compared to Secondary and Tertiary Sector in all the periods expect the last period of 2016-17 and 2020-21 and this needs special emphasis. Service sector has witnessed a negative growth of 8% during this period while Secondary Sector has witnessed merely 1% growth (Figure 4.5).

As expected, a clear pattern emerges where export driven service sub-sectors drive the growth rates when the global economy is moving upwards, and the vice-versa when the global economy is experiencing decline and uncertainties. This obviously makes the sector in Karnataka, and perhaps everywhere else, much more susceptible to volatility in its growth rates. It is Professional Services – IT & ITES, Communication, and Financial Services that to be more volatile despite showing higher growth rates across periods whereas Trade, Public Administration, Education, Health, Road Transport have demonstrated relatively lower growth rates but remaining more consistent over different periods. During the most recent time-period, the higher growth rate service sectors have witnessed negative growth rates and thereby the shares of these sectors remained either stagnant or even slightly declined during 2016-17 and 2019-20. It also reveals that the sectors registering lower but consistent growth rates are largely dependent on domestic demand and partly includes public services, making those less vulnerable to global cycles. It is also important to note that these sub-sectors also are big employers and therefore, their consistency both derives from and contributes to the labour-intensive nature of the sectors. This implies that the state needs to maintain this balance between policies that promote sectors that are low-growth but stable, and those that are high-growth but volatile.

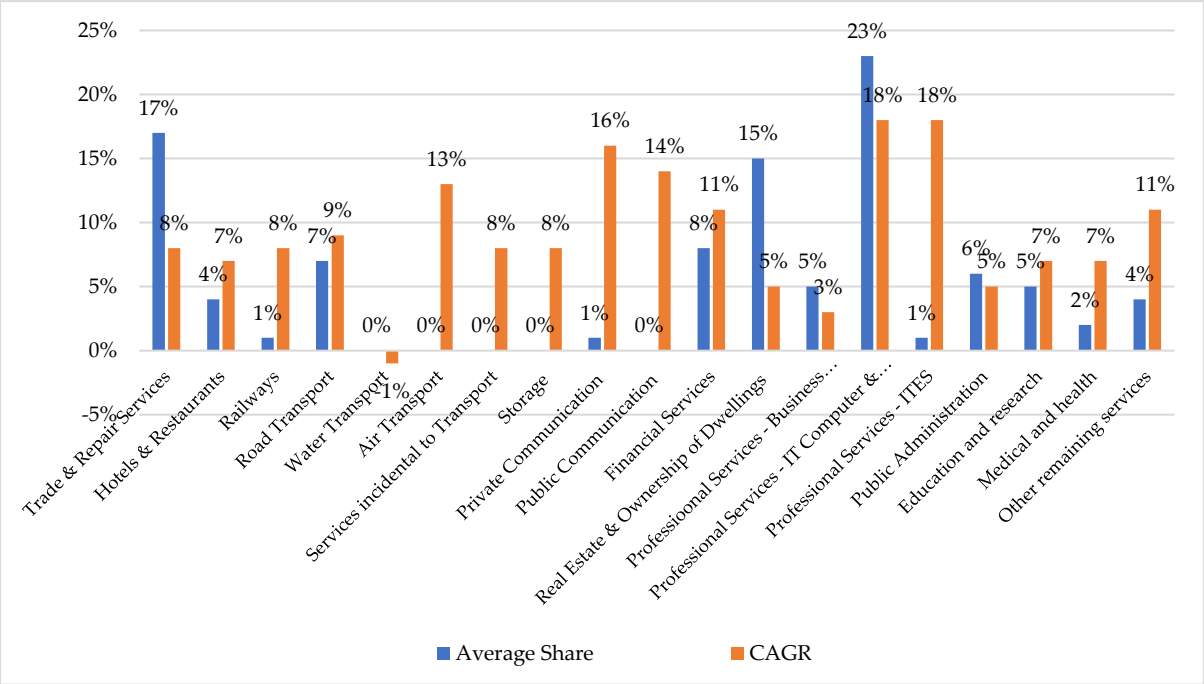
Figure 4.6 Growth Rates and Sectoral Shares in GVA



Source: Author's calculations using DES Data on sector-wise GSDP

A comparison between average shares and growth rates of output for the last two time-periods together (1992-93 - 2019-20) also says an interesting story about service sector's contribution and growth. At an aggregate level, we see that primary sectors' average share is 19% but, on an average, have had a negative growth rate of -14% while secondary sector's share is 28% and it has had a negative average growth of 1% between 1993-94 and 2018-19. At a sectoral level, all primary sectors have had a negative growth rate along with Electricity, Gas & Water Supply whose share is 2% and have had a negative growth of 2%. Manufacturing on an average has a share of 18% but its average growth is almost nil while Construction's share is 8% but it grew at only 1%. It is service sector whose average share is 54% but has had an average growth of 36% during the period (Figure 4.6).

Figure 4.7: Growth Rates and Sectoral Shares in GVA for the Services sub-sectors, 1992-93 to 2019-20



Source: Author's calculations using DES Data on sector-wise GSDP

Different sub-sectors of the Services also obviously do not necessarily have similar growth patterns. Trade's share is high at 17% but it has grown on an average of only 8% per annum; similarly, the Real Estate has a share of 15% and it has grown on an average of 5%. The difference between share (23%) and growth rate (18%) is less marked for Professional Services-IT & Computer related Software. Public Administration's share is 6% but it grew at 5%. Financial Services, Education, Health, Other remaining services, Road transport, Hotels & Restaurants have a share of 8%, 5%, 2%, 4%, 7%, and 4% and grew at 11%, 7%, 7%, 11%, 9%, and 7% respectively. Interestingly, Communication is the sector whose share is merely one percent on an average but has grown 16% on average (Figure 4.7). Despite the fast growth rate for the Professional Services-IT & Computer Software, their average share in value addition has remained less than that for primary sector and manufacturing, implying their continued importance for the state economy.

4.2 Productivity and employment

The rise of global value-added chain has changed the dynamics of both labour and output market at the global level for all the countries affecting production conditions in both manufacturing and service sectors, and subsequently also the evolution of the service economy itself. The production reorganisation and relocation taking place since the era of globalisation at an unprecedented scale and scope has made

countries relegate their production as per their comparative advantage increasing specialisation in goods and service production. This has however, macroeconomic implications on growth, employment and income distribution.

The adoption of service sector growth as an engine of economic growth has provoked a lot of debate within the economics discourse regarding its long-term sustainability and low productivity (Joshi, 2004; Banga, 2005). Several studies, in countries like United States and France, showed that despite a high share of service sector in total value added, service sector growth is associated with low GDP per capita or per person employed (OECD, 2001; Wolfl, 2005). The share of the service sector amounted to almost 70 percent of the total value added in most developed economies by 2002 whereas the OECD average of the share of service sector employment was 63.5% in 1998 (Wolfl, 2005) and increased considerably thereafter. This secular increasing trend of the service sector share in total employment conformed to the real decline in the number of jobs in the goods producing sector. This was partly a result of outsourcing where management and service functions may be located in one country while manufacturing activities in another, leading to rapid industrialisation of the developing world and de-industrialisation of the developed world.

In the context of developed nations, that a number of 'new' research is being claimed to be bearing evidence to the fact that, heavy IT investments since the 1990s had begun to yield high productivity returns pushing positive economic growth and concluded that the effect of an expansion of the service sector depends on which services are expanding – an expansion dominated by the more labour-intensive services, such as those user or consumer services (live entertainment, restaurants and hotels, personal services) and tax-financed consumer services (health, education), will tend to have a negative impact while capital-intensive services, such as transportation and telecommunications, will have a positive impact on growth (Maroto-Sanchez, 2012). It is true that service sector is heterogeneous in nature involving varied economic activities that require differentiated levels of education and skill intensity impacting the quality of employment, wage structure, social security and levels of earnings (Mazumdar & Sarkar, 2007; Nayyar, 2009).

In view of the diverse nature of the service sector, it is important to have a disaggregated analysis. The subsectors broadly include community, social and personal services; financing & insurance; real estate & business services; trade, hotels and restaurants and transport, storage and communication. The CAGR estimates shows that during the decades of 1950s, 1960s and 1970s, it was the trade, hotels and

restaurants, transportation and public administration and defence that grew at the faster rate contributing to the service sector growth whereas the growth in the 1980s is largely contributed by Banking and Insurance which registered a CAGR of 9.62% per annum in that decade. Further, the decade of 1990s and 2000's up until 2010, the growth of service sector is driven by communication (21.54%), banking and insurance (11.05%) followed by trade, hotels and restaurants (8.42%) (Mukherjee, 2015). This rapid growth is believed to have been perpetuated by market reforms that exposed the country's service sector to the global competitive environment.

The employment potential of the service sector, however, has been a contested issue in India. The Input-Output Tables for 1993-94 in terms of intersectoral linkages shows that the industry activities are 70% direct services-intensive and therefore service sector growth is indeed growth inducing. But forward and backward linkage coefficients show that inducing impulses from services have worked only through forward linkage that inherently is less effective on the rest of the economy (Hansda, 2001; Choudhury, 2014), leading to concerns being raised about the employment creation ability of the service sector growth in India (Mehrotra et.al, 2012; Verma, 2015). At the aggregate level, employment share of the agriculture sector hasn't seen a drastic decline in India. It was 76% in 1961 and stands at 53% in 2011 while industry's share in employment has increased from 11% to 22% during the same time span, and that of the service sector from 12% in 1961 to 25% in 2011. The evidence further shows that employment elasticity of the tertiary sector has fallen from 0.66 in 1981-90 to 0.24 in 2001-04 Pattanaik, F., &Nayak, N. C. (2011). . The slow rise in employment in services is attributed to higher labour productivity by highly skilled labour further reinforced by technological improvements and efficiency gains (Banga, 2005; Gordon & Gupta, 2005). Service subsectors that have huge employment potential like trade and transport, storage, community, social and personal services have not witnessed growth in employment elasticities raising concerns on the process of tertiarization in the labour market (Mukherjee & Majumder, 2008).

While the industry such as IT claims to have created four jobs in rest of the economy for every job created in the IT sector through the demand channel and subsequent multiplier effect (NASSCOM, 2005a), there are doubts spelled on the sustainability aspect of the service sector growth's trajectory of India given its emphasis on technology being capital biased and import intensive. It has also been argued that while tertiary sector employment is partly growing due to rise in per-capita income, it is partly also due to deceleration in secondary and primary sectors with service

sector emerging merely as an alternative to slackening employment growth in industry. This indicates towards a duality in terms of incidence of informality and wage inequality (Ramaswamy & Agrawal, 2012) where the real wage increase is seen only by the skilled professionals in service sector thereby being skill biased. This means though knowledge-intensive where highly-skilled services are necessary, services sector primarily employs low wage, low skilled population, resulting in deskilling (Gatta, Boushey & Appelbaum, 2009). This means that relatively larger shares of employment that are created in the service sector is at the lower levels of income distribution (Nayyar, 2009) requiring lower levels of educational qualification, with consequences for the demographic profile of the country (Planning Commission, 2011; Deloitte 2011).

Labour market outcomes are critical to economic policy evaluations. Because it is the labour market that provides stimulus to aggregate output growth through the provision of employment opportunities but also ensures economic and social justice. In this section below, we intend to understand, the growth and distribution of employment across sectors in Karnataka using NSS Employment and Unemployment Surveys. Till 2016, NSSO was the sole official survey organisation that provided data once in five years at a national level since 1973-74. We have used NSS 50th (1993-94), 55th (1999-2000), 60th (January 2004-June 2004, 61st (July 2004-June 05), 62nd (2005-06), 64th (2007-08), 66th (2009-10) and 68th (2011 -12) rounds to analyse and assess the employment trajectory in Karnataka at a disaggregated sectoral level. A concordance across the rounds is been done as per the sectors mentioned in State Domestic Product of Karnataka that coincides with National Industrial Classification 2008.

