Chapter 1

Objectives, Issues and Motivation of the Study

1.0 Introduction

India and China have emerged as the fastest growing economies of the world. Both the countries account for 21 percent of world GDP in 2013 whereas it was only 4.5 percent in 1970. Since last five years India and China are growing respectively at an average rate of 7.0 percent and 8.3 percent as compared to 4 percent average growth of the rest of the world (World Bank, 2014). In 2014, China ranked first in GDP measured in terms of purchasing power parity with USD 17.632 trillion whereas India ranked third in the world with USD7.277 trillion. India and China occupy 127th and 89th positions respectively in terms of per capita income measured by PPP in 2013, which is far below the per capita income of many developing economies such as Thailand, Malaysia and South Africa.

A country’s strength lies in its economic growth which can be achieved through liberalization (Zhang, 2008). Both the economy realized the importance of the liberalization and China opened its way to globalization in 1970s whereas India moved in this direction in mid-1980s. In 1970s, India and China were almost on the same path of economic growth and there was marginal difference in the economic statistics. Both began their economic reforms from eighties onward (Dubashi, 2012). Since 1990s China has spurted well ahead of India. One of the reasons may be the aggressive early reform process adopted by China.
Both India and China were heavily dependent on the agriculture sector for their livelihood initially. The per capita national output was around subsistence level. There were extreme poverty, poor health and mal-nutrition prevailing in both the economies (Malenbaum, 1982). However, the basic difference between India and China is in their political structure. India is a mixed economy with large private sector, whereas China is essentially a command economy with very small share of private players. Both of them became republics in 1940s, but in 1970s China opened its way to globalization and moved ahead on this path.

India and China have shown higher growth in post 1970s. But the growth in China is more aggressive than in India. GDP in China rose 91 times during 1970 to 2012 and it is approximately 30 times in India during the same period (Figure 1.1). Over two and a half decade, the gap in investment in India and China is widening. China’s share of investment to GDP in fixed capital ranges between 35 to 46 percent, and it fluctuates between 20 to 27 percent in India. In 1970, the amount of exports was almost same for both the economies and now there is widened gap favourably for China. The net inflows of foreign direct investment in 1982 in India and China were respectively 0.07 and 0.43 billion USD which increased to 28.15 and 347.8 billion USD respectively in 2013 in both the countries (World Bank, 2014).

The sectoral contribution of GDP in both the countries is different. In 2014, the share of Agriculture constitutes about 17.9 percent of GDP in India, whereas it is 9.2 percent in China. Industrial sector in India contributes only 24.2 percent of GDP and it is very high of 42.6 percent in China in 2014. This clearly indicates the strength and growth of industrial sector in Chinese economy. The growth of services in Indian economy is quite
high with 57.9 percent share in GDP in 2013, whereas in China its share is 48.2 percent (Table 1.1).

China’s trajectory of economic development is from agriculture to manufacturing sector. Therefore, the share of employment in manufacturing has doubled during the years and share of output has tripled. On the other hand in India, the growth trajectory is from agriculture to services, and there is low growth in manufacturing sector over the years. However, the structure of employment also has not changed much. The contribution of primary sector in GDP in India has decreased considerably from 60 percent to 25 percent in forty years starting from 1970; share of employment in primary sector is around 50 percent which is still much higher. On the same note, the share of primary sector in GDP fell from 23 percent to 9.2 percent in four decades in China, but share of employment is approximately 33 percent.

The competitiveness in manufacturing sector in China is due to cheap labour and highly subsidized infrastructure which leads to increase in its exports in post 1980s. On the other hand, in spite of cheap labour, the exports growth in India is low may be due to poor infrastructure development (Bardhan, 2010). The public spending in health and education in China is much higher as compared to India. However, since 1990s, there is a slight increase in education spending but it is less than China. Despite opening up of the economy in 1990s, India’s weak state and poor reforms are responsible for the slow growth. In China the average growth in the last two decades was about 10 percent, whereas in India it was between 6-7 percent in the same period. Even in social indicators, China is ahead of India. In China the infant mortality rate is about 27 per 1,000 live births, and in India it is about 61. The rate of decrease of mortality rate in China is faster than India. According to World Bank estimates, poverty in China are much
less than India. About 100 million Chinese live below poverty line whereas in India a huge population of 350 million still lives below the poverty line.

