

**Urban Informal Manufacturing Sector in Assam: An
Analysis of Growth Dynamics, Productivity, Linkage and
Social Security**

**A Thesis Submitted to Indian Institute of Technology
Guwahati in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy**



**By
Ashima Majumdar
Roll No. 06614106**

**Department of Humanities and Social Sciences
Indian Institute of Technology Guwahati
Guwahati 781039
October 2012**

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Ashima Majumdar

Roll no. 06614106



Department of Humanities and Social Sciences

Indian Institute of Technology Guwahati

Guwahati 781039

October 2012







*Dedicated to my Dearest
Anchit*



Indian Institute of Technology Guwahati
Department of Humanities and Social Sciences
Guwahati 781039
Assam, India

Statement

I do hereby, declare that the matter in this thesis entitled “Urban Informal Manufacturing Sector in Assam: An Analysis of Growth Dynamics, Productivity, Linkage and Social Security”, is the result of investigations carried out by me in the Department of Humanities and Social Sciences, Indian Institute of Technology, Guwahati, India under the guidance of Prof. Saundarjya Borbora.

In keeping with the general practice of reporting observations, due acknowledgments have been made whenever the work described is based on the findings of other investigators.

Ashima Majumdar
IIT Guwahati
October, 2012



Indian Institute of Technology Guwahati
Department of Humanities and Social Sciences
Guwahati 781039
Assam, India

Certificate

This is to certify that Ms. Ashima Majumdar has been working under my supervision since January 2, 2007. I am forwarding her thesis entitled “Urban Informal Manufacturing Sector in Assam: An Analysis of Growth Dynamics, Productivity, Linkage and Social Security”, being submitted for the award of Ph.D degree of this institute. I certify that she has fulfilled all the requirements according to the rules of this institute, and regarding the work embodied in her thesis has not been submitted elsewhere for a degree.

Prof.Saundarjya Borbora
Supervisor

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List of Abbreviations

ASI: Annual Survey of Industries.
BILS: Bangladesh Institute of Labour Studies.
CSO: Central Statistical Organisation.
CHMI: Centre for Health Market Innovations.
DIC: District Industrial Centre.
DG: Delhi Group.
DME: Directory Manufacturing Enterprise.
ERIA: Economic Research Institute for ASEAN and South East.
FTW: Full Time Workers.
FTFW: Full Time Female Worker.
FTMW: Full Time Male Worker.
GNP: Gross National Product.
GOA: Government of Assam.
GOI: Government of India.
HDR: Human Development Report.
ICFTU: International Confederation of Free Trade Unions.
ICLS: International Conference of Labour Statistician.
ILC: International Labour Conference.
ILO: International Labour Organisation.
IMS: Informal Manufacturing Sector.
INTERDEP: Interdepartmental Project on Urban Informal Sector.
IOE: International Organisation of Employers.
IPC: International Policy Centre.
ISSA: International Social Security Association.
MOLE: Ministry of Labour and Employment.
MORD: Ministry of Rural Development.
MOSPI: Ministry of Statistics and Programme Implementation on India.
NAS: National Accounts Statistics.
NCEUS: National Commission of Enterprises on Unorganised Sector.
NCL: National Commission of Labour
NCRL: National Commission on Rural Labour.

NDME: Non Directory Manufacturing Enterprises.
NMP: National Manufacturing Policy.
NOE: Non Observed Economy.
NSC: National Statistical Commission.
NSSO: National Sample Survey organisation.
OAME: Own Account Manufacturing Enterprise
OECD: Organization for Economic Co-Operation and Development.
PTW: Part Time Workers.
PTFW: Part Time Female Worker.
PTMW: Part Time Male Worker.
RAID: Right and Accountability in Development.
RBI: Reserve Bank of India.
SNA: System of National Accounts.
SSA: Social Security Administration
UIMS: Urban Informal Manufacturing Sector.
UNCHS: United Nations Centre for Human Settlement.
UNESCAP: United Nations Economic and Social Commission for Asia and the Pacific.
UNECOSOC: United Nations Economic and Social Council.
UN- ESCWA: United national Economic and Social Commission for Western Asia.
UNHABITAT: United Nations Human Settlement Programme.
UIMS: Urban Informal Manufacturing Sector.
UNSD: United Nations Statistical Division.
WEP: World Employment Programme.
WIEGO : Women in the Informal Employment Globalizing and Organizing.