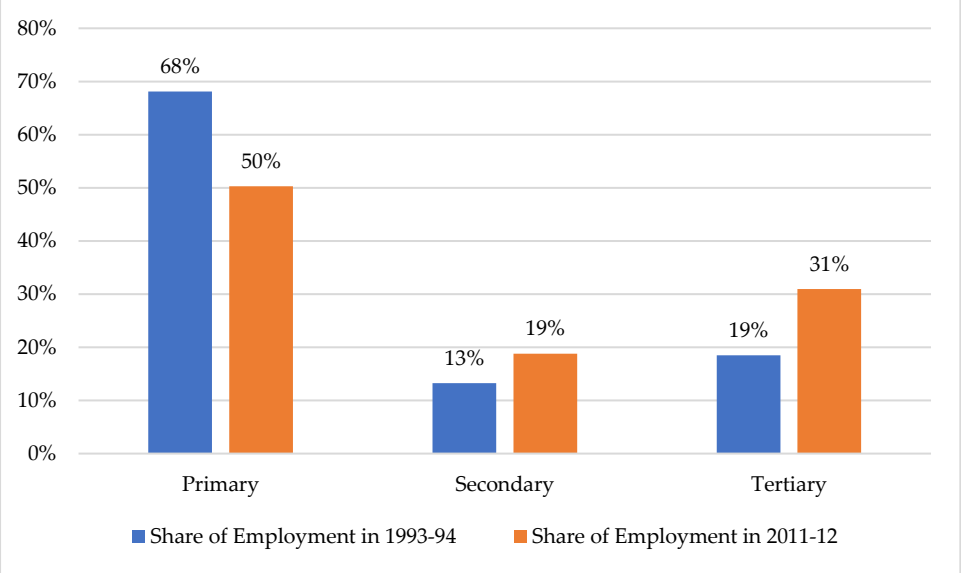
A time series analysis using NSS rounds of employment and unemployment shows that the construction sector employs the largest share of the casual workers[6], and this share went up from 25% in 1993-94 to 98% in 2011-12. Manufacturing sector continues to employ the higher proportion of regular salaried workers since 1993-94 (20-25%) followed by public administration. This shows the significance of the sectors in maintaining stability in employment. Crops continues to have largest proportion of self employed in the economy with its share always being more than 60% during this period. The next few sectors that have highest share of self-

[6] The definition of 'Other Types of Work' has changed over a period of time. It basically has a character of casual work. Over time it includes works like those in public works (MGNREGA) and other such similar work in private sector. There is no standard definition. Over time, the clubbing has happened with casual work itself.

employed persons are livestock, trade and manufacturing. The pattern is observed across all time periods (Table A2.1).

At an aggregate level, one can see that primary sector's share in employment has seen a decreasing trend from 68% to 50% but manufacturing has seen a slight increase from 13% to 19% and service sector share in employment has seen a larger increase from 19% to 31% (Figure 4.8). What emerges is that though the share of service sector in total employment has grown, the increase is not as high as it's seen in the share of GSVA being contributed by the Service Sector in the state. As a result, although there is a movement of people from primary to secondary and tertiary sectors for employment but the combined employment though secondary and service sector workforce is still lower than the workforce in primary sector.

Figure 4.8: Share of employment across two time periods (1993-94, 2011-12)

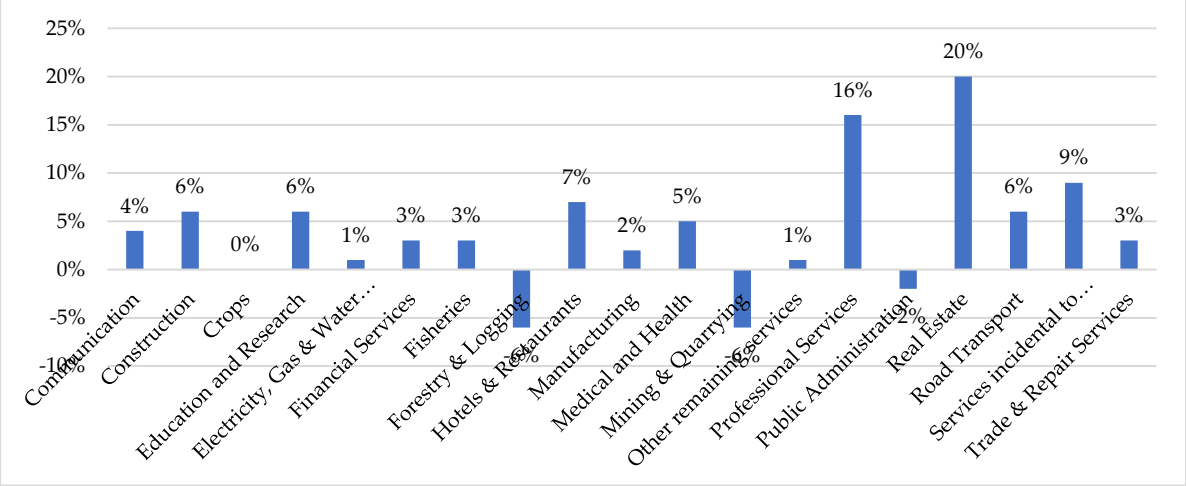


Source: Author's calculations using NSS employment surveys

The rise of 'new' industries in both services and manufacturing coincided with growing informalisation of labour market. Communication, Public Administration, Education, Professional Services, Electricity, Gas & Water Supply, Education, Health, Financial Services have a larger share of their workers employed as regular salaried while Hotels and Restaurants have only around 30 to 35% of the workers as regular salaried with similar figures within Road Transport (less than 40%). One can see increasing share of workers are either self-employed or casually employed in road transport. Mining has seen a consistent decline in regular salaried share of workers. Construction sector employs workers mostly as casual workers. However, what is more startling is that the average employment growth has been merely one percent per annum at the aggregate level in Karnataka during this period. But the period has

witnessed shifts in terms of declining employment in some sectors and rise in others (Table A2.2).

Figure 4.9: Growth Rate of Employment (CAGR) between 1993-94 and 2011-12



Source: Author's calculations using NSS Employment Rounds survey for Karnataka data

Among the sectors, Real Estate is the sector which has been a larger avenue for employment (20%), 16% is from professional activities, 9% from Services Incidental to transport, followed by Hotels & Restaurants (7%), Education, Construction & Road Transport (6%), Medical & Health (5%) and Communication (4%). Crops has seen no much change in employment growth rate with the rate being nil whereas the manufacturing and trade has seen an employment growth of 2 and 3 percent respectively for the period under consideration. Public Administration has seen a negative annual average growth rate of employment of 2% indicating increasing disinvestment of public assets and institutions. Forestry and Mining has seen a negative annual average growth rate 6% with them being the worst performers.

Manufacturing has seen only 1% growth in employment while Crops has seen nearly zero percent growth. Within sectors, the employment growth in Professional Activities has seen the highest growth rate of 16% followed by Hotels & Restaurants (7%), Construction, Road Transport, Education all having grown at 6% each, Health 5%, Communication 4% and Trade 3%. The highest growth rate in regular salaried employment is seen in Professional Activities (19%) followed by Health (7%), Other Remaining Services (7%), Education, Hotels and Trade (6% each), Road Transport, Manufacturing and Communication (5% each). Public Administration has seen a decline of growth in regular salaried employment by 2% over this period. Other Types of Work and Casual Workers can be clubbed to understand casualisation/quality of employment across sectors within this time period and it shows that Fisheries (17%), Hotels & Restaurants (15%) have the highest growth rate

per annum. Road Transport, Construction, Financial Services all have seen a growth of 6% in casual workers followed by Electricity, Gas & Water Supply 3% and Trade and Professional Services 2% each (Figure 4.9).

This analysis confirms the hypothesis that while service sector has driven the growth in Karnataka's economy, the growth rate for employment has not kept pace with the economy's growth rate. Karnataka's economy has been growing in value addition at the rate of 6% per annum between 1993-94 and 2011-12 but has been able to see the employment grow only at 1% per annum for the period. The service sector's growth has been growing at 8% per annum but has added only 4% to the employment. The decline of employment in other sectors have been higher than that, and hence the overall growth rate for employment has been only one percent per annum.

It is also important to note that the Service Sector growth in value addition has seen a decline during the post GST and demonetisation period. Crops (61% to 50%), Manufacturing (10% to 12%) and Trade (7% to 9%), Construction (3% to 6%) and Road Transport (2% to 4%) continue to be the largest employers. Further, although the largest growth in employment of regular salaried workers has happened in Professional Services from 1% to 13% the share of workers in professional services in total workers has grown from merely 1% in 1993-94 to 3% in 2011-12 (Table A2.1). This raises issues about the implications of the process of tertiarization of the economy on poverty reduction, inequality, skill-development, employment and income distribution, which is what we discuss next.

4.3 Service Sector, Inequalities and Sustainability

The period of high growth in the service sector among Indian states has coincided with a declining trend in the poverty head count ratio (Ghani & Kharas, 2010) but the period has also seen the expansion of inequalities in income and consumption (Nagaraj, 2000). The trends in employment since 1973-74, has shown decline in employment elasticity of output in the Indian economy and the improved growth since 1980s did not result in a proportionate growth in employment implying detrimental effects on income distribution. Further, the boom period of Indian economy with 8% growth per annum between 2003-04 and 2007-08 is shown to have witnessed (Kannan & Raveendran, 2009) stagnation in employment due to increasing productivity, import intensity and increasing capital intensity in production further having detrimental effects in surplus distribution and domestic market expansion. The wide disparity between the growth of income from services (also within services) and commodity producing sector tends to result in inflation especially when rising income of those already employed expands the tertiary sector

value addition. This implies no simultaneous expansion in value added and employment generation resulting in no commensurate increase in demand, rather a higher demand for luxury and imported goods (Bhattacharya and (Mitra,1989; Mitra,1990).

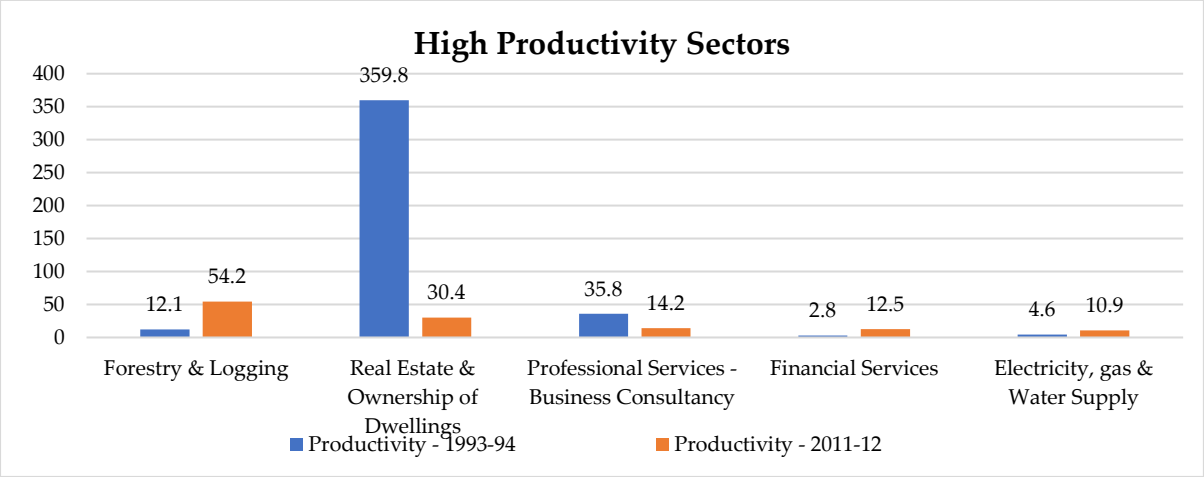
This pattern can prove to be unsustainable and non-inclusive as these growing subsectors requires intense skill set and high educational requirements (Banga, 2005; Acharya, 2002a; Ramanadh et.al 2012). Though service sector has the largest share of employment within the total organised sector employment, it is largely dominated by public sector, and therefore, a large part of the employment is in unorganised sector comes with limited job security (Dasgupta & Singh, 2006; Mukherjee, 2015). It was found the share of private sector services is growing in fast-growing subsectors of business services, communications and banking characterized by high productivity levels (Gordon & Gupta, 2005). This pattern of employment and growth may have serious implications for inflation, income distribution and balance of payments because of the fact that '…income from service sector is growing much in excess of the demand generated for the services by the commodity sector' (Bhattacharya & Mitra, 1990).

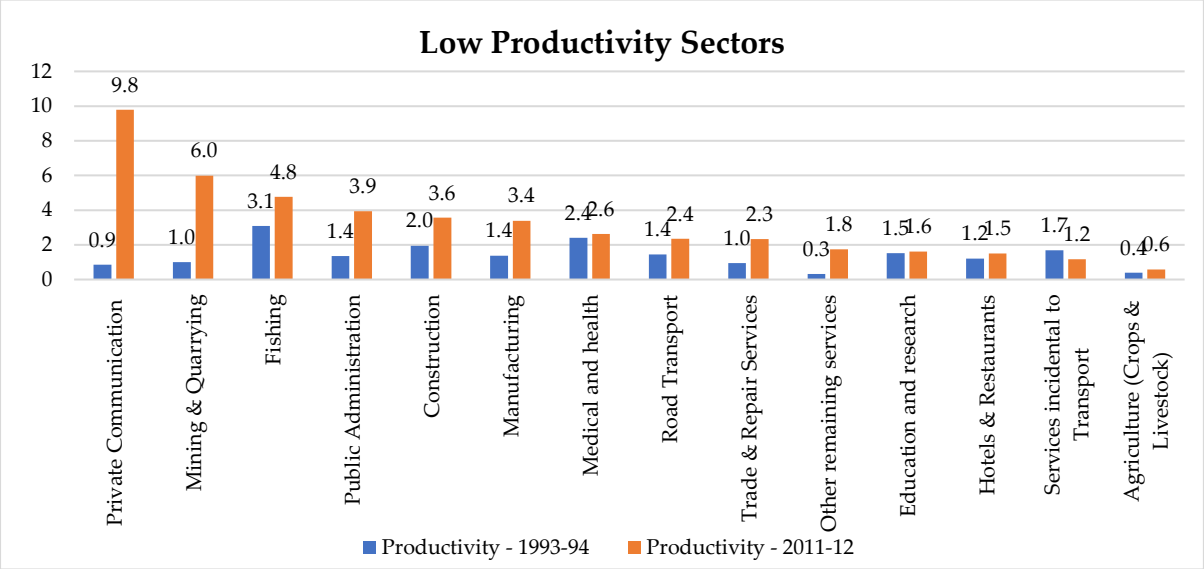
In order to examine this issue further in Karnataka, we analysed the Activity Status data in Karnataka.[7] Crops, Manufacturing and Trade continues to be the principal economic activity that people engage in and over time the composition of sectors have not changed. Within these sectors, it is crops that has been the principal economic activity followed by manufacturing and trade. However, since 2004-05, we can see that manufacturing's share as subsidiary activity is increasing. Trade increasingly over time has seen becoming both a principal economic and an important subsidiary activity (Tables A2.3).

