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Economic Performance of Informal Sector during Liberalization Period: An Empirical Study of India

SYNOPSIS OF PhD THESIS

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SYNOPSIS

1. Motivation for the Study

The informal sector has been significant contributor to the employment and output of the developing economies in general, and the Indian economy, in particular. Economic performance of the informal sector can be attributed by its size and growth in country’s output and employment. In fact, economic performance of the informal sector in India is linked to the performances of the whole economy because the informal sector accounts for about 86 percent to the total employment generation in 2004-05 and about 60 percent to the Net Domestic Product in 2005-06. Moreover, output growth depends on the productivity and efficiency of the enterprises. In the context of a globally competitive market, efficiency and productivity of the enterprises uphold the ability to survive and maintain their market share. In general, economic performance of the informal sector can be measured overtime and as compared to the formal sector under specific policy regimes. For instance, one can broadly divide the policy regimes by pre and post liberalization periods, or by trade policy regimes. Informal sector’s economic performance during these policy regimes can be measured by a) post liberalization era b) comparative analysis between the pre and post liberalization period and c) comparative analysis across sub-sectors within the informal sector.

Economic liberalization covers both stabilization and structural adjustment measures. Further, it includes liberalization of both domestic and external sectors. Stabilization deals with controlling fiscal balance, balance of payments, external payment deficits and maintenance of a low rate of inflation, while structural adjustment aims at improving efficiency and productivity besides integrating the domestic economy with the world trade and capital movements. The structural adjustment programme brings in reforms in fiscal, industrial policy as well as policies concerning the public sector, the financial sector and external sector. External sector liberalization includes foreign trade, investment and exchange rate liberalization and depends upon various factors like the dependence of the economy on foreign trade, financial sector liberalization on external account etc. It expects trade to act as an engine of growth. If a country’s dependency on foreign trade is limited, internal liberalization assumes greater importance in terms of influencing the growth of the economy. Trade liberalization is an important component of economic liberalization and includes the removal of trade barriers, such as tariffs and non-tariff barriers, as well as internal
restrictions, such as directed credit and preferential purchasing. Further, it measures the extent of export promotion (i.e., shifting of resources from import substitution to export activities), increase in the degree of openness (increase share of exports and imports in national income) and marketisation (i.e., changing the structure of incentives and institutions such that the reliance of market).

In regard to the informal sector, both economy-wide and sector-specific policies have impact either through production side or through labour and employment. The direct impact is experienced by the informal enterprises in the form of changes in prices and availability of inputs, changes in the degree of competition within the specific activity grouping and changes in demand for the particular product or service produced (Mhone, 2010). These, in turn, affect the competitiveness of the informal enterprises. Liberalization exposes all the industrial units to the inherent risk of free market competition. As a consequence, they are bound to reduce their cost of production. In an effort to lower production costs, domestic producers seek informally produced inputs either fully or a part giving sub-contracting to the informal firms, which are cheaper since informal producers generally do not abide by labour or fiscal regulations (Fugazza and Fiess, 2010). Increased demand for informally produced inputs therefore leads the informal sector’s growth. From the perspective of employment, formal firms attempt to reduce labour costs by cutting worker benefits, replacing permanent workers by part-time labour, or by laying off workers from the production process. The retrenched workers from the formal sector get absorbed in the informal sector due to its easy entry. In view of the negative impact, trade liberalization reduces the trade cost which implies that only the most productive (formal) firms find it more profitable to export to international markets, while least productive informal firms are forced to exit the industry (Aleman-Castilla, 2006). Thus, the sign of the relationship between trade liberalization and size of the informal sector is an empirical question.

India initiated the process of integrating its domestic economy with the global economy from the early 1990s due to severe balance of payments crisis, high fiscal deficit and high inflation rate. The main goal of the liberalization had been making the economy more market oriented through increasing competitiveness and reducing government interventions. The establishment of World Trade Organization in 1995 has further intensified the degree of competition across domestic and global markets through removing of restrictions on foreign direct investment. Because of its wide coverage, liberalization, in general, has impacted the
entire Indian economy, i.e., both the formal and informal sectors. Specifically, performance of both the formal and informal sectors in terms of their size and growth of income, employment, efficiency and productivity to whole economy have been changing between pre and post liberalization period. For instance, as per the results of the National Sample Survey conducted in 2004-05, about 7.62% of the total work force was formal in nature, while the remaining 92.38% or about 422.61 million workers were informally employed. Further, the compound annual growth rate of labour absorption in the informal sector in the post-liberalization period (from 1999-00 to 2004-05) was 2.76%, as compared to 1.38% in the pre-liberalization period (from 1983 to 1988).

Thus, the rapid growth of the informal sector in India raises the question regarding the relevance, applicability and impact of liberalization measures particularly in the context of the informal sector. Specifically, it is important to know how the economic performance of the informal sector can be explained during the liberalization period. In this regards, various research questions arise, such as, the following.

1) What are the changing definitions of the informal sector at the national and international levels over a period of time?
2) What are the changing contributions of the informal sector during pre and post liberalization periods in terms of income, employment, productivity and efficiency?
3) How can such contributions be theoretically explained and predicted, and empirically estimated or tested?
4) What are the relevance, applicability and impact of economic liberalization on economic performance of the informal sector in India?
5) What are the economic linkages between the formal and informal sectors, and how do they impact on economic growth?

