

# Sectoral Dualism in India: A Study of Structural Change since 1991

ABSTRACT  
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# Abstract

## 1. Introduction

The pursuit of economic development has been a central aspiration for nations worldwide. In the context of developing countries, the concept of dualism has emerged as a pivotal issue in understanding the complexities and challenges of their growth trajectories. Dualism refers to the coexistence of divergent economic and social conditions within a society, where certain segments prosper and progress while others grapple with poverty and stagnation. This multifaceted phenomenon manifests in different forms, such as the contrast between traditional and modern sectors, rural and urban areas, and indigenous and imported social systems. To grasp the intricacies of economic development, it becomes imperative to unravel the implications of dualism.

The doctoral thesis at hand delves into the concept of sectoral dualism and its profound implications for the economic development of India. A nation with a diverse and vast population, India has grappled with the complexities of dualism since its pre-independence era. Following the economic reforms in 1991, the country experienced significant structural shifts that reshaped its economic landscape. This study delves into the post-1991 period, seeking to elucidate the dynamics of sectoral dualism in India, particularly the disparity between the traditional agricultural sector and the burgeoning modern sectors.

The term 'dualism' characterizes a scenario that emerging nations might encounter during their early developmental stages. Dualism encompasses various interpretations and definitions, primarily denoting economic and social disparities within an economy. These differences can manifest as variations in technological levels among sectors or regions, divergences in geographic progress, and distinctions in social customs and attitudes between native and introduced societal systems. This dichotomy is recognized as the contrast between traditional and modern sectors, agricultural and industrial realms, and rural and urban domains. In line with Todaro and Smith (2015, p. 133), dualism represents the "simultaneous presence of two situations or phenomena (one favorable and the other unfavorable) that are mutually exclusive to different segments of society—such as extreme poverty and wealth,

traditional and contemporary economic sectors, advancement and stagnation, and limited higher education within a backdrop of widespread illiteracy." This investigation centers on sectoral dualism, hereafter referred to as dualism, specifically concerning the distinction between traditional and modern sectors.

Theoretical frameworks of development that espouse dualism, such as those formulated by Lewis (1954), Ranis and Fei (1961), Jorgenson (1967), and Paauw and Fei (1973), propose that economic development can be achieved through the reallocation of labour from the traditional sector, where labour's marginal productivity is negligible or negative, to the modern sector where marginal productivity is positive and aligns with the established wage rate. Historically, India has primarily maintained an agrarian economy even before gaining independence, with agriculture engaging consistently over half of the labour force. Presently, however, it has transitioned into a developing mixed economy characterized by distinct primary, secondary, and tertiary sectors. As noted by Godfrey (1969, p. 382), "Lewis singles out economies like Egypt, India, and Jamaica as clearly relevant to his theory." Similarly, Ranis and Fei identify India and Pakistan as representative of economies with dualistic features in line with their model. The distinct presence of extensive rural and urban areas unquestionably places India within the framework of a dual economy.

## **2. Research Questions**

This study describes the process of structural change in India since 1991 and explores the relevance of dualistic solutions in India. Some of the questions that this study seeks to answer are:

1. How to measure sectoral dualism and find out its extent and trend in India since 1991?
2. What has happened in the manufacturing sector since the economic reforms vis-à-vis employment, output and productivity, and why India has not followed the conventional trajectory of structural change i.e. from agriculture to manufacturing to services?
3. What are the employment, output and productivity trends in the service sector of Indian economy since the 1990s?
4. What is the stage of dualism that India is in according to the Lewis-Ranis-Fei Model of Economic Development?

### **3. Review of Literature**

Dualistic theories present an avenue to escape the constraints of diminishing returns in agriculture. The occurrence of diminishing returns is a consequence of surplus labour in agriculture, indicative of disguised unemployment. Arthur Lewis, in his seminal paper "Economic Development with Unlimited Supplies of Labour" (1954), underscores the pivotal role of capitalist surplus in the development process. He assumes a perfectly elastic supply of labour from the subsistence sector to the industrial sector. Industrialists hire labour until the marginal product equals the wage rate. Reinvestment of surplus by industrialists shifts the marginal product curve upward, augmenting surplus. This reinvestment cycle continues until all surplus labour is absorbed in the industrial sector. Additionally, rural hidden savings and agricultural surplus from large farmers also serve as sources of investment in industry, signifying the transition to a commercialized agricultural state.