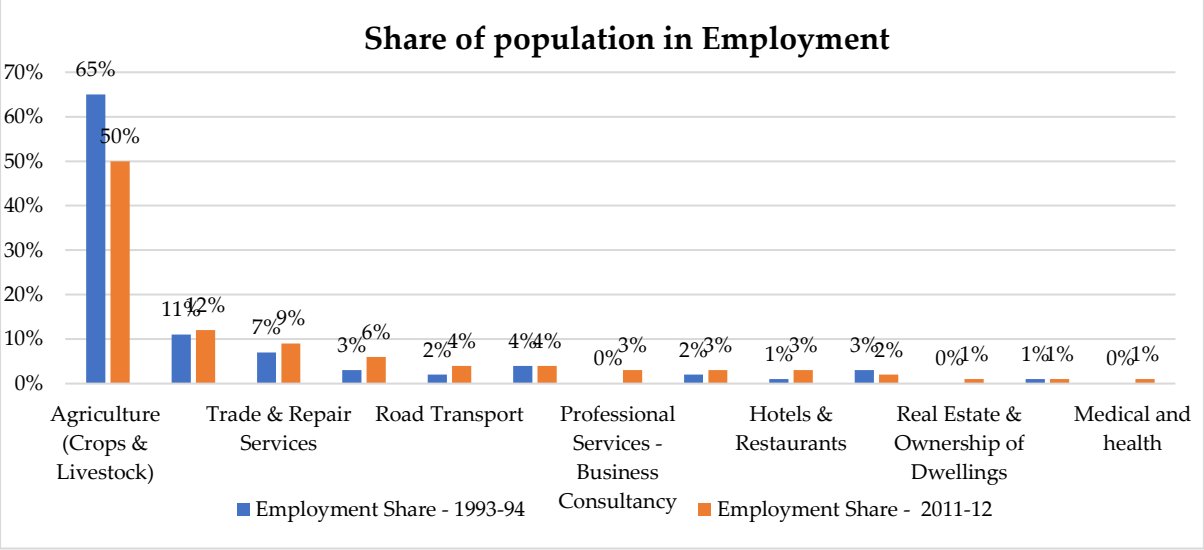
[7] The activity status is determined by the activity situation in which a person is found during a reference period or at a point of time under reference, which occurs with the person's participation in economic and non-economic activities. According to this, a person will be in one or a combination of the following three statuses during a reference period: (i) working or being engaged in economic activity (work), (ii) being not engaged in economic activity (work) and either making tangible efforts to seek 'work' or being available for 'work', if the 'work' is available, and (iii) being not engaged in any economic activity (work) and also not available for 'work'. Activity status (i) above is associated with 'employment', (ii) with 'unemployment' and the last with 'not being in the labour force'. Activity statuses mentioned in (i) and (ii) above are associated with 'being in labour force'. (Source: http://www.mospi.nic.in/sites/default/files/publication_reports/concepts_golden.pdf)

Over time, large proportion of people are increasingly having only one principal economic activity. In Crops, 57% have principal activity (PS) only while 32% have been involved in both principal and subsidiary activity. (PS+SS.) This means people who are largely taking up crops as a principal economic activity also in a larger proportion take crops as subsidiary activity. The uncertainty involved in crops might be a possible reason and this is visible across time. Forestry also has shown this trend for the initial years but that has reduced over time. For more than 90% of those involved in sectors like Fisheries, Manufacturing, Health, Education, Storage, Real Estate, Financial Services, Communication, Construction, Electricity, Gas & Water Supply, Road Transport, it serves as the principal economic activity without having to engage in any subsidiary activity. Workers in regular salaried jobs are the ones who are involved in one principal economic activity, followed by self-employed whereas casual workers are generally the ones who have involved in both PS + SS and this shows the precarity of the nature of employment (Table A2.4). The proportion of people who are PS only and in regular salaried jobs hasn't seen any drastic change since 1993-94. This again shows that growth hasn't resulted in increasing regularisation of jobs over time.

Figure 4.10: Comparison of Productivity and Employment shares across sectors between 1993-94 and 2011-12







Source: Author's calculations using NSS data on employment surveys for Karnataka

What emerges from the discussions on employment and inequality analysis is that though service sector has contributed to employment growth, it has largely been for skilled and highly educated segments in high income category, which could have contributed to enhanced inequalities. This means while it is a positive sign that it can contribute towards pushing our economy to be more skill-driven, it also has the potential to contribute to skewed income-growths that could imbalance the demand in favour of luxury goods and conspicuous items. It means while it is important for enabling service sector, it is also important to have supportive policy instruments for enabling employment – focussed agriculture and manufacturing sectors so that the macro-economic balance remains maintained.

4.4 Services Sector and government revenue

Taxes, both direct and indirect, are one of the biggest contributors to the revenue receipts of any state. The share of tax revenues in the total revenue receipts of any economy gives an indication of the health of its finances which in turn reflects on the potential of tax efforts in the country in order to raise revenues based on the level of economic activity. Direct taxes like income taxes, corporate taxes, and wealth tax are usually the progressive taxes which are aimed at redistribution of wealth to the socially and economically backward classes through the medium of public policies and schemes benefitting such classes. On the other hand, indirect taxes such as Goods and Services Tax (GST), Customs Duty, Excise Duty, Value Added Tax (VAT) prior to GST and Services Tax (prior to GST) are also important taxes to raise revenues based on the economic activities of the state, which are paid by consumers for the purchase of goods or availing of some certain services. Certain criticisms against indirect taxes is that they are borne equally by all classes irrespective of their level of income. However, this burden of bearing equal taxes is reduced to some extent by the taxation policies which are adapted by the state. Although GST was envisioned as a single rate of tax, in India, there are about four to five rates across various commodities. For example, essential commodities like agricultural produce which are essential goods, and services such as those provided by health and educational institutions are outside the ambit of GST, and hence become differential and to that extent are not necessarily regressive. Similarly, some of the luxurious goods and services for example, salon services, cinemas etc. whose access is limited to certain classes are charged at a much higher rate.

The Tax to GDP ratio for a country or the tax to GSDP ratio of a state are used as a common measure across various developed and developing countries to study the extent of administrative efficiency of the state to raise revenues. The revenue receipts for Karnataka mainly include state's own tax revenue, state's non tax revenue,

devolution from GoI and GIA and contributions. Tax revenue mainly includes taxes on income & expenditure, entry tax, property and capital transactions, VAT, sale of goods, commodities & services, state excise, motor vehicle taxes and the state's share in central taxes. The share of state's own tax revenue in the total revenue receipts was about 66.7 % in 2020-21(Revised Estimates-RE). The Goods and Services tax was one of the main sources of tax revenue comprising about 27.7% of revenue receipts in 2020-21(RE). Karnataka's tax to GSDP ratio has been better compared to some of the other states, although this has seen a declining trend in the recent years. This decline has been attributed to the change in the GSDP base and methodology. However, with increased tax base in GST, the ratio is expected to improve (DES, GoK, 2021).

As taxes form an integral part of the revenue receipts for Karnataka, from the perspective of our study, it becomes important to understand the taxes that accrue from the services sector as the state is heavily dependent on this sector for our primary economic activities. Apart from studying the services tax itself, we also analysed the other taxes like corporate taxes, excise duty, VAT, Sales Tax paid by the services sector.

To extensively analyse the various types of taxes collected / paid in the state, we took data from the Centre for Monitoring of Indian Economy (CMIE) Prowess IQ database that collects data of all kinds of accounts from private companies and public sector companies, including the balance sheets, profit and loss accounts, capital works in progress accounts, other financial statements, share prices and capital history, etc. From this database, we picked out companies which belong to Karnataka (identifying the companies headquartered in Karnataka) as it is impossible to specifically calculate the financials only based on operations in a particular region. We went with the assumption that these companies, if they had operations in other states, would be offset (counterbalanced) by the information lost from other companies which had headquarters outside Karnataka, but had operations here.

Here, for each of the companies, we have collected the time series data starting from 1991 to the year 2020 where different components of taxes were analysed. Some of these components include Sales Tax, GST, VAT, Excise Duty, Service Tax, Total Direct Taxes, Corporate Tax, Total Indirect Taxes and income variables like total income to understand the trends in general, and specifically to see if the shares of GSDP and the growth across the three sectors: agricultural, industry and services sector actually translates to income for the state in the form of tax revenues. In total,

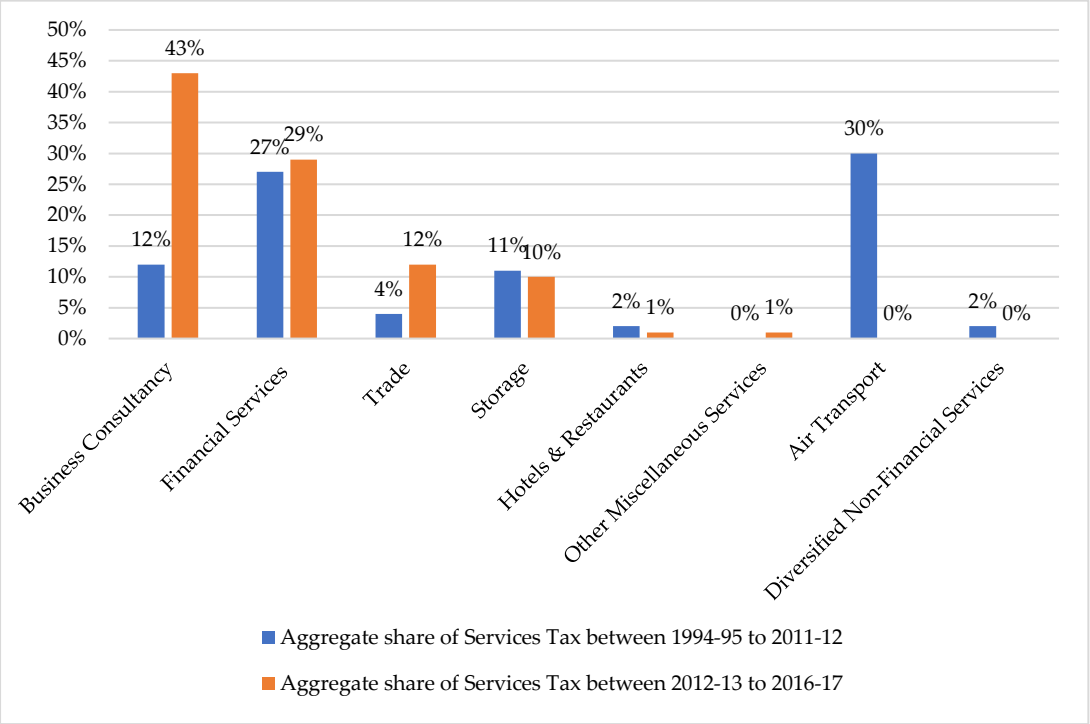
for Karnataka we had data for about 2289 registered companies which were aggregated into sectors based on the classification already provided by the CMIE Prowess, according to the industry. We then aligned these 'industry' categories as per our 23 SDP sectors as per the State Domestic Product report for further analysis of sector wise performance, especially in tax collections. In the sections below, we analysed the different components of tax to understand specifically the contribution of the services sector in the various types of taxes.

4.4.1 Services Tax

The taxation of services began in India in July 1994 starting with the taxation on telephone services, non-life insurance services and stock broker services. As of today, with an array of services being introduced in the economy, a number of services are taxable excluding only those that are in the negative list. While India adopted the concept of 'positive list' till 2011-12 where the services to be taxed were listed, due to expansion and array of services being offered in India, it moved to a concept of 'negative list' starting 2012 onwards where only certain essential services were excluded which would automatically include all array of services in the economy.