2. Review of Literature

The review of literature focuses on the aforementioned issues by theoretical and empirical studies. Further, empirical studies are subdivided into Indian and global studies. The detailed review of literature leads to identify the following researchable issues and objectives for this study.
3. Research Gaps and Researchable Issues

There is a definitional and conceptual distinction between the unorganized and informal sectors and also the databases for the measurement of economic performance of the unorganized and informal sectors are different. In this context, it can be of interest to know to what extent such databases are comparable or distinguishable from the viewpoint of measurement of a comparative economic performance of the informal and unorganized sectors.

Both the formal and informal sectors have had changing contribution to the country’s economic growth in terms of income and employment generation. Most of the studies reviewed above have focused on the contribution of the unorganized sector for a shorter period of time with less emphasis on the unorganized sector’s growth under economic policy regimes. To fill this gap, it is necessary to extend the above studies by analyzing growth, composition and contribution of the unorganized sector over a long period and focus on a comparative analysis of the organized and unorganized sectors under different economic policy regimes and also by sub-sectors (as classified by NAS).

Generally it is argued that the informal sector follows labour-intensive technologies. High labour intensity of production is the main reason for large employment generation in the informal sector. There is a need to expand the earlier studies for analyzing further the trends and patterns of informal sector’s employment and informal employment separately along with the factor income of both the formal and informal sectors for a long time period. Moreover, studies are limited that have measured the determinants of informal employment in India using the enterprise level data. Most importantly, the determinants also vary across underdeveloped and developed regions within a country. In order to bridge these gaps, estimation of the determinants of informal sector’s employment by underdeveloped and developed regions is essential.

Considering its substantial contribution to the over all economic growth, it is important to measure the significance of the informal sector in terms of its efficiency performance. A number of studies have focused on the issue of performance measurement in terms of efficiency and productivity of the unorganized manufacturing sector and the impact of economic reforms on it. However, the unorganized sector is not limited only to
manufacturing; it includes eight other sub-sectors. Studies are very limited that have explained and analyzed the efficiency performance of the non-agriculture informal sector in India. To bridge this gap, measurement and analysis of efficiency performance of the informal sector in India beyond the manufacturing sector is needed.

The factor intensity in the informal sector may vary between the pre and post liberalization period and also through the liberalization period. This dynamism needs to be explored both at the aggregate and disaggregate levels, especially to measure the impact of economic liberalization on it.

The formal and informal sectors are linked in several ways, such as, through technological linkages, consumption linkages, supply chains etc. It is important to measure the linkages and their impact on economic growth based on an appropriate theoretical framework. This is important to derive select policy implications for the promotion and growth of the informal sector in India.

4. Objectives
Main objectives of this study are as follows:

1) Estimation of the contribution of informal/ unorganized sector to economic growth in comparison with formal/ organized sector and by specific policy regimes at national level aggregate and sectoral level of disaggregation.

2) Measurements of size, patterns and growth of employment of the informal sector at the aggregate and disaggregate levels; and estimation of economic determinants of informal sector’s growth and employment.

3) Estimation of technical efficiency of the informal sector across enterprises and its determinants.

4) Study the relationship between economic liberalization and informal/ unorganized sector in India; and explore the relationship between formal/ organized and informal/ unorganized sector in the pre and post liberalization periods.

5) Measurement of the total factor productivity growth and its components of the informal and non-informal unorganized manufacturing sector.

6) Derive policy implication for growth and promotion of informal/ unorganized sector under economic liberalization policy.
5. Methodology and Database

Methodology of the study is related to techniques of estimation, study area, study period and databases. The methodology is presented by objectives of the study.

The first objective is descriptive. It uses descriptive statistics, annual growth rates and compound annual growth rates (CAGR). The study period is 1970-71 to 2007-08 at the national level. Variables for these descriptions include annual Net Domestic Product (NDP), unorganized sector’s NDP, organized sector’s NDP, organized and unorganized sectors’ NDP by sub-sectors. Database for the measurement of these variables is annual National Accounts Statistics. The major limitation of NAS data is that it does not distinguish between informal and unorganized sector. Thus, in our analysis we have focused on this issue and made a distinction between informal and unorganized sector based on the available studies and NSSO unit level data.

Annual growth rates and compound annual growth rates (CAGR) are used for measuring the size, patterns and growth of employment in the informal sector both at the aggregate and disaggregate levels. The determinants of the informal sector’s employment are estimated using Probit regression analysis. Two states, one developed (Delhi) and one underdeveloped state (Orissa) have been chosen on the basis of the nature of the informal sector (urban/rural and modern/traditional), level of development (HDI index), population density, urban share in total population and gender empowerment measure to test the hypothesis on whether or not the determinants of informal sector’s employment in the underdeveloped and developed regions in India are same or different. Employment- unemployment data of 55th and 61st rounds of unit level data of NSSO (1999-2000 and 2004-05) are the basic databases for the second objective.