India is expected to remain the fastest growing economies across the globe in the coming years. However, various empirical facts and statistics suggest that China may offer instantaneous certainty to business investment, but the potential for medium- to long-term investments is greater in India. In both the countries per capita income was 120 USD in 1970. In 2014, it increased to 7,380 USD in China and 1,610 USD in India (IMF, 2015). Total investment as a percentage of GDP in India and China were 19.2 and 34.3 respectively in 1980. It increased to 34.7 and 47.7 percent respectively in 2012. The gross savings rate as a percentage of GDP increased from 17.9 to 29.9 in India and 31.9 to 50.31 in China over the period 1970 to 2012. However, there is a slow structural shift in the two economies.

As in today’s world, the rate of growth of both these economies is quite high. In its recent report, IMF has forecasted that India would grow faster in 2016 with growth rate of 7.5 percent as compared to China with 6.8 percent. Therefore to study these two economies with respect to different sectors and their contribution to growth would be quite enriching (IMF, 2015). Focus on productivity in different sectors is also important as resources are scarce and has to be used efficiently.

Despite of high growth, China is successful in reining inflation. The inflation rate in India and China which was calculated through GDP deflator were respectively 1.56 percent and -0.56 percent in 1970. On the other hand, in 2012, it was 8.15 and 2.00 percent respectively in India and China.
The exports of goods and services in 1970 in India and China were very close with 2.36 and 2.39 billion dollars respectively. However, the scenario changed significantly ever since and it stood at 446.83 billion dollar and 2312.77 billion dollars respectively in India and China in 2012. The exports of goods and services grew 189 times in India whereas that of China it grew 968 times during the period 1970 to 2012 (Table 1.2).

In terms of population, the gap over time is reducing in China as compared to India. In 1970, population of India was only 0.56 billion and it reached to 1.24 billion by 2012. Over the same period, population of China increased from 0.82 billion to 1.35 billion. However, at present, the demographic trends in India are more favourable to China.

Though the study highlights the similarities/ dissimilarities of the two economies under consideration, the focus of the research remains on the growth of various sectors of the economies, namely agriculture, manufacturing and service sectors. The study would draw a sectoral comparative analysis of both the economies empirically.

1.1 Economic Growth Scenario in India and China

Economic Growth in India – A Snapshot

Basically in the post colonial history of India, economic growth has been demarcated into two phases. The first phase starts after independence till the end of seventies. The second phase started with reform process from 1980-81 and is still continuing. The market reforms phase saw various financial reforms and showed accelerated growth. Service sector grew magnificently in the market reform phase. Private investment increased substantially. The investment which took place was more towards machinery and equipments. More capital goods were imported in order to improve the
quality of the machinery. This played an important role in the growth acceleration of the economy (Panagariya, 2004).

India is a diverse economy with vast agriculture sector, small scale and modern industries and a large number of services. The share of services in India’s output is very high, nearing approximately two-thirds of total output with less than one-third of its labour force. In India, 58 percent of GDP now comes from the service sector.

After independence the political and economic condition in India were not sound. Both financial and social parameters were very discouraging. It was close to near stagnation till 1970s, a situation where there was inflation combined with high unemployment in the economy. Gradually from 1970s onwards, the development process started to take off with the implementation of five year plans. The focus to attain sustainability, poverty reduction, and employment generation was attained to some extent with heavy investment in public sectors and large capital formation.

From 1980s onwards, the GDP of India started accelerating with the boost from the growth of service sector. Government emphasised import substitution and industrialization as major strategies for the growth of the economy. Investment and consumption are the major determinants to increase GDP of an economy. Until 1980s, large share of savings were taken for public investments and after 1980s public consumption played a major role (Srinivasan, 2008).