We looked at the aggregate service taxes collected across the various service sectors. The top sectors contributing to the services tax include Business Consultancy, Financial Services, Trade, Storage and Hotels and Restaurants. The share of business consultancy, largely representing IT and IT based services, in total service tax collected has increased more than three and a half times between two time periods: 1994-95 to 201-12 and 2012-13 to 2016-17, and that of trade increased three times during the same period – these two registering the most drastic shifts that came mainly at the cost of decline in the contributions of Air transport. Although this increase in revenue from service tax may not be as high as their contributions to growth, it is indeed significant. Policy measures such as tax holidays and incentives given to the IT sector to boost investments in the state, exports being exempt from tax could have kept the services tax collected from this sector lower than what it could have been but it can also be argued that in absence of these measures, the sector could not have seen the growth that it experienced in the state (See Figure 4.11).

Figure 4.11: Aggregate share of service tax collected by sectors



Source: Author's calculations using CMIE Data on services taxes collected between 1994-95 to 2019-20

We also analysed the ratio of services tax to the Services Sector GSDP to see how well the revenues were being generated compared to its contribution to growth. Overall, the services sector growth has not translated itself into tax revenues through service tax for the state. At an overall level, the contribution of service sector in service tax was about 2.6% of the service sector GSDP in 2012-13. The ratio has not shown any consistent pattern over the years, and has ranged between 1.1% in 2004-05 to 2.6% in 2012-13. The financial services sector is the only sector which seems to be contributing well to the service taxes and has shown an improvement starting 2008-09 reaching a high of 6.4% in 2012-13. The sectors which have a little over 1% Services Tax to Services Sector GSDP include Financial Services, Professional Consultancy and Trade, Hotels and Restaurants (Table 4.1). The professional services sector which includes IT and ITeS and other services started showing contribution towards service tax sometime in 2011-12 and its share showed a growing trend but due to lack of data for later years, the analysis remains incomplete. There needs to be a need for analysis of this data to see any potential revenue loss that maybe happening from the services sector to the state, and if so, introduce corrective policy measures.

Table 4.1: Share of Services Tax to Services Sector GSDP across various Services sub-sectors

Year	Financial Services	Other remaining services	Professional Services - Business Consultancy	Trade, Hotels and Restaurants	Ratio of Services Tax to Service Sector GSDP
1999-00	2.0%	0.0%	0.0%	0.0%	0.3%
2001-02	0.0%	0.0%	1.6%	0.0%	0.3%
2002-03	2.7%	0.2%	0.0%	0.0%	0.4%
2003-04	5.4%	0.3%	0.0%	0.0%	0.6%
2004-05	8.5%	2.1%	0.0%	0.0%	1.1%
2005-06	12.2%	27.4%	0.0%	0.0%	2.2%
2006-07	6.5%	9.9%	0.0%	0.2%	2.2%
2007-08	10.8%	16.4%	0.2%	2.9%	2.4%
2008-09	2.9%	7.0%	0.0%	1.1%	2.3%
2009-10	2.8%	3.8%	0.0%	0.8%	1.9%
2010-11	3.9%	3.7%	0.0%	0.7%	2.1%
2011-12	5.9%	0.0%	2.9%	0.4%	2.2%
2012-13	6.4%	0.0%	3.2%	0.7%	2.6%

Source: Author's calculations using CMIE Data and State SDP Data

Note: There was no data available post 2012-13 which we could use for our analyses. Also, it was since 2012 that the concept of negative list was introduced. Here again, we used the CMIE data on Services Tax along with the data on Services Tax collection from CBIC. Note that, the data for Services Tax collected from Karnataka was available only for two years -2011-12 and 2012-13. Karnataka contributed about 7% to the total Services tax collection from all states. We assumed the same ratio starting from 1994-95 to 2012-13. Once we had this data, we divided the total services tax collection as per the shares of services tax in the CMIE data and then assigned a value for each sector.

4.4.2 Goods and Services Tax (GST)

The GST was introduced in July 2017 as a one rate, one nation, one tax system which subsumed many other taxes like the Sales Tax, VAT, Services Tax etc., into a single system of taxation where the tax rates were reduced to four to five rates across an array of commodities and services. Hence, it becomes important to see which of the sectors, especially the services sector contribute to the GST collections in Karnataka.

The early trends in GST data showed that the top three sectors which contribute to the average GST growth between 2018 and 2020 include Manufacturing (63%), Trade (19%) and Financial Services (12%). The manufacturing sector contributes the highest to the GST collections with 59% and 64% in 2019-20 and 2018-19 respectively. There

was 5 percentage points decline in the share in 2019-20 compared to 2018-19. GST on Trade activities contributes to about one-fifth of the total GST tax collection in the state. However, in March 2020, this was just about 1% of the total GST collected in the State. The Financial Services sector contributed to about 34% of the share in GST in 2019-20. The IT and ITeS sectors which formed about (24%) of the share in GSDP in 2019-20 did not contribute much to the GST collections in the state due to a large number of such services being exported.

4.4.3 Sales Tax

The data on sales tax shows that the manufacturing sector contributed highest to the sales tax, although this varied much across the years, the average annual growth rate being about 88%. Trade has also contributed significantly starting 2011 with a peak of 88% in 2016-17. It saw a high 517% growth rate between 2012-2013 and 2016-17.

The manufacturing sector has shown a consistent decline in average annual growth rates during different time periods as shown in the table 4.2 below. From a high of 152% average annual growth rate during India's high growth period, it declined to a mere 66% average annual growth rate between 2008-2013 which is the period coinciding with the global sub-prime crisis and financial crisis. The growth was slightly better starting 2013-17 marking a period of global recovery. As manufacturing and trade are very highly interlinked, trade showed a similar story for the same time periods. Post July 1st, 2017, the Goods and Services Tax was rolled out across the country which subsumed various taxes under it including the sales tax.

The average annual growth rate in sales tax was about 103% between 1991 and 2017 which means there was a double growth in the sales tax collection by the state.

Table 4.2: Average Annual Growth Rate in Sales tax across sub-sectors

Time Period	Manufacturing	Trade	Financial Services	Hotels & Restaurants	Total
1991 - 2004	102%	113%	124%		114%
2004 - 2008	152%	171%	69%	105%	111%
2008 - 2013	66%	33%	59%	122%	61%
2013 - 2017	71%	517%	82%	164%	137%
All	94%	120%	92%	123%	103%

Source: Author's calculations using CMIE data

4.4.4 VAT Collections

The value added tax as the name suggests is a tax that is levied on a product at every point of sale where it undergoes some kind of value addition. For example, say when raw iron rods are manufactured by a steel making company, and supplied to a manufacturer of iron furniture, the manufacturer of such furniture will have to pay a certain tax for the value addition made by the producer of these iron rods from iron ore. Similarly, when the producer of this furniture sells it to the wholesaler, the wholesaler pays tax only on the value addition for converting the iron rods to furniture. So, this way, the tax is levied at the point of sale to the next buyer of the value-added item. Finally, when this furniture is purchased by the retailer, he pays a VAT which is equal to the tax at every stage of production or value addition of that item. VAT system was introduced to keep track of the trail of the product in order to ensure tax avoidance. VAT was introduced in India in 2005. The earlier system of taxes, i.e. sales tax collected tax at the final point of sale of the product.

When we look at the sector wise collection of taxes in Karnataka, we see that the manufacturing sector contributed to about 51% of the total VAT collected in the state on an average, between 2012-13 and 2016-17 just before GST was introduced in India. Forty nine percent of the remaining VAT came from the services sector, of which, trade contributed 33% and the financial services contributed 8%. The IT Services contributed just 2% of the total VAT collected in the state while the GSDP from IT and ITeS was 24%. This could be attributed to the high number of IT software and services which is produced in Karnataka is actually exported and exports are exempt from tax. Karnataka exported about 42% of the total software exports in India in 2019-20 as recorded by the STPI data. The other reason could also be the high number of tax holidays given by the state governments in the form of creating of SEZs to boost the IT infrastructure investment in the state.

4.4.5 Corporate Taxes

Corporate taxes are direct taxes paid by companies to the Government, on their income or profits. As these are direct taxes, the burden of this doesn't fall on the user or goods or services of such companies. Such taxes help generate income especially from large companies making big profits for redistribution in the form of policies. It is a progressive tax as the companies are made to pay taxes as per their incomes, hence, not imposing the burden on the smaller companies or consumers. It is a way of ensuring lower economic inequalities in a society. Corporate taxes also become important as these companies who raise large incomes are beneficiaries of many provisions provide by the Government and the public sector, say in the form of

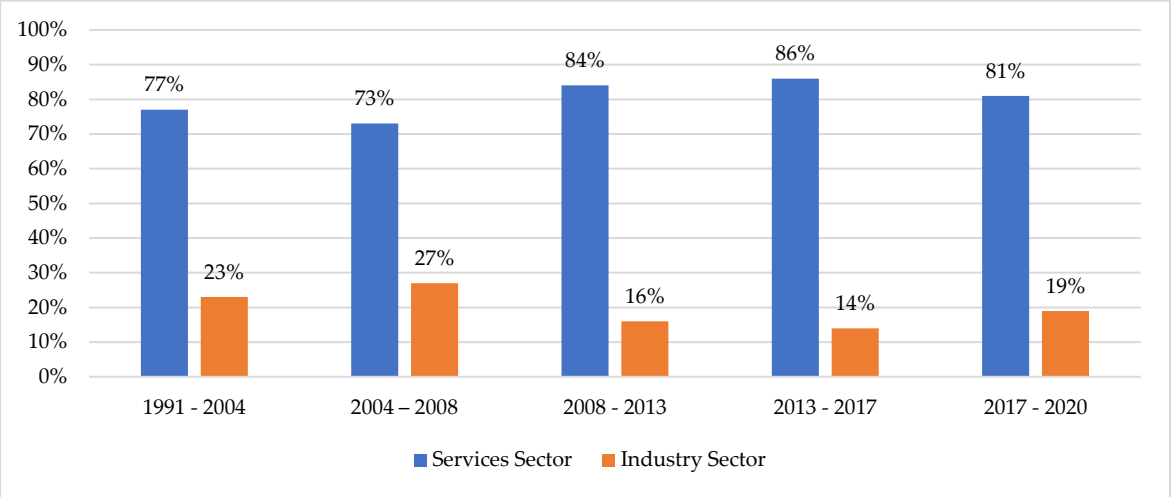
subsidises, tax holidays and also benefitting from the human capital and the skill sets of the population (Network, T. J. (2015).

In the context of India, the Corporate Taxes have changed over the years, with mostly reducing rates. Sometime around 2010, the Corporate Taxes were 32.44% and it slowly increased to 33.99% in 2014 and 34.61% until 2018. In 2019, there was a drastic reduction in Corporate Taxes to the tune of 9 percentage points to 25.17% in 2019. Although the Government justifies this as an incentive for companies to invest in the country and provide stimulus, these supply side effects should be taken only when demand side factors like unemployment are addressed. Such tax cuts can cost the government exchequer heavily and hence, it is important to take such measures after thorough scrutiny.

We used the same CMIE data to analyse which sectors contributed to the corporate taxes in Karnataka. We see that the services sector contributes maximum to the taxes and its share has been increasing from 77% between 1991 to 2004 to about 81% between 2017 and 2020 (Figure 4.12). Further, when we breakdown the sectors, we see that the sectors contributing maximum to corporate taxes include Financial Services, IT Computer Software and Manufacturing (Figure 4.13). Hence, although the contribution through services tax from the services sector is not significant, they are contributing to the corporate tax collections. However, the corporate taxes are collected and accrues to the central government exchequer. Finally, all these taxes which are generated due to economic activity in the state, is redistributed as tax share to the states using the formula set by the Finance Commission. Hence, Karnataka becomes a significant contributor to the national economy and also to the foreign exchange earnings of the country through its export of software services improving the Balance-of-Payments situation and stimulating the macroeconomic growth in the country. So, the State can argue for a revision criteria for division of revenue from the union government that better rewards these contributions from the state with the Finance Commission in order to recognise the direct and indirect effects of the state's initiatives towards development and promotion of its services sector.