Abstract

The concept of informal sector was introduced into international usage by International Labour Organisation in its Kenya mission during 1972. Prior to this, in 1971, Keith Hart; a social anthropologist, discussed the working of the informal sector in the context of a third world developing country; Accra, Ghana. Following these, significant studies started to appear with their prime focus on the informal sector of the less developed and transition countries, where the influence of this sector is found to be much more significant than in other countries. In view of the growing importance of the informal sector for the developing economies; the present study intend to throw light on the working of the urban informal manufacturing sector (UIMS) in an industrially backward state of India; namely Assam and makes a comparison to the national level. The main issues that the study deals with are the growth dynamics and productivity of the UIMS in Assam vis-à-vis India, production linkage between the formal sector and the UIMS and the issue of social security. The study uses both primary and secondary data to achieve the desired objectives. NSSO is the only reliable source of secondary information, which publishes data on informal sector at regular interval. The secondary information is used to assess and compare the growth dynamics and productivity of the UIMS of the state to the national level. Primary data was collected through a field survey of 'Guwahati' area which is the most urbanised centre of Assam and the entire north eastern region and thus portray a true representation of an urban area. The data collected through primary survey is used in the assessment of the production linkage and in the evaluation of the social security status of the urban informal worker of the state.

The growth dynamics of the UIMS in Assam is studied and compared to the all India level with the help of a few important growth indicators pertaining to enterprises and employment characteristics. These includes number of enterprises, growth in the number of enterprises, share of the UIMS of the state in the UIMS at the national level, total employment, growth in the number of total employment, share of the employment in the UIMS of the state in the UIMS at the national level, number and growth of full time workers (FTW), number and growth of part time workers (PTW) and employment per enterprise (EPE). The growths of various indicators are compound annual growth rates. The technique of Shift Share Analysis is used for a

better understanding of the performance differences between the local economy and the nation. The productivity of the UIMS of the state is also calculated and compared to the national average by using both partial and total factor productivity measures. The Gross Value Added (GVA) is used as a measure of output which is deflated by the wholesale price index for the manufactured products. Capital input is represented by the Gross Fixed Assets (GFA) which is deflated by the wholesale price index for the machine and machinery tools. Total Factor Productivity Growth (TFPG) in this study is taken as the difference between the growth rate in value added and a weighted sum of capital and labour growth rates, the weights being the share of labour and capital in value added respectively. The index of efficiency of labour has been computed for the state and compared to the national levels. The index is calculated as the difference between the actual growth rate of labour productivity and the desired growth rate of labour productivity. The productivity of the informal sector is expected to be influenced by its linkage with the formal sector. The pattern of linkage between the formal and the informal manufacturing sector is analysed through a case study of Guwahati. A binary logistic Regression model is used to estimate the probability of the existence of the linkage between the formal and the informal manufacturing sector. Finally, in view of the growing concern over the social security of the informal sector workers, an attempt is made to quantify the level of insecurities among the workers of the UIMS of Assam through the construction of the Composite Labour Security Index (CLSI). The CLSI is a composite index of 8 composite indices such as; income security, employment security, job security, education and skill representation security, work security, voice representation security, financial security and family support security.