Third objective aims at estimating efficiency of informal enterprises by applying two stages Data Envelopment Analysis (DEA) technique. In the first stage, the technical efficiency scores of informal enterprises are computed, and in the second part, Tobit censored regression model is used for identifying the determinants of technical efficiency scores. The efficiency analysis is carried out for 1999-2000, because this is the only year for which a nationally representative sample survey for the whole non-agricultural informal sector was carried out by the NSSO.
Fourth objective is accomplished by estimation of the impact of trade liberalization by two measures of trade openness: (a) degree of openness to trade or value of total exports plus imports of goods and services as percent of GDP and (b) openness index constructed by using Principal Component Analysis (PCA) based on the foreign trade policies. This impact analysis has been carried out using a time series regression technique from 1970-71 to 2006-07 at the national level. National Accounts Statistics, World Investment Report and Handbook of Statistics of Indian Economy are the main data sources for this objective. In addition, the impact of the formal-informal sectors’ linkages on economic growth is estimated by extending the theoretical framework of Feder (1982).

To measure the total factor productivity growth and its components of the informal sector and non-informal unorganized manufacturing sectors, Malmquist total factor productivity index is used. The Malmquist TFP change index measures the TFP change between two data points by calculating the ratio of the distances of each data point relative to a common technology. NSSO (2001 and 2006) unit level databases on unorganized manufacturing sector of 2000-01 and 2005-06 are the databases for this objective.

6. Database


7. Organization of the Thesis

This thesis is organized to describe and analyze the economic performance (through contribution to output and employment generation) of the informal sector during the liberalization period. The impact of liberalization is captured in different chapter based on different performance indicators. It begins with a broad framework for analysis of output contribution and growth of the informal sector. Liberalization is measured by openness
indices and inter-sectoral linkages. Impact of liberalization on growth contributions of informal sector is captured by openness indices and on technical efficiency and components of productivity of the informal enterprises by inter-sectoral linkages. In addition, the determinants of informal sector’s employment are estimated to derive implications on promotion of informal sector from the viewpoint of employment generation. Overall conclusions and implications of the study are obtained from within the descriptions and analyses of the entire thesis.

In particular, the above materials are presented by eight chapters. Chapter 1 presents introduction of the thesis with motivation for the study, review of literature, research gaps and researchable issues, objectives, methodology and database of the study. Chapter 2 provides a descriptive analysis of the contribution and growth of the formal and informal sectors in Net Domestic Product at the aggregate and disaggregate levels. Chapter 3 presents the determinants of informal sector’s contribution to Net Domestic Product with special emphasize on the impact of liberalization. Formal-informal sectors’ linkages and economic growth is discussed in Chapter 4. Chapter 5 discusses the efficiency performance of the informal sector and its determinants, while total factor productivity growth and its components of the informal and non-informal unorganized manufacturing sector are described in Chapter 6. Employment in India’s informal sector and its determinants are discussed in Chapter 7. Chapter 8 concludes with policy implications.

8. Major findings of the Study
8.1. Contribution and Growth of the Formal and Informal Sectors: Descriptive Analysis
8.1.1. Distinction between unorganized and informal sectors
The concept of the formal sector is fully associated with the organized sector, while the informal sector is not fully associated with unorganized sector. Unorganized sector is divided into informal and non-informal unorganized sector. In case of manufacturing and services sector, the informal sector represents a part of the unorganized sector, while the informal sector represents the entire unorganized sector in rest of the sub-sectors. In terms of the characteristics of the enterprises of the unorganized manufacturing and services sectors, a lesser number of enterprises are registered in the informal sector in comparison to the non-informal unorganized sector. Even the percentages of enterprises operating on contract, number of average hired workers, average profit and average GVA per enterprise are higher.
in the non-informal unorganized manufacturing sector than the informal manufacturing sector. Moreover, number of own account enterprises are higher in the informal sector, while number of directory and non-directory enterprises are higher in the non-informal sector for both manufacturing and service sectors. The characteristics of enterprises are essentially different between the informal and non-informal unorganized enterprises in both the manufacturing and services sectors. Thus, it is not justifiable to use the informal and unorganized sector interchangeably for these two sectors for analytical purposes.

To distinguish between the informal and non-informal unorganized sector for analysis in this thesis the following definition is used: informal sector includes unincorporated (in ASI) proprietary and partnership enterprises with utmost total of nine workers, while non-informal unorganized sector includes unincorporated (in ASI) proprietary and partnership enterprises with at least total of ten workers or the enterprises run by trust, co-operative societies, limited companies (outside public sector) and others. In general, 93.74 percent of the unorganized sector can be taken as an approximate share of the informal sector. As this information is available for only 2001-02, it is not possible to measure time series variation in the share of the informal sector within the unorganized sector. Thus, for aggregate analysis both the terms are used interchangeably. However, at the enterprise level, especially for manufacturing and services sectors, the unorganized and informal sectors are distinguished.

8.1.2. Share and growth of organized and unorganized sectors

In order to analyse the contribution of organized and unorganized sectors in different foreign trade policy regimes, the study period is divided into six phases based on the broad framework of different foreign trade policy regimes using NAS data from 1970-71 to 2005-06. In phase-I (1971-72 to 1975-76) and II (1976-77 to 1985-86), India followed import-substitution industrial strategies but had not given much emphasis on exports. Since phase-III (1986-87 to 1990-91), India moved away from inward looking economic policies and gradually towards opening up. To make the Indian economy more integrated with the global economy, policy makers initiated trade liberalization (phase-IV (1991-92 to 1995-96)), started moving away from a quantitative restrictions regime to a tariff based regime and also started reducing their average level of protection. Phase-V (1996-97 to 2000-01) has been introduced because of the establishment of WTO in 1995 that has accelerated trade liberalization. In the phase-VI (2001-02 to 2005-06), measures announced in the annual
EXIM Policy 2001 have helped to strengthen the export production base and facilitate input availability besides focusing on quality and technological upgradation and improving competitiveness.