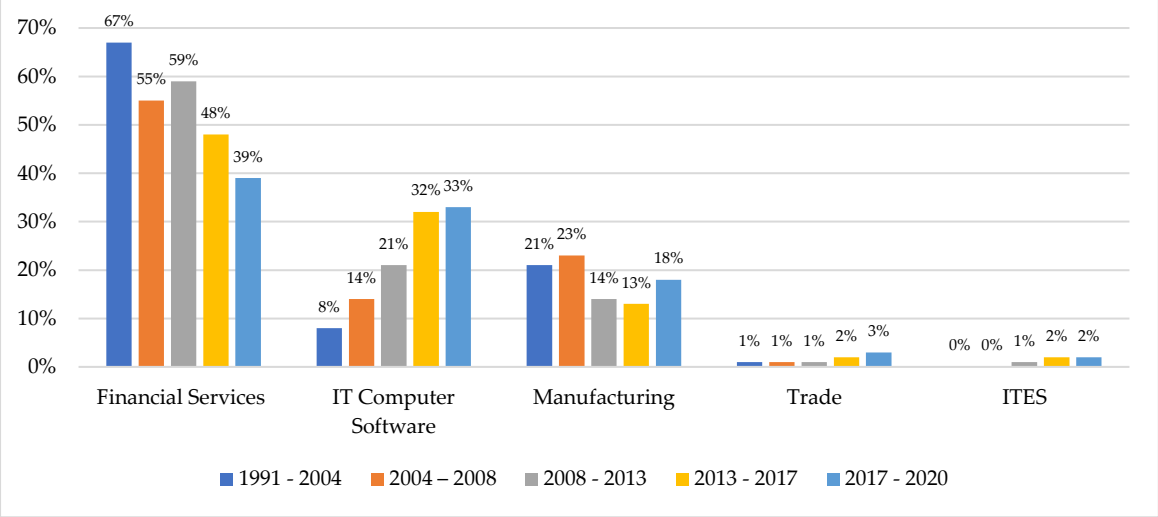
The average annual growth rate showed almost a 100% decrease in the amount of taxes collected from Mining, Online Retailers and Communication sectors. We also saw a 25% decline in corporate tax collection for Construction, Business Consultancy, Real Estate indicating a slowdown for companies, caused by demonetisation in November 2016 and introduction of GST in July 2017.

Figure 4.12: Share of Corporate Taxes by Sectors



Source: Author's calculations using CMIE data

Figure 4.13: Share of Corporate Taxes by top 5 sub-sectors across time periods



Source: Author's calculations using CMIE data

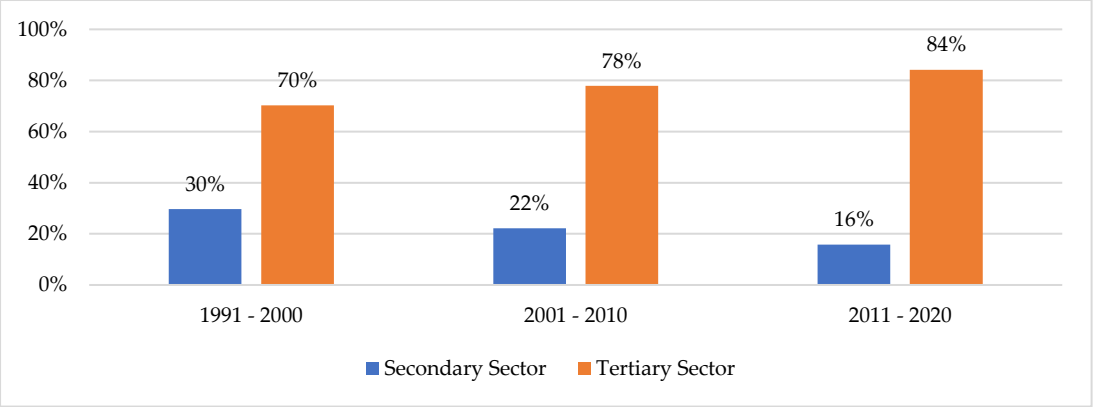
4.4.6 Total Direct and Indirect Taxes

An overall analysis of the total direct taxes and indirect taxes collected showed similar results as the analyses of corporate taxes and other indirect taxes with Financial Services, IT Computer Software, Manufacturing, Trade, ITeS, and Business Consultancy being the top sectors contributing to both total indirect and direct taxes collection. Although these sectors are the primary contributing sectors to both form of taxes, the share of direct taxes and indirect taxes shows opposite results.

For the direct taxes analysed over three decades, the decadal shares show that there is a clear increasing trend in the contribution of the tertiary sector from 70% in 1991-2000 to 84% in 2011-20 driven by the financial services sector reiterating the

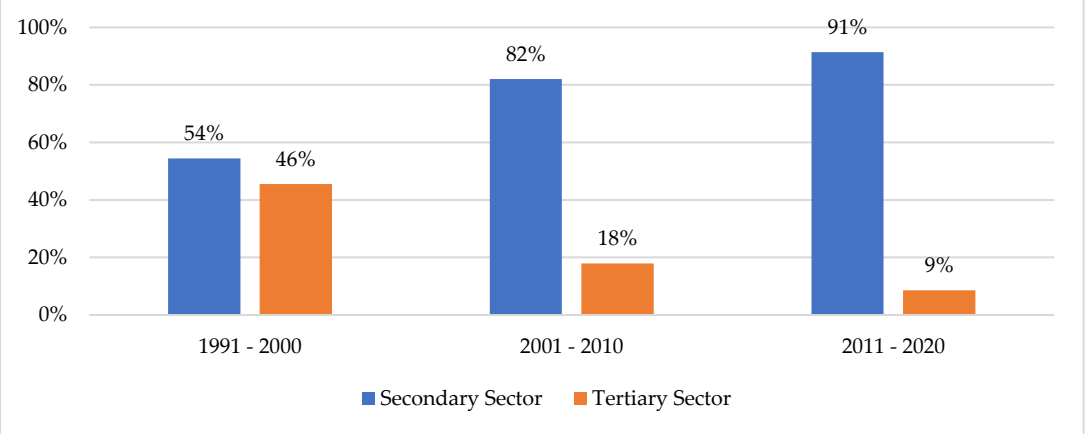
prominence of this sector in generating revenues for the state (Figure 4.14). However, the share of direct taxes itself is low and hence indirect taxes contributions matter more. In terms of indirect taxes collection, the manufacturing sector showed a rising contribution with about 54% contribution in 1991-2000 increasing to 81% in 2001-2010 and 91% in 2011-2020 respectively. Hence, the contribution of the secondary sector shows a much higher decadal shares and increasing trend as compared to the tertiary sector (Figure 4.15). When we analyse the total of direct and indirect taxes, we see that while manufacturing continues to be the most significant contributor, the share of IT & Computer Software sector has also grown by a very high rate from merely 3% in 1990-91 to 15% 2011-12 (Figure 4.16). The share of financial services has declined during these two decades. Hence, although Karnataka has seen a tertiarisation of its economy, it remains highly dependent on the manufacturing sector for its tax revenues.

Figure 4.14: Share of sectors in total direct taxes collection



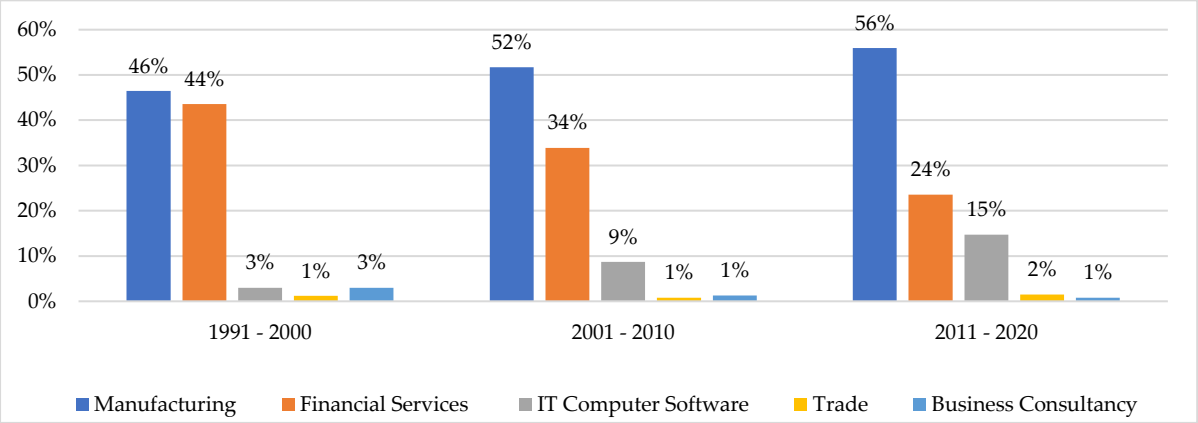
Source: Author's calculations using CMIE

Figure 4.15: Share of sectors in total indirect taxes collection



Source: Author's calculations using CMIE

Figure 4.16: Share of sectors in total taxes collection



Source: Author's calculations using CMIE

Chapter 5. Conclusions and Policy Implications

Before summing up our conclusions and putting forward a few broad recommendations, we would like to reiterate some common goals of the economic, especially public finance policies that guide these inferences and suggestions. For the sake of simplicity, we are listing those here separately though they are deeply interlinked and interdependent.

1. Growth and increase in the state income
2. Expansion of employment opportunities
3. Sustainability of growth, employment and income
4. Reduction of inequalities including well-being of all including markers such as individual or household income, location, gender, caste, community
5. Enhancement of capabilities of people through public investment on skills, education, health and living conditions to enable their participation in a dynamic economic growth process
6. Balance between short term responses to a crisis and long-term goals
7. Balance between macro-economic goals and micro-level responses

The economic development of a society has to be an integrated and interlinked system that takes into account the social and political wellbeing of a society. The economic and social goals go hand in hand. Similarly, it is important that short term policy responses are in tandem with long term policy goals to avoid any incongruity. In the same way, policies linked with micro-economic initiatives must push the economy be in the same direction as the macro-economic policy goals are. In other words, we are arguing for a balance and congruity in micro-macro, economic-social, and economic growth and equality goals. In this section, we recap the discussions where we examined the performance of service sector in Karnataka taking these policy goals in view. While doing so, we also take note of the recent experiences of the pandemic, as well as global economic slowdown experienced earlier and the role that various sectors played in sailing through that. The recent pandemic experience as well as the global recession experiences clearly taught us to realise the importance of the economy not being over-dependent on any one sector, as different sectors and industries have different kinds of resilience to diverse forms of crises. The idea behind this approach is that we do not examine the contributions and role of the service sector to Karnataka's economy in isolation, and arrive at policy suggestions that are comprehensive rather than narrowly looking at the service sector only.

Growth and State Income

In Karnataka, the service sector share in the GSDP is 64% in 2019-20, and it is currently the largest and the fastest growing sector in Karnataka. At an aggregate level, the primary sector's contribution to GSDP has fallen from 32% in 1993-94 to 11% in 2019-20 while the secondary sector's contribution has remained the same at about 25% in these three decades. It is the tertiary sector's share in the GSDP that has seen a dramatic increase from 44% in 1993-94 to 64% in 2019-20. It is observed that most of the decline in the primary sector's share is picked up by the services sector. Further, within the service sector subsectors, export driven sectors drive the growth process with Professional Services – IT & ITES, Communication, and Financial Services to have shown highest growth rates for the 30-year period. This is indeed reflective of the fact that service sector's growth has contributed significantly in high economic growth trajectory of the state's economy.

However, these higher growth rate service sub-sectors have all witnessed negative growth rates between 2016-17 and 2019-20. The export driven growth in Karnataka brings with it volatility and this can be seen in the current context where the share of Professional Services and growth in GSDP has seen major decline. In the past also, we have seen the services sector getting affected at the time of global financial crisis in 2008 due to high dependence on trade with the US which was one of the biggest buyers of IT services from India at that time. The GSDP of the tertiary sector in Karnataka which grew by 9.8% in 2008-2009 grew only by 2.1% in 2009-10. The downturn in the US economy due to the sub-prime crisis, therefore, partially affected India too. However, we also saw that although the sector was impacted, the IT-ITES industry showed resilience and tenacity in managing even under unpredictable circumstances and displaying the viability of India's fundamental value proposition (Kumar, N. A. 2011). Even in times like the pandemic, unlike tourism and retail sub-sectors, knowledge based and skill dependent sub-sectors, such as IT is less susceptible to physical closures, and options of working remotely have been able to keep the economy going. Hence, it makes sense for the state to push for further growth of these services sector.

Among the other sectors, the manufacturing sector suffered a setback in terms of production due to the Covid-19 pandemic for various reasons, mainly due to supply chain disruptions and reduced demand, both industrial and household. The primary sector however sustained the detrimental effects on the economy due to the pandemic induced lockdown, mainly because the rural economy was not affected vastly by the first wave of the pandemic in 2020. The fact that it was the kharif

sowing season in the month of June 2020, also mattered as the work continued unhampered and this was also a good monsoon year which proved beneficial for the heavily rainfall dependent Indian agriculture. This also means that though the share of the primary sector in growth has reduced over the years, it is important to nurture the sector for its resilience to such shocks. The state also extends about 11.5% of its total subsidies to the agriculture and horticulture sector which is the second highest; the highest subsidy goes to the energy sector. Karnataka has been rightly taking many measures for the improvement of the primary sector with the latest set of initiatives in the new agricultural policy where steps to encourage water security, mass cultivation, land bank, micro-irrigation, processing of farm produce, marketing and most notably to provide the status of industry to agriculture and horticulture have been prescribed (Kumar. S, 2020). If these reforms come into place, this will be a revival of the farm sector and it's important for the state to ensure that the policy decisions are put into action and implemented.