In contrast to Lewis, Ranis and Fei (1961) accord equal importance to agricultural surplus and industrial profit. They propose a staged developmental process encompassing three phases. The initial phase involves the transfer of redundant, disguisedly unemployed agricultural labour to the modern sector. Subsequently, in the second phase, agricultural workers whose output falls short of the institutional wage rate but still contributes are transferred. This labour transfer enhances marginal productivity and increases agricultural surplus. The final phase, known as the commercial phase of agriculture, marks the exhaustion of surplus labour.

Ranis (2006) provides a historical backdrop for the concept of dualism and its evolution within the realm of development economics. He asserts that the interplay and dynamics between the industrial and agricultural sectors stand as the crux of the developmental challenge in densely populated economies at early stages of development.

Ercolani and Wei (2010) empirically examine the Lewis and Ranis and Fei model within the context of China spanning 1965 to 2002. Their findings attribute China's rapid economic growth primarily to industrial and service sector development, labour migration, and capital accumulation. They also underscore the significance of China's economic reforms in 1978 as a driving force behind this growth.

The matter under consideration is the degree to which these models find relevance in the Indian context. In historical context, the transformation of employment structure within India has experienced a notable lack of pace. However, there appears to have been a marginal uptick in this transformation during the post-reform period (Mazumdar and Sarkar, 2009).

In a study by Kathuria et al. (2012), the impact of economic reforms on dualism within the manufacturing sector is examined. They define manufacturing dualism in terms of the formal and informal sectors. The reforms in question encompass tariff adjustments, changes in industrial licensing, and the removal of product reservation for small firms. The study discovers that these reforms have exacerbated dualism by accentuating productivity disparities between formal and informal firms.

Goldar (2001) conducted an empirical evaluation of the Indian experience with liberalization and its impact on industrial performance. The study aimed to assess the effects of economic reforms on the manufacturing sector. The findings indicated mixed outcomes, with some industries experiencing significant growth while others faced challenges.

#### **4. Objectives**

India's economic transformation since 1991 has been a subject of great interest and debate. This study focuses on the process of structural change in India and examines the concept of sectoral dualism, specifically in relation to the manufacturing and service sectors. The objectives of this study are as follows:

1. To describe the process of structural change in India since 1991.
2. To measure sectoral dualism and analyse its trend in India since 1991.
3. To describe the trends of employment, output and productivities of labour and capital in the manufacturing sector in India since 1991.
4. To describe the trends of employment, output and productivities of labour and capital in the services sector in India since 1991.
5. To find out the stage of dualism that India is in according to the Lewis-Ranis-Fei Model of Economic Development.

## **5. Methodology**

This study will employ a mixed-methods research approach, incorporating both quantitative and qualitative methods. While the emphasis will be on quantitative analysis, considering the predominantly quantitative nature of the variables involved, qualitative insights will also be gathered to provide a comprehensive understanding of the research topic. The methodology will primarily be descriptive but also analytical and evaluative in nature, aiming to examine and assess the phenomenon under investigation.

Due to the pan-India scope of the study and resource constraints, the research will primarily rely on secondary sources of information. Extensive literature review will be conducted, encompassing a wide range of research studies focusing on labour, migration, wages, employment, and structural change in India. These secondary sources will provide valuable insights and theoretical frameworks to support the study's objectives.

The analysis will involve a meticulous examination of available data from reputable sources such as the National Sample Survey Organization, International Labour Organization, Ministry of Labour and Employment, and other relevant organizations. These datasets will serve as the foundation for assessing the trends and dynamics related to sectoral dualism in India.

Once the data has been collected, various econometric techniques will be applied to explore and evaluate the relationships among the variables. Time series analysis will be employed to assess the changes in variables over time, while simple and multiple regression analyses will be conducted to quantify the associations and dependencies between different factors. These econometric techniques will provide statistical evidence and facilitate a deeper understanding of the phenomenon of interest.