Results of the descriptive analysis show that both the organized and unorganized sectors have made a remarkable contribution. However, the unorganized sector’s contribution to NDP is higher as compared to the organized sector in terms of percentage shares. Although there is a decreasing trend observed overtime in the percentage shares of the unorganized sector, the share continues to be on the higher side. Both the sectors have increasing trend in growth during Phases- II and III; however, during Phase-IV, both the sectors have failed to sustain the trend in growth rates. Besides, during phase-V, the organized sector shows a decreasing trend, while the unorganized sector an increasing trend with both the trend curves converging towards each other. During phase-VI, both the unorganized and organized sectors are increasing at an increasing rate. Forward linkage prevailing between the organized and unorganized sectors through sub-contracting is an important explanation for both the sectors’ growth in this phase.

At the disaggregate level, there exists remarkable variability across the sub-sectors in terms of their percentage shares in the organized and unorganized sectors. Although the sub-sector-I’s (i.e., agriculture, forestry & logging and fishing) share in unorganized sector’s NDP has declined over time, it still accounts for the highest share in the unorganized sector. In the non-agricultural unorganized sector, the sub-sector- VI (i.e., trade, hotels and restaurants) garners the highest share, while the sub-sectors- III (i.e., manufacturing) and IX (i.e., community, social and personal services) lead greater shares in the organized sector’s NDP.

Moreover, there is a considerable variability across the sub-sectors in terms of their contribution to the organized and unorganized sectors’ growth. Although sub-sector- I (agriculture, forestry, logging and fishing) has been making major contribution to the total unorganized sector’s growth, it has decreased over time rather drastically from phase-V i.e, after the implementation of WTO norms. On the other side, sub-sector-VI (trade, hotels and restaurants) has contributed significantly to the growth of the non-agricultural unorganized sector. In the recent years, the contribution of the sub-sector-VII (transport, storage & communication) to both the unorganized and organized sectors’ growth has increased due to special attention of the policy makers on the information and communication technology.
In case of the organized sector, the sub-sectors- III (manufacturing), VIII (financing, insurance, real estate and business services) and IX (community, social and personal services) have contributed immensely to the total sector’s growth. Sub-sector-III’s contribution has been comparable to the entire study period, while sub-sector-VIII’s contribution is a subject of acceleration. The entire analysis provides a basis for examining the determinants of growth.

8.2. Impact of Liberalization on Growth of Informal Sector in India

8.2.1. Determinants of Informal Sector’s Growth

In order to measure the impact of trade liberalization on the informal sector in India, trade liberalization or the extent of the country’s openness in our analysis is measured by two methods. First, degree of openness of trade (i.e., value of exports plus imports of goods and services as percent of GDP) and Second, an openness index is constructed based on the different foreign trade policies and by using Principal Component Analysis (PCA). Determinants of informal sector’s growth are examined through time series regression analysis.

Time series regression results shows that as trade liberalization or the country’s openness increases, the size of the unorganized sector increases in absolute terms, while the coefficients in respect of both the specifications of trade openness are negative and significant when the relative size of the unorganized sector is considered as dependent variable. Thus, one can construe that due to liberalization both the unorganized and organized are growing but the rate of growth of the organized sector is much higher as compared to the unorganized manufacturing sector. This is due to the fact that the formal sector avails more advantages than the informal sector in terms of technology transfers, technology upgradation, labour mobility and training due to liberalization. Moreover, in all the specified models of the unorganized manufacturing sector, the coefficients of subcontracting between the formal and informal sectors are positive and significant in most of the cases. This implies that the vertical inter-firm relationship between the organized and unorganized manufacturing sector helps to grow the unorganized manufacturing sector.
8.2.2. Implication of Growth of Informal Sector on Functional Income Distribution

Trends in the functional income distribution of the formal and informal sectors show that in the initial years (1980-81), labour income accounts for more than 70 percent both in the organized and unorganized sectors. The share of labour income continues to be the same in the unorganized sector as before. This may be due to the fact that the informal sector uses labour intensive technology and this high labour intensity of production is the main reason for huge surge of employment generation and, thereby increases the share of labour income. However, the share of labour income decreases in the organized sector from 70 percent in 1980-81 to 55 percent in 2005-06. It is also observed that the share of labour income decreases rather drastically soon after liberalization (i.e., after 1991). At the disaggregate level, declining trend is evident in respect of the organized sector across all sub-sectors (excepting agriculture and trade, hotels and restaurants). Liberalization encourages the use of modern capital intensive technology in the organized sector, thereby enhancing the share of capital income overtime which in turn reduces the share of labour income. The labour share is an indicator of the income of the majority of the population, and our result shows a significant decline in the income of labour than the owners of capital in the organized sector.