Coming back to service sector, especially IT and ITeS, our analysis showed that its contribution to revenue is largely through corporate taxes and foreign exchange earnings – both these sources are controlled by the Government of India. While the state such as Karnataka bears the potential revenue loss by providing tax incentives to such industries, the nature of the federal finance is such that the state does not benefit fully from these. That makes it pertinent for the state to raise these issues with the Finance Commission to be able to include criteria that would ensure greater transfer of central revenue collection to states like Karnataka.

Expansion of employment opportunities

On employment front, it is a cause for concern to see from the analysis that Karnataka's economy that is growing in value addition at the rate of 6% per annum has been able to see employment grow only at 1% per annum for the period 1993-94 and 2011-12. In particular, it is evident that this value-added growth is driven by service sector which is growing at 8% per annum and has added 4% to employment. This shows that services sector growth in value addition has not reflected the same trajectory in employment growth. Hence, it is essential to have a growth orientation that ensures creation of employment opportunities which provides decent wage, job security and social security.

The kind of service sector growth Karnataka is witnessing is capital intensive, import intensive and also skill intensive. It is also evident that sectors that are highly productive employ less numbers compared to low productivity service sectors. This means while service sector has the potential to help the economy move towards

more skill-based employment, which in turn has the potential to push the education as well as income level of youth but high productivity also means the number of jobs created through this route remains low. Therefore, the policy needs to use this scenario to push skill-based education in a manner that the labour market functionality moves towards absorption of skilled labour at higher payments and pushes the economy towards greater formality.

Service sector in Karnataka can also be credited to have pushed other sectors such as construction, which has contributed to employment creation opportunities as well. However, much of this employment has remained in the informal sector and the state needs to initiate policies that would make the jobs in this sector less precarious. Karnataka also has a large presence of the textile industry which is export intensive contributing to about 20% of the national production and 3% of the total employment in the state, and in the manufacturing sector in particular, it contributes to a little more than one-fourth of the employment. The state has been forward - looking in terms of adapting the latest emerging technologies using advanced production technologies resulting in smart value chains (Textile Policy, 2019-2024). In order to retain its place in the global market, Karnataka came up with a new textile policy in 2019 which aims to attract Rs.10000 crore investments for the sector and create about 5 lakh jobs[8] and make the textile value chain into a gold mine value chain by providing incentives such as credit linked capital subsidy for MSMEs, large enterprises and interest subsidy for large enterprises, power subsidy for MSMEs and large enterprises. This kind of equal focus on promotion of the textile industries will ensure a redistribution of reliance on the services sector and ensure gainful employment for the people and make Karnataka a primary destination for textile manufacturing. In general, promoting manufacturing for employment generation is a good outlook for the state's policies.

The primary sector, with its reduced share in the value addition, still employs a large workforce, although this is not seen as very gainful employment. The primary sector workforce still consists of a majority of small and marginal farmers who also work as labourers on other farms. So, initiatives should be taken, to first of all skill them with the latest technologies and innovations in farming, create rural industries with well-established supply chain and marketing facilities such that value addition of farm produce can happen at the local level ensuring skilling of farm labour in multiple activities and creating viable employment opportunities due to structural changes of

[8] https://www.thehindubusinessline.com/news/national/karnatakas-new-textile-garment-policy-2019-24-to-attract-10000-crore-investments/article29845545.ece

transition from primary to the other sectors and also ensuring a more meaningful distribution of income among the actual growers of the crop. This means that service and primary sectors get linked, leading to creation of higher and more gainful employment opportunities.

Sustainability of growth, employment and income

Economic development should be seen both from a perspective of not just employment creation but also higher productivity and incomes for its sustainability, through quality job creation, economic diversification and investment strategies and labour market activation to include more vulnerable groups (ILO, 2021). In the context of service sector, especially the IT and ITeS, we have already discussed that though susceptible to global market uncertainties, the sector has shown resilience, and therefore the growth has largely been sustained. Sustainability is also dynamic as new trends crop up in the world economy. It becomes imperative to look out for such new avenues which offer potentials to changing needs of the world. Artificial Intelligence is one such area and with Karnataka having such a high number of engineering graduates every year, we have to create a more skilled workforce which can provide services to the rest of the world.

The world is now talking about the fourth industrial revolution with a whole new dimension to manufacturing processes integrating the use of smart technology and Internet-of-Things. This also means that sectoral divides are slowly collapsing. Also, although a lot of processes are moving towards automation with this revolution, one has to be mindful of the demographic dividend and huge labour force which is a key feature of our economy and any process that we want to adopt at the end of the day, should keep its people in mind, and work with them, and for their development and overall welfare.

Suitable skill development is critical both for employment generation and for sustaining the pace of growth, and for moving the economy towards greater formality. However, the recent dilution of labour laws by the Karnataka Government which were strongly opposed by the trade unions where it would largely exempt industries from not following basic labour rights and further make working conditions worse for the labour class by claiming to ease regulations would only further exacerbate the existing inequalities among its citizens (Srivatsa, SS, 2020). In the long run, this could have a detrimental impact on livelihoods too, hence a relook becomes essential. It is also pertinent that skill development is understood in a more comprehensive manner rather than as narrowly as some training

programme, and is also rooted in major public health and public education investments. This also brings us the aspect of inequalities, which we discuss next.

Reduction of inequalities and enhancement of capabilities

We have discussed earlier that the pattern and pace of service sector growth has somewhat also widened the income distribution thereby increasing polarisation in the economy. The consumption patterns that we see now are largely conspicuous with a high demand for luxurious goods by very few people who have benefited from this unequal distribution of wealth. The development of the services sector, especially the IT sector, has led to the growth in demand for ancillary services and development of infrastructure, but this has not been balanced and largely centred in the IT hub of Bengaluru. This has two connotations: one, the regional imbalance where the growth pattern favours Bengaluru, and now the state government is taking necessary measures to develop the tier-2 cities; and two, the government's investment in infrastructure as well as public finance policies have focused much more on attracting the capital investment in Bengaluru and much less on the fact that this growth has also meant large scale immigration of working class to the city to work in the ancillary sectors who also need better civic amenities and access to public services. It is perhaps time to rethink about creating processes so that the IT & ITES services that have benefitted from relaxations in taxation is also made accountable for investment in areas that make the state a more equitable destination.

The IT sector has led to the heightened activity of the construction sector. These industries can be made to contribute to ensure that the urban poor including migrant labour can lead better and more sustainable lives. A recent study in 2021 found that in the funds collected under the construction workers' welfare cess, less than 10% was used for the welfare of construction workers. The study also mentioned the difficulties that these workers faced in registration with the board due to language issues, insufficient documentation and difficult processes (Sastry, H.M.S, 2021). These are people who have built our cities and are the biggest sufferers of economic and social inequality and the pandemic has exposed the plight of their inhuman conditions of living. Initiatives similar to the ones taken by the Kerala Government to provide low-cost housing for clean and safe accommodations for the urban poor migrant labourers can go a long way in ensuring better living conditions leading to better health and a respectable living (The Hindu, 2020).

Apart from this, it is also important that the IT sector which has received incentives and made large financial gains also takes responsibility for increasing its responsibility towards the community by actively contributing and participating in a

well-rounded development of the state instead of focussing on areas that are beneficial only to their presence. In 2020, some of the largest IT conglomerates with the base in Bengaluru like Infosys Limited (Rs.360 crores), Wipro Limited which have focussed on areas such as rebuilding lives of people affected by floods by providing housing, improvement of primary health care etc., more needs to be done proactively to improve and strengthen public systems instead of taking a more curative approach of relief after a disaster has been struck[9]. Clearly drafted public private partnerships in sectors such as health, education and housing with a clear responsibility on the private also for resource contribution as well may be the way forward.

In order to address the issue of inequality, it is also important to link the policies for enhancement of capabilities of people through public investment on skills, education, health and living conditions to enable their participation in a dynamic economic growth process to the public finance policies for the promotion of particular sectors. For instance, to encourage young men and women from marginalised communities to reap the benefits for the growth of service sector, the skill development policies as well as labour market regulations need to be especially targeted to break the caste, gender and location specific barriers and also be comprehensive, rather than tokenistic and largely status quoist (Maithreyi, R et al, 2019).

Balance between short-term responses and long-term goals, and between macro-economic goals and micro-level responses

In addition to having policies that keep a balance between sectors so as to make the economy less susceptible to diverse kinds of shocks because of their varying nature of resilience, it is also important to have a balance between short term and long term, as well as micro and macro-economic goals. For instance, while recognising the important role of agriculture, maintaining the economic growth even in the times of pandemic in sectors like IT, ITeS and AI is critical in the short run, and it is also pertinent to address the woes of manufacturing sector by all means to save livelihoods in the short run and promote creation of employment in the long run. Similarly, while fiscal balance is an important macroeconomic goal in the long run, in present circumstances when the economy is suffering because of the lack of demand for goods and services, it becomes important to have microeconomic measures like basic income support schemes, food distribution, and relief from loan

[9] https://thecsrjournal.in/top-indian-companies-for-csr-in-2020/

payments. These can not only help mitigate the immediate economic impact of the pandemic but also revive the economy by pushing the demand for goods and services that are to be produced and traded, and in turn reviving both manufacturing and service sectors, and also perhaps helping agriculture sustain its place.

However, in the long run, one has to be able to manage the debts to prevent it from going to unsustainable levels. From the human capital perspective, the health infrastructures should be permanent and this should be taken as a one-time opportunity to give the importance that was due for public health from many years. To help all the sectors, enough working capital, loan moratoriums, technical support, better infrastructural facilities, marketing support, lower interest rates will boost supply side constraints and urban employment programs can boost domestic demand at the same time leading to long term positive consequences for the economy. Hence, finding this balance will not only help in short term recovery but long-term sustainable growth.

Policy Suggestions

1. **Balancing growth across sectors**
   While the Government of Karnataka is already adopting policies which are trying to impact the growth of all sectors, it is important to realise that this is well-justified on grounds of their diverse contributions in terms of growth and employment, and varied nature of resilience that they bring in for different kinds of shocks including global slowdown and pandemic.

2. **Negotiating devolution formula with Finance Commission**
   The Government of Karnataka must make (i) a case to the Reserve Bank of India to generate data for state wise contributions in terms of export/foreign exchange earnings, and (ii) another case to Finance Commission in future for developing a criteria for devolution of resources in a manner that it also incentivises states that make higher contribution to corporate taxes.

3. **Development of inclusive skill enhancement policies**
   The state needs to review its investment and policies on skill enhancement to make it more equitable rather than promoting skill education in a manner that it does not help much in breaking the inequality and social capital barriers of caste, caste, location, language and gender. A separate exercise can be undertaken for this purpose by linking dynamic growth patterns that each

sector is experiencing and making the education and skill development much more oriented towards focusing on developing capabilities of life-long learning or earning to re-learn and deeper critical skills of easy adaptation.

4. **Development of urban infrastructure for the urban poor and migrant workers**

   The giant service sectors that have grown as a result of the push it received from the IT and ITeS sectors such as the construction sector must also contribute to a more balanced development of the state, especially its urban infrastructure for all strata of population including the poor, especially the working class and migrant labour. The judicious use of money received through construction cess for the welfare of working-class people can also help in the process. The fact that the state fares poorly in poor's access to urban housing, sanitation and other public services[10] needs to change, and carefully drafted public-private partnership projects can play a role there. Such initiatives can also help in addressing the issue of pollution and long-term sustainability of urban spaces and lives.

5. **Partial wage subsidy scheme**

   The government also needs to consider maintaining a balance between demand and supply side interventions, especially in the wake of the pandemic. One way could be to think of partial wage subsidy to those sectors such as retail and hospitality industry in service sectors that have been really hit hard and have also led to loss of livelihoods and income. Partial wage subsidy would help the employers in avoiding retrenchment while also ensuring the liquidity flow in the market to create demand for other goods and services, which is a major need of the hour.

[10] CBPS Migration study, forthcoming.

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Annexures

Annexure 1: NSS Definitions of Workers / Employment

NSS provides a standard definition of an economic activity. The entire spectrum of human activity falls into two categories- economic activities and non-economic activities. Any activity resulting in production of goods and services that add value to national product was considered as an economic activity for the employment and unemployment survey. Such activities included (i) production of all goods and services for market (i.e. for pay or profit) including those of government services, (ii) production of primary commodities for own consumption and (iii) own account production of fixed assets.

It is the activity situation in which a person was found during a specified reference period with regard to the person's participation in economic and non-economic activities. According to this, a person could be in one or a combination of the following three broad activity statuses during the reference period:

(i) working or being engaged in economic activity (work),

(ii) being not engaged in economic activity (work) but either making tangible efforts to seek

'work' or being available for 'work' if 'work' is available and

(iii) being not engaged in any economic activity (work) and also not available for 'work'.