By employing this comprehensive and rigorous methodology, the study aims to provide robust empirical findings and contribute to the existing body of knowledge on sectoral dualism and structural change in India.

## **6. Conclusion**

This thesis has examined the process of structural change in India since the 1980s; this has been done by probing into the concept of sectoral dualism, also known as economic dualism, both in its historical context and its relevance in India. Traditionally, economic dualism is identified as the simultaneous existence of a traditional and modern sector where the traditional sector is mainly responsible for generating the surplus required for the economic development of a country. According to Lewis, Ranis-Fei and Jorgensen, in this approach the process of development is endogenous. Whereas, according to Hirschman, who propounded the model of unbalanced economic growth, in a dual economy with modern and traditional sectors, the modern sector is mainly responsible for driving the economy towards sustained growth. In this approach the process of development is exogenous. But in both the approaches the traditional and modern sectors have characteristics that are dual in nature with respect to their roles towards total output, employment, capital formation, factor intensity and factor productivity. With this framework in place, this thesis analyses the process of structural change and state of economic dualism in India.

The second chapter of this thesis which laid out the theoretical framework of this study, described three different kinds of economic dualisms: sociological (simultaneous existence of an indigenous and imported culture and social system), technological (refers to the differences in production functions and technological coefficients in the traditional and modern sectors) and sectoral dualism (explained above). It can be concluded that all three kinds of dualisms are still relevant in India; sociological dualism is relevant because India still has a sturdy foundation of traditional Indian culture with a strong influence of western culture which is mostly because of the historical impact of colonialism. Technological dualism is relevant in Indian context because the production functions and technological coefficients of agriculture and modern industry are very different which is evident from chapters four and six of this thesis. The combination of labour and capital and the techniques of production are more flexible in agriculture than industry, which means that labour and capital are easily substitutable in agriculture than in modern industry. Since India is a labour abundant nation therefore labour intensive techniques of production are used in agriculture. Sectoral dualism is relevant in India for many reasons but mostly because

India still has a very prominent and distinct rural and urban divide in terms of resource allocation.

The third chapter of this study focused on measuring dualism in India and analyzing its trend since 1991. This was done by looking at time-series data of various variables including share of agriculture in GDP, share of labour force in agriculture, share of manufacturing and services in GDP and unemployment rates in rural and urban areas. It can be concluded that there has been a constant decline in agriculture's share of employment and GDP post 1991. This decline in agriculture's share of employment and GDP shows that agriculture as a production sector in India has shrunk constantly from 1991-92 to 2016-17. As pointed out in earlier chapters, the shrinkage of agricultural sector implies that structural change is happening and economic dualism is reducing.

Manufacturing sector's share in employment has remained almost stagnant and the loss of share of agriculture in employment has been compensated by an increase in service and construction sectors' share of employment. Construction sector has absorbed a significant chunk of agricultural labour because it's labour intensive and provides unskilled jobs especially in real estate (residential) construction. Indian economy's experience with regard to development has been unconventional as it has moved directly from agriculture to the service sector, skipping manufacturing as far as employment is concerned. Labour force has moved to service sector because of a lack of jobs in manufacturing sector and also because of higher earnings in this services. Service sector has provided many opportunities for the self-employed which still is the largest work category in India, though the share of self-employed and casual labour has decreased while regular wage earners' share has increased post 1991.

The share of agriculture in GDP has fallen tremendously and this has been mostly compensated by an increase in service sectors' share in GDP. There is almost a one-to-one trade-off between the share of agriculture and the share of services in GDP. The share of construction in GDP has remained more or less stagnant throughout the period while that of manufacturing has improved slightly.

Labour productivity in agricultural sector has improved since a lot of disguisedly unemployed labour has moved out of this sector. Manufacturing sector

has also shown an improvement in labour productivity as its share in employment has remained more or less constant but its share in GDP has increased. Construction on the other hand is characterized by a declining labour productivity as its share in employment has increased significantly but share in GDP has remained almost stagnant. Service sector is characterized by an increase in both the share of employment and the share of GDP but the share in GDP has increased more rapidly than share in employment, therefore an increased labour productivity is indicated in this sector.