Per capita real GDP doubled in the 1980s as compared to the average of the period 1950-1980. But this growth was debt led growth, which was unsustainable. In 1991, India has balance of payment crisis with foreign reserves down to less than two weeks worth of imports, and short-term external debt was several times the level of reserves.
As a result of it, government initiated several reforms and the economy was opened up and foreign direct investment was welcomed as a measure to boost growth. Due to these measures, the economy showed positive signs for growth; the rate of growth of GDP rebounded from 1.5 percent in the crisis of 1991-92 to reach a peak of 7.8 percent in 1996-97 (Ahluwalia, 1997).

The growth performance of India is questioned time and again. Due to slow growth in the Indian economy in the 1970s, a term ‘Hindu rate of growth’ was coined. After the new economic policy was announced in 1991-92, the transformations of Indian economy started. The Indian economy had pushed from the ‘Hindu rate of growth’ of 3.5 percent to a new higher rate that was estimated to lie between 5 to 6 percent. India has emerged as new Asian power by a series of dramatic internal, social, and political developments that are transforming much of India (Dhar, 1988).

During the period 1980–81 to 2002–03 economic growth averaged 5.7 percent per annum which was higher than the first phase of development by 1.2 percent. This growth has been called as the ‘Bharatiya rate of growth’, to distinguish it from the 3.5 percent average rate of growth during the first phase of development (Virmani, 2004). Again, from 2002 to 2011, growth was much faster as compared to 1990s. The average growth of most of the states in India has almost doubled from 2.8 percent to 5.8 percent in 2000s (Kumar and Subramanium, 2011).

**Economic Growth in China – A Snapshot**

In 1949, China was seen as one of the most impoverished countries of the world, the "sick man of Asia," with a per capita annual income of about US$50 and China's share of an expanding world economy had shrunk to about 5 percent (Naughton, 2007). The
first five year plan, which was taken from Soviet model of growth, from 1953-57 was instigated through industrial growth and socialization. During the second plan in China, the focus was to increase the production capacity in all the sectors of the economies. In 1958 people’s communes were formed, who were in charge of the ownership rights of the productive assets and they were responsible for most of the planning and decision making activities (Skinner et al, 1973).

Due to the inefficient performance of the communes, the economy went into severe crises. During this period, several factors such as severe famine in 1959, misallocation of resources and bad weather condition led to steep fall in agricultural output. After 1961 several measures were taken to restore economic stability. As a result of those measures during 1961-1966, the growth of agricultural output was 9.6 percent per year whereas during the same time industrial output increased at an average annual rate of 10.6 percent (Klien, 2004).

Modernization program started in 1977 under the leadership of Deng Xiaoping. In China's post-1978 economic development, literacy and low wage workers, were considered as an important factor for growth of industrial output. Other global economic factors include global economy trade opportunities, foreign investment, foreign loans, export-led development opportunities, export processing zones, etc (World Bank, 1997). In the 1970s investment started increasing significantly.

In 1978, the second phase of reforms started. Reforms were initiated in the economic system in the form of reduction of planning and control by the government authorities and opening up of the economy for foreign trade. As a result of it, the role of markets increased and centralized direct government control was much reduced. The initial years
of the reform processes were devoted to correcting the imbalances in the economy and sustainable planning for modernization. In this period incomes rose substantially, food grain production increased and there was growth in almost every sector of the economy. During the reform years, the role of foreign trade was not undermined. Prior to the reform period the volume of trade had rarely increased above 10 percent of national income. However, it increased to 15 percent in 1980 and 35 percent in 1986 of the national income.

The government also took several action plans and replaced direct plan control with indirect regulations of the economy. The government took various measures and reformed taxation and investment policies. In 1978, China began post-Mao economic reforms that have achieved per capita economic growth of 8 to 10 percent annually, among the highest rates in economic development history (World Bank, 1997).

China's economy regained the impetus in the early 1990s and focused on investment friendly policies. With massive investment, in 1993, the process of economic reforms broadened. Output and investment were soaring high. Economic expansion rocketed higher with the opening of more than 2,000 special economic zones and foreign capital flooded to the economy. Chinese economy grew at the rate of 9.5 percent in 1996 which was accompanied by low inflation.