Broad activity statuses mentioned in (i) and (ii) above are associated with 'being in labour force' and the last with 'not being in the labour force'. Within the labour force, broad activity status (i) and (ii) were associated with 'employment' and ‘unemployment’, respectively.

Different approaches followed to determine activity status: The persons surveyed were classified into various activity categories in three approaches on the basis of activities (economic/non-economic) pursued by them during certain specified reference periods. The three approaches are usual status approach, current weekly status approach and the current daily status approach. Three reference periods used in NSS surveys are (i) one year, (ii) one week and (iii) each day of the reference week. In the usual status approach, the activity status of a person is determined on the basis of the reference period of one year. The activity status of a person in current weekly status approach is determined on the basis of the reference period of one

week and that in current daily status approach is determined on the basis of the reference period of one day. The procedures adopted to classify the persons into various activity categories according to the usual status approach, current weekly status approach and current daily status approach are elucidated below.

Usual principal activity status*:* The usual activity status relates to the activity status of a person during the reference period of 365 days preceding the date of survey.

Usual subsidiary economic activity status*:* A person whose usual principal activity status was determined on the basis of the major time criterion could have pursued some economic activity for a shorter time throughout the reference year of 365 days preceding the date of survey or for a minor period, which is not less than 30 days, during the reference year. The status in which such economic activity was pursued was the subsidiary economic activity status of that person.

Usual activity status considering principal and subsidiary status taken together*:* The usual status, determined on the basis of the usual principal activity and usual subsidiary economic activity of a person taken together, is considered as the activity status of the person according to usual status (ps+ss). According to the usual status (ps+ss), workers are those who perform some work activity either in the principal status or in the subsidiary status. Thus, a person who is not a worker in the usual principal status is considered as worker according to the usual status (ps+ss), if the person pursues some subsidiary economic activity for 30 days or more during 365 days preceding the date of survey.

Current weekly activity status**:** The current weekly activity status of a person is the activity status obtaining for a person during a reference period of 7 days preceding the date of survey. It is decided on the basis of a certain *priority- cum- major time criterion*.

Workers (or employed): Persons who were engaged in any economic activity or who, despite their attachment to economic activity, abstained themselves from work for reason of illness, injury or other physical disability, bad weather, festivals, social or religious functions or other contingencies necessitating temporary absence from work, constituted workers. Unpaid household members who assisted in the operation of an economic activity in the household farm or non-farm activities were also considered as workers.

Seeking or available for work (or unemployed): Persons who, owing to lack of work, had not worked but either sought work through employment exchanges, intermediaries, friends or relatives or by making applications to prospective

employers or expressed their willingness or availability for work under the prevailing conditions of work and remuneration, were considered as those 'seeking or available for work' (or unemployed)

Workers were further categorized as *self-employed, regular wage /salaried employee*), and *casual labour.*

Labour force: Persons who were either 'working' (or employed) or 'seeking or available for work' (or unemployed) constituted the labour force. Persons with activity status codes 11 – 82 constituted the labour force.

Not in labour force: Persons who were neither 'working' nor 'seeking or available for work' for various reasons during the reference period were considered as 'not in labour force'. Persons under this category are students, those engaged in domestic duties, rentiers, pensioners, recipients of remittances, those living on alms, infirm or disabled persons, too young persons, prostitutes, etc. and casual labourers not working due to sickness.

Self-employed: Persons who operated their own farm or non-farm enterprises or were engaged independently in a profession or trade on own-account or with one or a few partners were deemed to be self-employed in household enterprises. The essential feature of the self-employed is that they have *autonomy* (decide how, where and when to produce) and *economic independence* (in respect of choice of market, scale of operation and finance) for carrying out their operation. The remuneration of the self-employed consists of a non-separable combination of two parts: a reward for their labour and profit of their enterprise.

Regular wage/salaried employee: These were persons who worked in others' farm or nonfarm enterprises (both household and non-household) and, in return, received salary or wages on a regular basis (i.e. not on the basis of daily or periodic renewal of work contract). This category included not only persons getting time wage but also persons receiving piece wage or salary and paid apprentices, both full time and part-time.

Casual labour: A person who was casually engaged in others' farm or non-farm enterprises (both household and non-household) and, in return, received wages according to the terms of the daily or periodic work contract, was considered as a casual labour.

Annexure 2: Tables for Report

Table A2.1 Type of Employment across time and across sectors

	July 1993 - June 1994				July 1999 - June 2000				January 2004 - June 2004			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Crops	0%	83%	5%	60%	0%	82%	4%	69%	0%	73%	1%	64%
Manufacturing	0%	6%	21%	11%	0%	4%	26%	10%	0%	6%	20%	11%
Construction	25%	5%	2%	1%	65%	6%	2%	1%	100%	11%	3%	1%
Professional Services	0%	0%	1%	0%	0%	0%	2%	1%	0%	0%	4%	1%
Financial Services	0%	0%	5%	0%	0%	0%	4%	0%	0%	0%	4%	0%
Mining & Quarrying	20%	1%	4%	0%	0%	1%	0%	1%	0%	3%	1%	0%
Education and Research	0%	0%	11%	0%	0%	0%	14%	0%	0%	0%	18%	0%
Public Administration	15%	0%	21%	0%	19%	0%	15%	0%	0%	0%	15%	1%
Trade & Repair Services	0%	1%	7%	10%	0%	3%	11%	12%	0%	2%	12%	14%
Hotels & Restaurants	0%	0%	3%	1%	0%	0%	4%	2%	0%	1%	3%	2%
Road Transport	0%	1%	7%	1%	16%	2%	7%	2%	0%	3%	8%	2%

	July 2004 - June 2005				July 2005 - June 2006				July 2007 - June 2008			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Crops	0%	80%	1%	66%	7%	78%	3%	64%	0%	79%	2%	63%
Manufacturing	0%	4%	21%	12%	0%	3%	23%	13%	0%	4%	24%	12%
Construction	80%	8%	1%	1%	88%	11%	2%	1%	2%	10%	3%	1%
Professional Services	0%	0%	4%	1%	0%	0%	4%	0%	0%	0%	10%	1%
Financial Services	0%	0%	5%	0%	0%	0%	5%	0%	0%	0%	4%	0%
Mining & Quarrying	0%	1%	0%	0%	0%	1%	0%	0%	0%	1%	1%	0%
Education and Research	0%	0%	16%	0%	0%	0%	14%	0%	0%	0%	13%	0%
Public Administration	0%	0%	12%	0%	0%	0%	10%	0%	0%	0%	9%	0%
Trade & Repair Services	0%	2%	13%	12%	0%	3%	10%	12%	0%	2%	11%	13%
Hotels & Restaurants	0%	0%	5%	2%	0%	0%	3%	2%	0%	0%	3%	3%
Road Transport	20%	2%	8%	2%	5%	2%	10%	2%	0%	2%	7%	3%

	July 2009 - June 2010				July 2011 - June 2012			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Crops	0%	73%	2%	58%	0%	69%	2%	60%
Manufacturing	0%	5%	21%	11%	0%	6%	23%	11%
Construction	100%	13%	5%	2%	98%	16%	1%	2%
Professional Services	0%	0%	10%	1%	0%	0%	13%	1%

	July 2009 - June 2010				July 2011 - June 2012			
Financial Services	0%	0%	4%	1%	0%	0%	4%	0%
Mining & Quarrying	0%	1%	1%	0%	0%	1%	0%	0%
Education and Research	0%	0%	15%	0%	0%	0%	15%	0%
Public Administration	0%	0%	8%	0%	0%	0%	7%	0%
Trade & Repair Services	0%	2%	11%	15%	0%	2%	9%	14%
Hotels & Restaurants	0%	1%	4%	3%	0%	2%	4%	4%
Road Transport	0%	2%	7%	4%	0%	3%	7%	3%

Table A2.2: Sectoral Employment Trends across time

	July 1993 - June 1994				July 1999 - June 2000				January 2004 - June 2004			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Air Transport	0%	25%	75%	0%	0%	0%	100%	0%				
Communication	0%	4%	84%	12%	0%	0%	86%	14%	0%	0%	66%	34%
Construction	1%	73%	7%	19%	2%	71%	9%	17%	0%	81%	7%	12%
Crops	0%	48%	1%	52%	0%	50%	1%	49%	0%	49%	0%	50%
Education and Research	0%	2%	94%	4%	0%	1%	97%	2%	0%	5%	90%	5%
Electricity, Gas & Water Supply	0%	5%	74%	21%	0%	9%	91%	0%	0%	0%	97%	3%
Financial Services	0%	1%	84%	15%	0%	4%	88%	8%	0%	0%	71%	29%
Fisheries	0%	1%	0%	99%	0%	48%	17%	35%	0%	16%	5%	79%
Forestry & Logging	27%	16%	18%	39%	0%	84%	11%	5%	0%	34%	4%	62%
Hotels & Restaurants	0%	4%	30%	66%	0%	9%	36%	55%	0%	20%	28%	53%
Livestock	0%	7%	0%	93%								
Manufacturing	0%	19%	24%	57%	0%	16%	36%	48%	0%	24%	24%	52%
Medical and Health	0%	0%	64%	36%	0%	10%	66%	24%	0%	0%	74%	26%
Mining & Quarrying	2%	43%	45%	9%	0%	59%	5%	36%	0%	88%	8%	4%
Other remaining services	0%	12%	19%	69%	0%	18%	16%	65%	0%	25%	27%	48%
Ownership of Dwellings	0%	4%	0%	96%								
Professional Services	0%	2%	55%	43%	0%	7%	46%	48%	0%	2%	57%	41%
Public Administration	1%	0%	98%	1%	1%	5%	90%	5%	0%	3%	85%	12%
Railways												
Real Estate	0%	0%	0%	100%	0%	0%	8%	92%	0%	0%	0%	100%
Road Transport	0%	25%	48%	27%	1%	31%	37%	31%	0%	39%	36%	26%
Services incidental to Transport	0%	57%	30%	13%	0%	51%	36%	13%	0%	52%	28%	20%
Storage	0%	54%	46%	0%								
Trade & Repair Services	0%	7%	12%	81%	0%	12%	17%	70%	0%	8%	17%	75%
Water Transport					0%	0%	39%	61%				

	July 2004 - June 2005				July 2005 - June 2006				July 2007 - June 2008			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Air Transport	0%	66%	34%	0%	0%	0%	100%	0%	0%	0%	100%	0%
Communication	0%	2%	78%	20%	0%	2%	59%	39%	0%	0%	78%	22%
Construction	1%	85%	3%	11%	0%	87%	4%	9%	0%	82%	10%	8%
Crops	0%	50%	0%	50%	0%	55%	1%	44%	0%	53%	1%	47%
Education and Research	0%	1%	93%	6%	0%	0%	97%	2%	0%	0%	97%	3%
Electricity, Gas & Water Supply	0%	11%	86%	4%	0%	23%	77%	0%	0%	0%	100%	0%
Financial Services	0%	2%	88%	10%	0%	1%	83%	16%	0%	0%	86%	14%
Fisheries	0%	73%	0%	27%	0%	25%	0%	74%	0%	28%	0%	72%
Forestry & Logging	0%	9%	23%	68%	0%	84%	0%	16%	0%	100%	0%	0%
Hotels & Restaurants	0%	6%	38%	56%	0%	11%	29%	60%	0%	7%	30%	62%
Livestock												
Manufacturing	0%	15%	27%	57%	0%	14%	31%	55%	0%	13%	38%	49%
Medical and Health	0%	1%	68%	31%	0%	0%	83%	17%	0%	0%	85%	15%
Mining & Quarrying	0%	89%	1%	11%	0%	96%	3%	1%	0%	61%	26%	13%
Other remaining services	0%	16%	32%	51%	0%	8%	45%	46%	2%	24%	39%	35%
Ownership of Dwellings												
Professional Services	0%	5%	60%	35%	0%	0%	76%	24%	0%	0%	87%	13%
Public Administration	0%	3%	91%	6%	0%	1%	91%	8%	0%	2%	89%	9%
Railways												
Real Estate	0%	0%	6%	94%	0%	0%	16%	84%	0%	6%	1%	93%
Road Transport	0%	31%	35%	34%	0%	27%	46%	27%	0%	23%	38%	39%
Services incidental to Transport	0%	33%	25%	42%	0%	18%	69%	13%	0%	26%	69%	5%
Storage												
Trade & Repair Services	0%	10%	20%	70%	0%	15%	19%	66%	0%	8%	21%	70%
Water Transport									0%	11%	0%	89%

	July 2009 - June 2010				July 2011 - June 2012			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Air Transport	0%	0%	100%	0%				
Communication	0%	5%	46%	49%	0%	0%	96%	4%
Construction	0%	77%	11%	11%	0%	77%	4%	18%
Crops	0%	53%	1%	46%	0%	41%	1%	58%