The fourth chapter looked what happened in the manufacturing sector in India in the post reform period with respect to employment and output and why India did not follow the conventional path of structural change i.e. from agriculture to manufacturing to services. This chapter presented a disaggregated analysis of the manufacturing sector in India where various sub-sectors of manufacturing were looked at from the point of view of capital and labour intensity. It was found that there is more than enough evidence and consensus on the fact that the manufacturing sector in India has not grown in terms of employment and production as economic development requires. India's economic growth trajectory represents an anomaly in the traditional economic growth process, which is to go from agriculture to manufacturing to services. Quite frequently the argument proposed is that India has jumped directly from primary to the tertiary stage, skipping manufacturing sector by and large. The economic reforms of 1991 helped the manufacturing sector to grow initially but then it again slowed down in the second half of the decade. However, manufacturing sector's growth picked up again in the early 2000s but it only lasted for a short period. After the economic reforms, Indian manufacturing sector has found it hard to compete with foreign players in the international markets. The growth of manufacturing has fluctuated a lot from 1980-81 to 2016-17 and the average growth rate has barely increased in this period. As seen in the third chapter of this study, manufacturing sector's share in GDP increased by about 4% but its share in employment remained almost the same. It is concluded that the economic reforms of 1991 did not help the manufacturing sector enough to maintain a sustainable growth of output and employment.

Organized and unorganized sectors of manufacturing differ a lot in their trends of employment, but a declining growth rate is observed in both the sectors. Higher

growth of output than employment is evidence of a more capital intensive production in manufacturing. This is also shown by the estimates of the production function of manufacturing where the output elasticity of labour is insignificant while the output elasticity of capital is almost one. The decadal CAGR of employment in manufacturing sector has also declined almost continuously since the 1980s and this is especially true for the labour intensive sub-sectors such as textiles, food products and leather. A constant decline in labour-capital ratio in manufacturing has also been observed which clearly points towards an increasing capital intensive production leading to jobless growth. A declining trend in marginal productivity of capital in manufacturing is also observed as more and more capital is being employed in manufacturing but the growth rate of output has not been very significant. Diminishing returns to capital are evident but still the Indian economy is moving towards more capital intensive production. In organized manufacturing, the growth rate of employment is found to be significantly related to the growth rate of wages and real output and both are found to be directly related to growth rate of employment. The growth rate of mandays per worker is not found to be related to the growth rate in employment.

Labour laws in India have had a major role to play in the growth of employment in the organized manufacturing sector. The main contention has been labour rigidity in Indian labour laws and regulation. The employers, investors and the business class have long accused the Indian labour laws of being too rigid and have demanded reforms to make hiring and firing more flexible and easier. The labour codes of the central government aim to make the numerous labour laws simpler and easy to enforce and comply. However, a closer look at the labour codes shows that most of the labour law reforms have been in favour of the employers rather than the employees. Despite of more than two decades of reforms and studies in labour laws and regulations, India still seems far away from striking the right balance between labour market flexibility and rigidity so as to ensure economic growth while protecting the rights of the workforce.

The fifth chapter of this study analyzed the output and employment trends in the services sector in India at a disaggregated level by looking at the sub-sectors of services. A production function of the services sector was also formulated and analyzed to see the trend of productivities of labour and capital. It is concluded that

the growth of employment in services sector in India since the 1980s has been led significantly by business services which is followed by financial services and hotels and restaurants. The sub-sector which has shown the poorest CAGR in all decades from 1980 to 2017 is that of public administration and defense which indicates that government hiring in services needs a strong push. As far as the capital-labour ratio is concerned, the early effect of the reforms did not have much impact on the capital employed per person in the services sector. However, from early 2000s the capital-labour ratio starts to show a steep rise; this rise is there till the end of the period under consideration. This shows that more and more capital is being employed per person in the services sector and that the increasing share of services in national output can be attributed to capital intensive production.