8.3. Formal-Informal Sectors’ Linkages and Economic Growth

In addition to sub-contracting, the formal and informal sectors are linked through other ways such as, consumption linkages (i.e., one sector’s products being consumed by the other), technological linkages (i.e., technology transfer from one sector to the other), informal marketing chain (i.e., a disorganized mass of street vendors and merchants being well coordinated by a group of middle men dependent on the formal firms), informal supply chain (i.e., informal workers serving as suppliers of inputs to the local buyers who, in turn, sell the products to the formal industry through wholesalers). Thus, we have measured the combined impact of the linkages between formal and informal sectors on economic growth, by extending the theoretical framework of Feder (1982). The associated advantages of our theoretical framework are as follows: 1) the formal and informal sectors are linked in several ways, such as, consumption linkages, technological linkages, sub-contracting, informal marketing chain, informal supply chain, etc. If all the linkages are not easily identifiable and measurable separately, this framework can be used for capturing the combined impact of all the linkages; 2) If data in respect of all the variables are not available for the formal and
informal sectors separately, we can use this model for capturing the linkage effect using aggregate data; 3) The framework concerning the productivity differentials across the sectors provides plausible estimates.

Results of the empirical analysis show that domestic investment and externality of both formal and informal sectors have statistically significant and positive impact on economic growth. However, labour growth has negative impact on growth. Since in India a large proportion of surplus labour does exist, the growth of labour force may not always have a positive impact on output. Further, with an increase in the marginal productivity differences between the formal and informal sectors, the externality effect of the formal sector decreases, while the externality effect of the informal sector increases. Assuming that the formal sector always has a higher productivity, one can say that with an increase in marginal productivity differences between the two sectors the market share of informal sector decreases. This happens because an increase in the marginal productivity differences implies the movement of relative prices in favour of formal sector. Based on the estimation of sources of economic growth, results show that even if the informal sector is less productive, it still has a large externality effect besides making a significant contribution to economic growth. At the same time, we can not ignore the externality issue of the more productive sector (here, it is the formal sector). Although the formal sector’s externality impact is lower than the informal sector, it is positive and significant. Further, as is expected, both domestic and foreign investments make a positive contribution to economic growth.

8.4. Efficiency of the Informal Sector in India and its Determinants

Results of efficiency analysis of developed state (Delhi) and underdeveloped state (Orissa) contrast each other. In Delhi, the empirical analysis supports that firms operating on contracts are less efficient, while they are more efficient in Orissa. The amount of loan is significant and is negatively related to inefficiency in Delhi, while it is insignificant in case of Orissa. Our interpretation is that the firms in the developed regions having better accessibility to loans are able to utilize their resources properly and perform better which ultimately helps to earn a higher rate of return on capital. Moreover, the perennial firms in Delhi are less inefficient than casual and seasonal firms, while in Orissa they are more inefficient. In Orissa, firms operating on seasonal and casual basis are less inefficient than perennial firms because perennial firms produce their products both in the peak and lean seasons, while seasonal and
casual firms produce their products only in the peak season when labour and raw materials are available cheap and there is a high demand for their outputs. But, firms in a developed region like Delhi, may be able to find a better market for their products throughout the year i.e., both in peak and lean seasons.

Three common factors, namely, lack of markets or competition from larger units, enterprises operating within the household premises and enforcement of regulation are positively related to inefficiency in both the states. First, the informal firms face the problem of competition with larger units for capturing a market share. Further, firms producing their products within the household premises are more inefficient than the ones operating outside the household premises. This is due to the fact that the informal enterprises operating within the household premises are traditional in nature, producing mainly consumer goods and enjoy a relatively low share of market surplus, while the enterprises functioning outside the household premises are relatively more modern and bigger in size which produce both consumer and capital goods. Moreover, the enforcement of regulation makes the firms more inefficient due to the extra cost of regulation. Thus, our finding supports the existing argument (Alemida and Carnerio, 2008; Ulyssea, 2010) on the stricter enforcement of regulation associated with the lower performance of the informal enterprises.

8.5. Total Factor Productivity Growth of Informal and Non-informal Unorganized Manufacturing Sectors

Results of the Malmquist productivity index show that the average (of all states) TFP growth of the non-informal sector is higher as compared to the informal sector. Moreover, none of the states accounts for a positive TFP growth in the informal manufacturing sector, while four states (Arunachal Pradesh, Sikkim, Tripura and Chandigarh) account for a positive TFP growth in the non-informal unorganized manufacturing sector. The mean technical efficiency change and technological change are also higher in the non-informal sector than those of the informal sector. Technological change exhibits a major contribution to TFP growth in respect of both the informal and non-informal sectors. As compared to technological change, change in efficiency is quite low for both the sectors. Moreover, pure efficiency change and scale efficiency change are also much higher in the non-informal sector.
Due to larger size, directory manufacturing enterprises (DME) avail the advantages of economies of scale which, in turn, help the units achieve a relatively high in terms of total factor productivity growth. Among the three enterprise types, the lowest productivity growth is observed for the own account manufacturing enterprises (OAME). In this context, it is important to note that the informal sector is mostly concentrated in the OAME and accounting for the worst performance in terms of total factor productivity growth. Although efficiency change of DME in Delhi and Orissa is higher for the non-informal sector, technological change is higher for the informal sector. In the case of OAME, efficiency change and technological change are higher at the all India level. As for NDME, efficiency change and technological change are higher in the informal sector for Delhi, while it is lower with regard to Orissa.