In the Asian financial crisis, the economy hit a speed breaker, with growth of 8.9 percent in 1997, 7.8 percent in 1998 and 7.1 percent for 1999. Since 1978 GDP in China increased more than four times, and in year 2000 it grew at 8.0 percent. China's economy grew at an average rate of 10 percent per year during the period 1990–2004,
the highest growth rate in the world and 9.8 percent from 2003 to 2013 (World Bank, 2014).

Although China was growing at a huge scale in the reforms period, but there was high degree of inequality in the rural and urban areas in China. The country's most important factor of production was its labour force, the largest in the world. To enhance the productivity of the economy, reform measures were also taken to create more skilled as well as semi skilled labours.

1.2 Broad Policy Measures in Various Sectors of India and China

Post 1970s had seen several changes in various sectors of the economy in India and China. These changes are mostly due to factors responsible for the growth. The green revolution in the sixties proclaimed high yielding varieties of wheat and rice. After 1970s, the irrigation facilities improved considerably, government procurement system was much better, guaranteed support prices and inputs subsidies led to the upgradation of the agriculture sector. The main drivers for agricultural growth are increase in public and private investment for infrastructural development, fertilizers, improved irrigation facilities, availability of credit, better technology of production and climatic factors such as rainfall. Intensity of cropping increased in 1970s and early eighties with the increased use of high fertilizers and high yielding varieties of seeds. This intensification led to the mechanization in agriculture in the countries post 1980s.

Manufacturing sector is considered to be the wealth producing sector of the economy. The major sectors in manufacturing are textiles, capital goods, metals, chemicals, machine tools, tyres, cement, consumer electronics, automotive, leather and footwear
etc. Industrial development till 1990 in India was basically positioned on product market regulations with capacity licensing being its prominent component. Economic reforms in 1991 moderately removed these product market licenses. Industrial policies were more focused on industrial development rather than attaching it to controls and permits.

During industrialisation in China, the increasing savings ratio was one of the important factors for high growth. These savings led to domestic marketization and the integration of the world economy in the form of investment flows, technology transfer and increased trade helped to achieve higher growth. Globalization allowed China to pursue cheaper sources of energy and raw materials. Besides, it has also provided access to markets for finished manufactured products. Excess labour supply to the manufacturing sector was done by the migration of workers from rural areas to urban areas. Therefore, the export sector in China was capable of absorbing rural migrant workers.

Major reforms took place in iron and steel sector, non ferrous metals, oil and gas, coal, electricity and road during 1970s and 1980s. The manufacturing sector in China was focused on industrial policies which led to the structural transformation of the economy and achieving sustained employment (Chaudhuri and Panigrahi, 2012). China’s competitiveness in manufacturing is strengthened by investment in technology, education and infrastructure development.

India and China are aggressively moving ahead in services and increasing their contribution in GDP. China’s service sector is growing rapidly over more than two decades. The contribution of capital per worker in services is as large as that of industry
in China (Borsworth and Collins, 2008). India grew rapidly in service sector during post 1993 period. More importantly, India achieved this growth with a moderate contribution of capital per worker in services. India’s growth in information technology, communications, wholesale, and transportation is remarkable during post 1990s.

1.3 Motivation of the Study

The global economies have evinced interest as to how these two economies would pan out and would have an impact on the global market. It is also a matter of debate whether India would surpass China in terms of growth in the various sectors of the economy. India has higher growth potential in the service sector whereas China leads in manufacturing sector. China is maintaining positive trade balance over the years whereas India is largely having negative trade balance barring few years. Any disturbance in the exports from China would have larger ramifications in the global markets. The scope, size and the rates of growth of both the economies have generated keen interest of researches and policy makers.

While looking into the structure of the economy, it is noted that the dominance of manufacturing sector in Chinese economy is well pronounced. The share of manufacturing sector in Chinese GDP has been almost stable over the years whereas the share in India went down. These two countries not only account for 40 percent of the world population with 20 percent of the global output but also since last two decades both the countries have undergone extensive reform policies.