Through the estimates of the production function of services sector it is concluded that both labour and capital have contributed significantly to the growth of service sector's output. In services sector the estimate of labour elasticity of output is greater than capital elasticity which indicates that increase in labour employed has had a more important role in growth of services rather than increase in capital. Despite this the capital-labour ratio or the capital employed per person has been increasing over the years; this can only be explained by the fact that capital is cheaper for businessmen as compared to labour. Another conclusion is that the addition of labour and capital elasticities of output is greater than one, this indicates increasing returns to scale in services sector. So policy wise it would be advisable to increase both capital and labour for increasing returns. Even though the share of services in employment has been increasing, more labour can be absorbed by services sector as the labour elasticity of output is quite significant and greater than the capital elasticity of output.

The absorption of labour in the services sector has been beneficial for the Indian economy as the marginal product of labour in services has been rising gradually and more so after the year 2004. An increasing trend of capital-labour ratio is observed in services, since more and more capital is being employed per person while the marginal product of capital in services is showing a non-increasing or constant trend. Hence, it can be concluded that capital is giving decreasing returns in services as too much of it is being employed in this sector despite of a constant marginal product of capital.

The sixth chapter studied the process of structural change and economic growth in India since 1980s using the dual economy framework of Ranis-Fei model of economic development. The economy is divided into two sectors – agricultural sector and non-agricultural sector – and the trend of labour, capital and output is analyzed through simple Cobb-Douglas production functions in both sectors. Time series data from 1980-81 to 2016-17 has been used to construct the production functions of both sectors. The chapter also looked at the contribution of labour reallocation effect - the reallocation of labour from agricultural sector to non-agricultural sector - on the national output of Indian economy. It also identified the stage of economic development that India is in according to the Ranis-Fei model.

It is concluded that the Ranis-Fei model is still relevant for the Indian economy and it provides many insights into the growth process of the country. The findings of the sixth chapter are very much consistent with the predictions of the Ranis-Fei model. India was a highly dual economy in 1980s with almost 70% of the labour force in agriculture that produced a mere 42% of the gross domestic product. Indian agriculture harboured a huge amount of redundant labour with very low marginal productivity. Enormous capital investments in the non-agricultural sector pushed the marginal product of labour up, which resulted in a higher wage rate and therefore helped in the reallocation of labour away from agriculture. It is found that in terms of output, capital and labour, the non-agricultural sector has grown at a much faster rate than agriculture. This is evidence of the fact that the process of economic growth in India since 1980s has been mainly due to the expansion of the non-agricultural sector driven by reallocation of labour away from agricultural sector and capital accumulation in non-agricultural sector.

The gap of marginal product of labour between the two sectors increased rapidly especially in the post-reform period. The contribution of labour reallocation to Indian economic growth has been quite significant – on average 1% per year since 1980-81. It is also concluded that the Indian economy is in the second stage of economic development according to the Ranis-Fei model. The marginal product of agricultural labour started rising only after the economic reforms of 1991, so it can be concluded that India entered the second stage of economic development at this time. Indian economy is still in the second stage of economic development with disguised

unemployment in the agricultural sector as the marginal product of labour in agriculture is still below the initial average product of labour.

## **7. Policy Recommendations**

1. Instead of assuming that market forces on their own will take care of India's problem of economic dualism, there is a need for greater policy attention and intervention to the problem of economic dualism and for greater state action in reducing the disparities between the two segments of Indian economy.
2. India has experienced exclusionary economic growth since the economic reforms of 1991, which favoured the formal sector much more than the informal one. More and more resources have been allocated to the modern sector while the traditional sector has been left to its own devices. Inclusionary economic growth must be the focus of the Indian government in order to reduce economic dualism.
3. The informal sector harbours a huge workforce that is either unskilled or semi-skilled. Meaningful skill development programs that take in account the skills necessitated by market demand need to be introduced by the Indian government.
4. Expansion of overall gainful job opportunities will automatically ameliorate the problem of disguised unemployment and economic dualism; this can be done via a wide array of actions including:
  - a. Providing more support to rural employment guarantee programs
  - b. Encouraging labour intensive techniques of production
  - c. Ensuring better learning outcomes in government schools
  - d. Allocating a larger share of government budget for public health and education