On the basis of contracts, the firms working on contract exhibit lower efficiency change and technological change at the all India level. However, it is noticeable that in most of the cases, scale efficiency either increases or remains the same. This fact indicates that decline in TFPG is either due to decline in managerial efficiency or technological regress. For the informal sector, both Delhi and Orissa show that decline in managerial efficiency coupled with technological regress results in TFPG decline. In the case of the non-informal manufacturing sector, pure technical efficiency (managerial efficiency) remains the same in the enterprises operating on contract basis in Delhi and those not on contracts in Orissa. This implies that TFPG decline in the enterprises operating on contract basis in Delhi and those not on contracts in Orissa is mainly due to technological regress.

On the basis of the registration of the firms, the registered firms’ TFPG are higher than the non-registered firms with respect to all states. Moreover, the non-informal sector shows a higher (excepting Orissa) TFPG irrespective of the status (registered or unregistered) of firms. In the case of Orissa, the informal unregistered firms have higher TFPG than the non-informal unregistered firms. The registered firms show higher efficiency change and technology change with respect to both the informal and non-informal sectors for Delhi and at all India level. However, in case of Orissa, the registered firms have higher efficiency change and technological change with regard to the informal sector, while these are lower in respect of the non-informal sector. On the basis of the decomposition analysis, it is noticeable that both the managerial efficiency decline and technological regress result in TFPG decline in the informal sector across both the categories (registered and non-registered) for Delhi and
Orissa. However, in the case of the non-informal manufacturing sector, the registered enterprises possessing technical efficiency remains the same. This implies that TFPG decline across the registered enterprises in Delhi is mainly due to technological regress.

Results of the disaggregate analysis show that TFPG of the informal sector is higher as compared to the non-informal sector across all economic activities (excepting industry codes-33 and 37). Among 23 economic activities, activity-33 (i.e., manufacture of medical, precision and optical instruments, watches and clocks) accounts for a positive TFPG growth rate in the informal sector, while activities-28, 29, 32 and 34 account for a positive TFPG growth in the non-informal sector. The mean efficiency change in the non-informal sector is much higher than that of the informal sector, whereas the mean technological change in the non-informal sector is slightly higher than that of the informal sector. Among the 23 economic activities, activities-16 (manufacture of tobacco products) and 26 (manufacture of other non-metallic mineral products) have lowest technological progress with regard to both the informal and non-informal sectors. Considering the total productivity elements, this analysis indicates that TFPG growth in the activity-33 (with the highest TFPG growth rate in the informal sector) is due to major positive efficiency change. Further, considering technical efficiency elements, both the management efficiency and scale efficiency have increased substantially. Among the four economic activities (activities-27, 28, 29, 32 and 34) with a positive TFPG growth in the non-informal sector, all the activities have a positive efficiency change. Among these technical efficiency changes of the four activities, management efficiency has increased, while efficiency scale has decreased intensively for activities- 28, 32 and 34. This result is attributable to insufficient activities of the enterprises, productivity and selling scale limitations. In other words the main reason for productivity decrease of the enterprises, besides technology regress and the lack of adequate investments, is the limitation of activities and scale along with the optimal allocation of resources. Thus, state intervention is required to enhance the productivity growth through technological progress and reducing cost which, in turn, will enhance the competitiveness of the enterprises.

8.6. Employment in India’s Informal Sector and its Determinants

8.6.1. Trends and patterns

On the basis of the informal employment in global perspective, the status of India is in first position in comparison with the other countries in South and Southeast Asia and fifth
position. Although there is a marginal decrease in the informal sector’s employment, informal employment is increasing overtime due to the increase of informal employment in the formal sector. Further, the employment elasticity for the entire informal sector is higher vis-à-vis the formal sector, implying that the informal sector can accommodate more labour force owing to an increase in income due to its uses of labour intensive production technique.

8.6.2. Determinants of informal sector’s employment

In Delhi and Orissa, one year increase of age decreases the probability to get absorbed in the informal sector on an average of 0.058 and 0.031 respectively, holding other variables constant. In respect of both the states, it is observed that as age increases, the probability of getting absorbed in the informal sector decreases, while after a certain age the probability increases. This may be due to the fact that there is no age restriction to enter into the informal sector. Moreover, in Orissa, a change in the education level from literacy to illiteracy the probability to get absorbed in the informal sector will increase on an average of 0.417. The marginal effect literate but less than secondary level is 0.335 and secondary and higher secondary level 0.139 respectively. In Delhi, the marginal effects of illiteracy, literate but less than secondary level and secondary and higher secondary level are 0.262, 0.245 and 0.118 respectively. This implies that the person lacking in any general or technical education is more likely to join the informal sector and as the education level increases the probability decreases. From the given literature (Chen, 2001; Beneria and Floro, 2006), it was expected that females exhibit a higher probability of getting absorbed in the informal sector, but the results with respect to both the states support that males are more likely to get jobs in the informal sector. This may be due to the fact that females are less exposed to being employed even in the informal sector. In some cases, the results in respect of underdeveloped and developed states are contrasting to each other. Further, persons staying in the same place of work, belonging to ST community and staying in rural areas possess a lower probability in Orissa, while these show a higher probability of getting jobs in the informal sector in Delhi. This suggests that duality exists in terms of determinants of the informal sector’s employment within a country. Education is the main policy variable and the policy implications should be different for developing and developed regions within a country.