The results of the study show that UIMS is growing both at the state as well as at the national level. The rapid growth of the non directory and directory manufacturing establishments at the state level compared to the national level can be considered as positive sign for the development of UIMS of the state. In terms of productivity growth also the labour productivity in the state urban informal sector is found to be higher than the national average. However this result is expected to be influenced by the higher growth in capital intensity. The growing informal sector in urban Assam, however, failed to establish sufficient forward linkage with the formal sector of the state in terms of sale of their final products. The linkage is found to be rather strong

with the final consumers. On the contrary, a little over half of the informal units are found to establish backward linkage with the formal sector in terms of purchase of the raw materials and the intermediate goods. Though the sector is growing in recent times, signaling a sharp increase in the number of people depending on it, the corresponding social security arrangements for this section of workers is found to be inadequate. The calculated CLSI for this category of workers is found to be 0.43, which indicates that the social security of the informal workers of the state is at risk. At the same time the CLSI for the female workers is found to be marginally higher (0.44) than the workers as a whole, which indicates females in the urban informal sector of the state, are marginally better protected.

The present work suggests a few policies which may have a positive impact on the functioning of the informal sector in the state. However, in view of the growing size as well as importance of informal sector for Assam, it is important to have increasing number of studies on informal sector. Studies focusing on the constraints facing by this sector will be beneficial to formulate desired policies to overcome them. At the same time the government should take care of the social security needs of the workers engaged in the informal sector seriously by implementing the existing measures meant for these workers.

The work is expected to make a fresh contribution, at the regional level, to the literature on the growing importance of informal sector in a developing country like India.

Chapter 1: Introduction

1.1 Informal Sector: A brief introduction

There is little debate regarding the importance of informal sector as a source of income and employment generation for the poor in the developing countries. The growing importance of studying the informal sector is well laid by ILO in its report on international labour conference. The report states that

...‘the bulk of new employment in recent years, particularly in developing and transition countries, has been in the informal economy; as most of the people cannot find jobs or are unable to start a business in the formal economy’ (ILO 2002a)

The informal sector is growing rapidly in recent years in the developing world and the countries in transition (Portes et.al 1989). Once, the existence of the informal sector was considered as a transitory phase in the process of development of these countries. But later it is found that the sector not only existed but also expanded as the development process takes momentum and now the sector is considered as a solution to the problem of enormous surplus of labour in the developing countries (Mukhopadhyay 1998). The interest in informal sector activities was spurred by four problem areas – employment, economic development, urban growth and basic needs (UNCHS 2006). The problem of unemployment is a serious concern for the governments, employers and workers of the world, particularly for the developing countries of Latin America, Africa and Asia where hundreds of millions of people live under condition of bare subsistence or near starvation level (Morse 1970). Economic development in terms of rising Gross Domestic Product (GDP), rising

industrial and farm output, an increase in exports, flow of foreign direct investment and rising exchange reserve; carry little for this category of people. On the contrary, the development effort of these economies creates the problem of urbanisation which further aggravated the problem of urban unemployment. The migrated people from rural areas to the urban centers tie their hopes to a decent employment in the formal sector. However, inability of the formal sector to absorb the migrated people into their job requirement compelled them to generate their own means of employment and survival in the informal sector (Chaudhuri and Mukhopadhyay 2010). Further, introduction of Structural Adjustment Programme (SAP) creates a jobless growth in these developing countries, as the public as well as the private sector are to squeeze their employability to maintain competitiveness and cost efficiency (Singh 1993, Datt 1994, HDR 1996, Nyamu 1998, Soundarapandian 2005, Gupta 2006, RAID n.d, RBI 2011). This results in the existence, expansion and permanency of the informal sector in these economies. That is why the concept was initially observed and studied in the context of the developing countries, followed by a growing interest in the study of the informal sector in the developed countries. Though, present in developed countries as well, there are basic differences of dynamism of these enterprises. While in the developing countries it can be considered as a 'survival mechanism' for the poor, where people having no alternative employment get absorbed, in developed countries people involved in such enterprises; as they provide more autonomy, flexibility and freedom as compared to the formal sector (Gerxhani 2004). As a survival activity, the informal sector in less developed countries, unlike in developed countries, is labour intensive, generate low income and provide little capital accumulation. However, whether this is true is a debatable issue, as recent studies on