	July 2009 - June 2010				July 2011 - June 2012			
Sector	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**	**Casual Workers**	**Other Types of Work**	**Regular/Salaried Workers**	**Self Employed**
Education and Research	0%	2%	91%	7%	0%	0%	99%	0%
Electricity, Gas & Water Supply	0%	1%	82%	17%	0%	7%	79%	15%
Financial Services	0%	3%	70%	27%	0%	1%	85%	14%
Fisheries	0%	59%	0%	41%	0%	12%	0%	88%
Forestry & Logging	0%	50%	1%	49%	1%	49%	50%	0%
Hotels & Restaurants	0%	10%	30%	60%	0%	15%	28%	57%
Livestock								
Manufacturing	0%	19%	33%	49%	0%	14%	42%	44%
Medical and Health	0%	1%	82%	17%	0%	1%	79%	20%
Mining & Quarrying	0%	61%	32%	7%	0%	63%	15%	21%
Other remaining services	0%	23%	38%	39%	0%	17%	56%	27%
Ownership of Dwellings								
Professional Services	0%	1%	81%	19%	0%	0%	88%	12%
Public Administration	0%	3%	91%	6%	0%	0%	100%	0%
Railways								
Real Estate	0%	2%	19%	78%	0%	0%	8%	92%
Road Transport	0%	25%	32%	43%	0%	23%	38%	39%
Services incidental to Transport	0%	0%	87%	13%	0%	18%	0%	82%
Storage								
Trade & Repair Services	0%	8%	19%	73%	0%	6%	23%	71%
Water Transport								

Table A2.3: Activity Status by sector

	July 1993 - June 1994			July 1999 - June 2000	January 2004 - June 2004		
Final Sector	**PS + SS**	**PS only**	**SS only**	**PS Only**	**PS + SS**	**PS only**	**SS only**
Crops	80%	54%	63%	66%	76%	54%	80%
Manufacturing	4%	13%	7%	10%	6%	11%	8%
Trade & Repair Services	3%	8%	4%	8%	4%	10%	5%
Construction	1%	3%	1%	3%	4%	6%	0%
Road Transport	1%	2%	0%	2%	3%	3%	1%
Other remaining services	2%	4%	4%	1%	0%	2%	1%
Education and Research	1%	2%	1%	2%	1%	3%	1%
Professional Services	0%	0%	0%	1%	0%	1%	0%
Hotels & Restaurants	0%	2%	1%	1%	1%	1%	2%
Public Administration	1%	4%	0%	2%	2%	2%	1%

	July 1993 - June 1994			July 1999 - June 2000	January 2004 - June 2004		
Final Sector	**PS + SS**	**PS only**	**SS only**	**PS Only**	**PS + SS**	**PS only**	**SS only**
Financial Services	0%	1%	0%	1%	1%	1%	0%
Medical and Health	0%	1%	0%	1%	0%	1%	0%
Real Estate	0%	0%	0%	0%	0%	0%	0%
Grand Total	100%	100%	100%	100%	100%	100%	100%

	July 2004 - June 2005			July 2005 - June 2006			July 2007 - June 2008		
Final Sector	**PS + SS**	**PS only**	**SS only**	**PS + SS**	**PS only**	**SS only**	**PS + SS**	**PS only**	**SS only**
Crops	83%	58%	64%	83%	56%	76%	84%	54%	82%
Manufacturing	5%	10%	26%	5%	12%	16%	5%	12%	10%
Trade & Repair Services	4%	10%	4%	3%	9%	4%	4%	9%	4%
Construction	2%	5%	1%	3%	6%	0%	2%	6%	1%
Road Transport	1%	4%	0%	1%	4%	0%	1%	4%	1%
Other remaining services	1%	3%	0%	2%	2%	0%	0%	2%	1%
Education and Research	1%	3%	2%	0%	3%	1%	1%	3%	0%
Professional Services	0%	1%	0%	0%	1%	0%	0%	2%	0%
Hotels & Restaurants	0%	2%	1%	0%	2%	0%	1%	2%	0%
Public Administration	1%	2%	1%	1%	2%	0%	1%	2%	0%
Financial Services	0%	1%	0%	0%	1%	0%	0%	1%	0%
Medical and Health	0%	1%	0%	0%	1%	0%	0%	1%	0%
Real Estate	0%	0%	0%	0%	0%	0%	0%	0%	0%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

	July 2009 - June 2010			July 2011 - June 2012		
Final Sector	**PS + SS**	**PS only**	**SS only**	**PS + SS**	**PS only**	**SS only**
Crops	74%	53%	76%	63%	48%	59%
Manufacturing	7%	11%	10%	9%	12%	23%
Trade & Repair Services	7%	10%	10%	7%	9%	6%
Construction	2%	8%	1%	7%	6%	5%
Road Transport	2%	4%	0%	3%	4%	3%
Other remaining services	1%	2%	1%	3%	4%	2%
Education and Research	1%	3%	2%	1%	4%	0%
Professional Services	0%	2%	0%	0%	4%	0%
Hotels & Restaurants	2%	2%	0%	2%	3%	3%
Public Administration	1%	2%	0%	2%	2%	0%
Financial Services	1%	1%	0%	1%	1%	0%
Medical and Health	0%	1%	0%	0%	1%	0%
Real Estate	0%	1%	0%	0%	1%	0%
Grand Total	100%	100%	100%	100%	100%	100%

Table A2.4: Activity Status of workers across Sectors and Time

Final Sector	July 1993 - June 1994			January 2004 - June 2004		
	PS + SS	PS only	SS only	PS + SS	PS only	SS only
Air Transport	0%	100%	0%			
Communication	9%	90%	1%	18%	80%	2%
Construction	9%	87%	4%	13%	87%	0%
Crops	32%	57%	11%	24%	69%	7%
Education and Research	11%	85%	5%	7%	91%	2%
Electricity, Gas & Water Supply	6%	86%	7%	8%	92%	0%
Financial Services	5%	93%	2%	15%	85%	0%
Fisheries	21%	77%	1%	2%	98%	0%
Forestry & Logging	12%	76%	12%	63%	30%	7%
Hotels & Restaurants	5%	89%	6%	14%	77%	9%
Livestock	22%	40%	39%			
Manufacturing	11%	82%	7%	12%	84%	4%
Medical and Health	15%	83%	1%	1%	99%	0%
Mining & Quarrying	21%	78%	1%	16%	84%	0%
Other remaining services	15%	72%	13%	5%	92%	3%
Ownership of Dwellings	55%	43%	2%			
Professional Services	12%	88%	0%	2%	98%	0%
Public Administration	7%	92%	1%	17%	81%	2%
Railways						
Real Estate	0%	100%	0%	0%	100%	0%
Road Transport	8%	89%	2%	17%	82%	1%
Services incidental to Transport	41%	59%	0%	0%	100%	0%
Storage	0%	100%	0%			
Trade & Repair Services	13%	81%	6%	9%	88%	3%
Water Transport						

Final Sector	July 2004 - June 2005			July 2005 - June 2006			July 2007 - June 2008		
	PS + SS	PS only	SS only	PS + SS	PS only	SS only	PS + SS	PS only	SS only
Air Transport	66%	34%	0%	0%	100%	0%	0%	100%	0%
Communication	3%	93%	4%	7%	89%	4%	18%	82%	0%
Construction	11%	88%	1%	11%	89%	0%	7%	92%	0%
Crops	26%	70%	4%	25%	72%	3%	22%	76%	2%
Education and Research	12%	85%	3%	3%	96%	1%	5%	95%	0%
Electricity, Gas & Water Supply	0%	100%	0%	0%	100%	0%	3%	97%	0%
Financial Services	3%	95%	2%	3%	97%	0%	3%	97%	0%
Fisheries	10%	90%	0%	0%	90%	10%	0%	100%	0%
Forestry & Logging	16%	62%	21%	0%	100%	0%	0%	100%	0%
Hotels & Restaurants	5%	94%	1%	0%	100%	0%	6%	94%	0%
Livestock									
Manufacturing	11%	79%	10%	8%	88%	4%	7%	91%	2%
Medical and Health	7%	92%	1%	3%	97%	0%	5%	95%	0%
Mining & Quarrying	16%	84%	0%	51%	49%	0%	14%	86%	0%
Other remaining services	7%	92%	1%	18%	82%	0%	2%	97%	1%
Ownership of Dwellings									
Professional Services	3%	97%	0%	1%	99%	0%	1%	99%	0%
Public Administration	11%	88%	1%	9%	91%	0%	5%	95%	0%
Railways									
Real Estate							0%	100%	0%
Road Transport	7%	93%	0%	5%	95%	0%	7%	93%	0%
Services incidental to Transport	0%	100%	0%	8%	92%	0%	0%	100%	0%
Storage									
Trade & Repair Services	9%	89%	2%	8%	90%	2%	7%	92%	1%
Water Transport							0%	100%	0%

Final Sector	July 2009 - June 2010			July 2011 - June 2012		
	PS + SS	PS only	SS only	PS + SS	PS only	SS only
Air Transport	0%	100%	0%			
Communication	0%	100%	0%	5%	95%	0%
Construction	3%	96%	0%	10%	89%	1%
Crops	14%	84%	2%	10%	88%	2%
Education and Research	3%	96%	1%	3%	97%	0%
Electricity, Gas & Water Supply	6%	94%	0%	0%	100%	0%
Financial Services	12%	88%	0%	10%	90%	0%
Fisheries	1%	99%	0%	3%	97%	0%
Forestry & Logging	49%	51%	0%	49%	51%	0%
Hotels & Restaurants	9%	91%	0%	4%	95%	1%
Livestock						
Manufacturing	8%	91%	1%	6%	91%	3%
Medical and Health	2%	98%	0%	1%	99%	0%
Mining & Quarrying	13%	87%	0%	9%	91%	0%
Other remaining services	5%	94%	0%	7%	92%	1%
Ownership of Dwellings						
Professional Services	1%	99%	0%	1%	99%	0%
Public Administration	8%	92%	0%	9%	91%	0%
Railways						
Real Estate	9%	91%	0%	0%	99%	0%
Road Transport	7%	93%	0%	5%	94%	1%
Services incidental to Transport	0%	100%	0%	0%	100%	0%
Storage						
Trade & Repair Services	8%	91%	1%	6%	93%	1%
Water Transport						

Annexure 3: Note on tertiarisation in the Indian economy

The Indian growth process shows an interesting pattern wherein, as expected in any growth process, the decline in the primary sector is seen as the economy grows but in addition, historical growth trajectory also shows the predominance of service sector over industry. This deindustrialization process is considered to be an outcome of colonial British policy (Bagchi, A. K. (1982)). The share of agriculture in total GDP in 1950-51 was 57.2% while the contribution of industry and service sector was 14.8% and 28% respectively for the same period. Whereas, in 1980-81, the share of the above sectors was 41.8%, 21.6% and 36.6% respectively and this trend affirms to the above said analysis. As of 2011-12, service sector contributes around 66 percent to the total value added in the economy with 14% and 17% by agriculture and industry respectively (CSO & NSSO Estimates). This 'disproportionality' and 'excess growth of services' (Mitra, A. (1988)) since the early decades of 1980's showed major departure in the trends of national income growth in India with growth in service activities deviating its path from that of primary and secondary sectors which was more or less in consonance for 25 odd years post-independence. The growth rates of

service sector indicates that sector's output increased at the rate of 7 percent per annum since 1980's and emerged as a major sector by 1990's.

Annexure 4: IT Policy 2020-25

The IT Policy of 2020-25 has mainly focussed on the following broad themes which are discussed further. The first theme is 'Beyond Bengaluru' which focuses development of other cities outside Bengaluru to have distributed workplaces, disintegrated workflows and hence focus on business continuity operations especially in situations like lockdowns and other factors which affect bigger cities like Bengaluru. The second them is 'Innovation' to retain and strengthen its position as the country's innovation hub (IT Policy, 2020-25).

Cyber Security Policy: With issues of cyber security being an issue of utmost concern in the recent years, the IT Policy of 2020-25, this policy will be formulated to "employ the necessary data protection safeguards and create and sustain a safe and resilient ecosystem, (Deccan Herald, Bharath Joshi, September 2020)

Many factors including a suitable bureaucratic environment, climate friendly cities in Karnataka, better infrastructure facilities, and investor friendly policies, setting up of educational institutions and centres of excellences to cater to market needs like the Bangalore Bio Innovation Centre, GOK-Mobile 10X Start-Up Hub, Ganit Lab, Institute of Agriculture Technology, Centre for Biotechnology Research, IIIT-B, COE-IOT, numerous investor summits and other especially related to IT and Biotech and also promotion of startups with more recently focussing on AI, Big Data and Machine learning which are the new globally demanded technologies have all helped put Karnataka in the world map as a go to destination for such emerging technologies and subsequently led to the continued growth of the services sector.

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