From the estimation of probabilities to get absorbed in the informal sector under different socio-economic conditions, it is seen that education (both general and technical education)
plays very important role in both the states. The person with illiterate, having no technical education, male, belongs in general community, stay in the same place of work and stay in rural region possess the probability to get absorbed in the informal sector is 0.976 and 0.994 in Orissa and Delhi respectively. Probability decreases with the increase of the education levels for both the states. For instance, incorporation the category literate but less than secondary level, probability deceases to 0.887 and 0.988 in Orissa and Delhi respectively. Further, increase the education level to higher secondary level and above, probability decreases to 0.531 and 0.919 for Orissa and Delhi respectively. If we incorporate the category of technical education, probability further decreases. The possible reason could be the illiterate and technically uneducated persons are unable to find jobs in the formal sector and they have the only option to get absorbed in the informal sector due to its easy entry. In some cases results are seen to contrast each other for Orissa and Delhi. On the one hand, the person staying away from the place of work and staying in urban region have the lower probability to get absorbed in the informal sector in Delhi. This implies that the person stay away from the place of work and stay in urban region getting greater exposure to find job in formal sector. On the other hand, the person staying in the same place of work and staying in rural region have lower probability to get absorbed in the informal sector in Orissa since they are not even getting exposure to find job in informal sector. Since more mobility creates more opportunity to find better jobs, better migration facilities is the another important policy variable. This finding is contrary to the usual argument of Harris and Todaro (1970) who states that rural to urban migration causes overcrowding and unemployment in cities as migration rates exceed urban job creation rates, with many people ending up in unproductive or underproductive employment in the informal sector. Thus, education (general and technical) and migration are the main policy variables for the promotion of employment.

Presence of informal sector’s employment does not necessarily imply the absence of unemployment. It is also evident that the unemployment rate is increasing with the increase of education levels. This is due to the fact that the formal sector is unable to absorb the entire educated workforce and educated people are not finding appropriate job in the informal sector. As the labour productivity (1999-00 prices) of the informal sector is Rs. 24242, there would have significant value addition if it is possible to accommodate all the unemployed in the informal sector. Thus, given the constraint in the formal sector’s employment, it is important to explore opportunities for promotion of the informal sector from the viewpoint of employment generation.
9. Conclusions

This thesis is organized to describe and analyze the economic performance (through contribution to output and employment generation) of the informal sector during the liberalization period. The impact of liberalization is captured in different chapter based on different performance indicators. It begins with a broad framework for analysis of output contribution and growth of the informal sector. Impact of liberalization on informal sector’s output is captured by openness indices and inter-sectoral linkages. Next, the determinants of technical efficiency and components of productivity of the informal enterprises are estimated. Finally, the determinants of informal sector’s employment are estimated. The major conclusions derived from the analysis are as follows.

1. Characteristics of enterprises in the informal sector are essentially different from unorganized sector in the manufacturing and services sectors. Thus, the unorganized sector should be divided into the informal and non-informal unorganized sectors for analytical and policy purposes.

2. Although sub-sector- I (agriculture, forestry, logging and fishing) has been making major contribution to the total unorganized sector’s growth, it has decreased over time rather drastically after the implementation of WTO norms. In the non-agricultural unorganized sector, sub-sector-VI (trade, hotels and restaurants) has contributed significantly to the growth. In the recent years (phase-VI), the contribution of the sub-sector-VII (transport, storage & communication) to both the unorganized and organized sectors’ growth has increased due to special attention of the policy makers on the information and communication technology (ICT).

3. Trade liberalization has significant and positive impact on the informal sector's growth. Moreover, the vertical inter-firm relationship through sub-contracting between the organized and unorganized manufacturing sector has significant and positive impact unorganized manufacturing sector. The share of labour income decreases in the organized sector decreases after liberalization (i.e., after 1991), while it remains same in the unorganized sector as before. Our interpretation is that liberalization encourages the use of modern capital intensive technology in the organized sector, thereby enhancing the share of capital income overtime which in turn reduces the share of labour income.
4. Both the formal and informal sectors have positive externality effect and they are interdependent. With an increase in the marginal productivity differences between the formal and informal sectors, the externality effect of the formal sector decreases, while the externality effect of the informal sector increases. Even if the informal sector is less productive, it still has a large externality effect besides making a significant contribution to economic growth. Although the formal sector’s externality impact is lower, it is positive and significant. Further, both domestic and foreign investments make a positive contribution to economic growth.

5. Lack of markets or competition from larger units, enterprises operating within the household premises and enforcement of regulation are positively related to inefficiency in both the states. First, the informal firms face the problem of competition with larger units for capturing a market share. Further, firms producing their products within the household premises are more inefficient than the ones operating outside the household premises. This is due to the fact that the informal enterprises operating within the household premises are traditional in nature producing mainly consumer goods and enjoy a relatively low share of market surplus, while the enterprises functioning outside the household premises are relatively more modern and bigger in sizes which produce both consumer and capital goods. Moreover, the enforcement of regulation makes the firms more inefficient due to the extra cost of regulation. In fact, the enforcement of regulation making firms more inefficient, throws up a question, is the formalization of informal sector through enforcement of regulations really helpful for the informal enterprises as well as for the entire economy?

6. The average TFPG of the non-informal sector is higher as compared to the informal sector. The mean technical efficiency change and technological change are also higher in the non-informal sector than those of the informal sector. Technological change exhibits a major contribution to TFPG in respect of both the informal and non-informal sectors. As compared to technological change, change in efficiency is quite low for both the sectors. Moreover, pure efficiency change and scale efficiency change are also much higher in the non-informal sector.