Apart from their economic growth story, it is important to compare India and China on their different institutional framework. Many commentators have been arguing in favour of India’s continuity of economic growth because of the democratic nature of
Indian political system. Klien (2004) described, “India is joining the high-growth club of nations, but in their own way, as a democratic nation. Politically and culturally, the two nations differ markedly, but economically they have some great similarities”.

1.4 Objectives of the Study

The main objective of the study is to compare the different sectors of India and China. This helps us to identify the various factors across different sectors responsible for growth and development of the economies. The specific objectives of the study are:

- To analyze the economic growth and pattern of growth of agriculture, manufacturing and service sectors in India and China separately.

- To identify the factors affecting growth of different sectors of India and China.

- To estimate the production function of agriculture and manufacturing sectors of India and China through production function approach using econometric tools.

- To find out the important macroeconomic factors responsible for growth of service sectors in India and China.

- To estimate the partial and total factor productivity growth in agriculture and manufacturing sectors of India and China.

- To forecast, manufacturing and the growth of commercial service exports in India and China till 2018.

- To draw policy implications for Indian economy.
1.5 Methodology of the Study

The study is based on data collection from secondary sources. The secondary data is gathered from various departments of government and nongovernmental organization of India and China. The various sources of data are India Statistical Database, Census and Economic Information Center Database, World Bank Database and Reports, Food and Agricultural Organization Database for agriculture data, International monetary Fund Reports and Statistical Database. In order to achieve the objectives, the study covers all the three sectors, such as, agriculture, manufacturing, and services of India and China.

Data is analyzed using statistical and econometric tools and techniques. The Cobb-Douglas production function approach is taken for formulation of econometric model and calculating productivities in various sectors. In developing economies such as India and China, growth not only depends on the factor accumulation but total factor productivity drives growth to a large extent and is sustainable too. As factor accumulation cannot be forever, hence to increase production one has to depend at the later stage on factor productivity. Therefore, the study of Total Factor Productivity (TFP) is of great relevance. It indicates the productivity with the scarce resources available (Basu, 2009).

To calculate total factor productivity parametric approach is used to estimate the parameters of the production function. Simple time series analysis is used in the service sector to find the impact of various macro economic factors on services at segregated level. Also, forecasting is done using Holts model in manufacturing sector and growth models in services sector.
1.6 Plan of the Thesis

The thesis comprises of five chapters. Chapter 1 gives a brief overview of the study. Chapter 2 discusses the agriculture sector in India and China in detail. The comparative analysis in India and China with respect to agriculture output, machinery, agriculture equipment and agricultural employment is carried out. Production function is estimated in both the economies in agriculture sector. Also total factor productivity is estimated using parametric approach with the help of econometric tools.

Chapter 3 provides in depth analysis of manufacturing sector. The reasons for rapid growth in this sector in China have been considered for discussion. Comparative analysis of the manufacturing sector is done with the help of econometric models. Tabular analysis is done in all these sectors and is used to compare the economies. Production function and productivity is estimated using Cobb-Douglas production function by econometric approach. Manufacturing output, machinery and transport equipment and employment in manufacturing sector have been discussed in this chapter and forecasting of manufacturing output is done in both the countries using Holt’s model.

Chapter 4 involves in-depth analysis of the service sector in both the countries. This chapter focuses on commercial service exports and imports, insurance and financial services, Information and Communication Technology service and mobile and cellular subscription in India and China. The growth of these services in both the countries is discussed and the reasons for the higher growth of service sector in India are highlighted. Forecasting of commercial service exports is done using growth models in India and China.
Chapter 5 pulls together the findings of all the chapters and concludes the thesis. Important results and analysis with respect to agricultural, manufacturing and service sector are discussed. Recommendation, limitation and scope of the study are also discussed in this chapter.
Appendix

Table 1.1 Sectoral Contribution of GDP (%) in India and China

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<td>21</td>
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<td>33</td>
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*Source: Central Statistical Organization, ceicdata.com*
Table 1.2 Broad Economic Indicators of India and China

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<td>China</td>
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<td>Mortality rate, under-5 (per 1,000 live births)</td>
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Source: WorldBank.org
Figure 1.1 GDP Growth in Billion USD (India Vs China)

Source: World Bank
References