7. The informal sector is concentrated heavily in own account enterprises, whereas the non-informal unorganized sector concentrates only in directory manufacturing enterprises (DME).
Due to large in size, DME avails the advantages of economies of scale which, in turn, helps the units for more growth in terms of total factor productivity growth. The main reason for productivity decrease of the enterprises, besides technology regress and the lack of adequate investments, is the limitation of activities and scale along with the optimal allocation of resources.

8. Given the constraint in the formal sector’s employment, it is important to explore opportunities for promotion of the informal sector from the viewpoint of employment generation. In both developed and underdeveloped states, education and migration are found the main policy variables for employment generation. The person who doesn’t have any general or technical education possess higher probability to engage in the informal sector and as education increases their probability to get absorbed in the informal sector decreases. This is due to the fact that the illiterate and technically uneducated persons are unable to find jobs in the formal sector and they have the only option to get absorbed in the informal sector due to its easy entry. Since more mobility creates more opportunity to find better jobs, better migration facilities is the another important policy variable.

Since the informal sector is the a major source of employment of the working poor in the developing country like India, any discouragement of the production of these enterprises will lead to a high unemployment, poverty and income inequality. Trade liberalization has the positive impact on the informal sector’s growth. At the same time, imposition of fiscal regulations of the informal enterprises makes the enterprises more inefficient due to extra cost of regulation. Thus, the regulations should be imposed in such a way that it should not be burdensome of the enterprises. Specifically, the enterprises need to be identified for the protection in terms of different subsidy policies. The factors that determine informal employment in developed regions are in some cases different from the factors that determine employment in the underdeveloped one. Moreover, in terms of efficiency, the empirical analysis supports that firms operating on contracts are less efficient in developed state (Delhi), while they are more efficient in less developed state (Orissa). The analysis suggests that there exists duality in terms of the determinants of informal sector’s employment and efficiency within a country. Thus, policy may be prescribed separately for developed and underdeveloped regions.
10. Policy Implications

On the basis of our empirical analysis the policies are suggested for (i) employment generation, (ii) economic growth, (iii) efficiency enhancement of the informal enterprises, (iv) productivity improvement of the informal sector and (v) competitiveness of the informal enterprises. The results and analysis of the study have the following select implications for promotion of the informal sector.

1. Education is the main policy variable for employment generation. Policies should have special attention to promote education for all. In addition, policy maker has to take special initiative so that educated persons should get quality jobs as they deserves. In that case, technological upgradation in the informal production units will increase the quality of jobs for the educated persons. This kind of technological upgradation may also lead to unemployment. Incentive (especially, loan for self-employment) may be given to increase the number of the informal units.

2. The persons who don’t have any technical education possess higher probability to engage in the informal sector both in the developed and underdeveloped regions. In the developing country like India formal sector is unable to absorb all the work force. This implies that the informal workers may be properly trained skill formation and vocational training so that they can produce better quality of product using less time and it would also help in reducing the wage gap between formal and informal sectors.

3. More mobility creates more opportunity to find better jobs. Thus, one should note that the person under consideration may be efficient enough to work at a higher wage rate in some other places. Information regarding better jobs should easily available to the working poor. Thus, policies may focus on the better migration facilities.

4. Formal-informal sectors’ linkages have significant contribution on economic growth. Moreover, when the relationship is complementary between the two sectors, one sector helps to grow the other sector. Inter-firms vertical linkages through sub-contracting make the informal firms more efficient in underdeveloped region. Thus, policy may give a focus on strengthening the linkages between the formal and informal sectors.
5. Lack of market and competition from larger units is making the firms more inefficient in both developed and developing regions. Thus, a promotional policy needs to be implemented for better marketing facilities for the informal enterprises.

6. Firms producing their products within the household premises are more inefficient than the ones operating outside the household premises. Since household premises are traditional in nature producing mainly consumer goods and enjoy a relatively low share of market surplus, a promotional policy needs to be implemented in terms of credit for start-up and expansion capital and skill formation of these enterprises.

7. Within the unorganized sector, the non-informal sector is much better off than the informal sector. Thus, informal sector may be identified for policy suggestion instead of suggesting policies for the unorganized sector in general.

8. The main reason for productivity decrease due to technology regress and the lack of adequate investments. Thus, state intervention is required to enhance the productivity growth and reducing cost through technological transfers, education and training of the informal sector’s workers which, in turn, will enhance the competitiveness of the enterprises both in the domestic and international market.

11. Direction for Future Research

The scopes for further research includes the following.

1) In order to understand whether or not the determinants for informal sector’s employment are different between 2004-05 and 2009-10, one can extend the analysis by estimation of the determinants of informal sector’s employment using the 66th round NSSO data on employment and unemployment survey 2009-10 data which is yet to come in public domain. This comparative analysis is useful not only at the national level but also at the state and sectoral levels.

2) 11th five year plan has a special attention on social security and inclusive growth. Thus, our analysis can be extended in the light of social security and inclusive growth of the informal sector’s workers and informal workers. This may be useful to derive distributive implications of the output and employment growth in the informal sector.
3) We have measured the total factor productivity growth and its components of the informal and non-informal manufacturing sectors. Since the characteristics of the informal sector are different from the non-informal unorganized service sector, one can extend the analysis for the enhancing the productivity and competitiveness of the service sector.
References