informal sector show that a large segment of the informal sector enterprises are efficient and also profit making (UNCHS 2006, Sanyal 2011). It is found that, over the years, not only the share of the informal sector in total employment is increasing but its share in GDP has also been increasing in these countries (Charmes 1999). As for example the average share of the informal enterprise sector in non agricultural GDP varies from a low of 27 percent in Northern Africa to a high of 41 percent in sub Saharan Africa. The contribution of informal sector to GDP is 29 percent for Latin America and 41 percent for Asia (Becker 2004). In Cambodia nearly 80 percent of the non agricultural GDP is produced by the informal sector (Heinonen 2008). These estimates indicate that the contribution of the informal sector towards non agricultural GDP is significant. This has raised an interest among the policy makers and researchers in the study of the growth potentialities of informal sector in the developing countries, especially on the count that it uses more of the unskilled labour and locally available resources (Kathuria et. al 2010a). Because of the major role played by the informal sector in employment creation, production and income generation, the sector is considered as an important part of the economy of these countries (Hussamanns and Mehran 1999).

1.2 Informal Sector in Indian Context

In Indian context also the importance of studying informal sector is understood from its major contribution towards employment as well as GDP (Sethuraman 1981, Fukuchi 1998, Lalitha 2002, OECD 2002, Muller 2003). Almost 93 percent of the working population fall in the informal sector which contributes nearly half of the total GDP, for which the informal sector is termed as the 'Backbone' and the 'Engine of Growth' of India (NCEUS 2008b, Sulzer 2004, Mukherjee 2009). Table 1.1 shows

the predominance of the informal employment in Indian economy where it accounts for over 90 percent of the total employment since 1994-95. It is important to note that the 60 million new employments created during 1999-2000 and 2004-05 are accommodated mainly by the informal sector with marginal increase in the formal sector employment in the total employment. NCUES (2009b) has explained this phenomenon as the “informalisation of the formal sector”, so far as employment is concerned.

Table 1.1: Total employment, Formal employment and Informal employment in India (in millions)

Time	Total Employment	Formal Employment	Informal Employment
1994-95	374	27 (7.2)	347(92.7)
1999-00	397	28 (7)	369 (93)
2004-05	457	35 (7.6)	422 (92.3)
2009-10	458	33 (7)	425 (93)

Source: Various NSSO rounds on employment and unemployment

In India, formally the term ‘informal’ has been introduced only in the 55th round (1999-2000) of the National Sample Survey Organization (NSSO). Earlier the terms used in the Indian National Account Statistics (NAS) are ‘organised’ for ‘formal sector’ and ‘unorganised’ for ‘informal sector’. Though slightly different in meanings¹ quite often the two terms (informal and unorganised) are used interchangeably (Ratnam 1999, NCEUS 2009a, NCL 2002). Organised sector in India is defined as consisting of all enterprises and establishments owned by government and non government economic agents which are registered or covered under one or the other of the widely applied act (NAS 2008). The sector comprises of enterprises for which statistics are available regularly from the budget documents or reports, annual reports in case of public sector and through the annual survey of

industries (ASI), in case of registered manufacturing units. On the other hand, the unorganised / informal sector refers to those enterprises whose activities or collection of data is not regulated under any legal provision and/ or which do not maintain any regular accounts. Non- availability of regular set of records has been the main criteria for treating the sector as unorganised. The informal sector in Indian context as defined by NCEUS consists of all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services on a proprietary or partnership basis and with less than ten total workers and informal employment is defined as unorganised workers consists of those working in the unorganised sector or households, excluding regular workers with social security benefits and the workers in the formal sector without any employment and social security benefits provided by the employers (NCEUS 2008a).

1.3 Manufacturing Sector in India and the Place of Informal Sector in it

In case of the manufacturing sector, enterprises which are registered under the Indian factories Act 1948 belong to the organised sector. Those manufacturing units which are not registered under section 2m (i)² and 2m (ii)³ of the Act constitute the unorganised manufacturing sector (UMS) (MOSPI n.d., Lalitha 2002). In India, the official definition of the informal sector enterprises consists of “Directory establishments” that employ at least six persons but not more than nine, “Non Directory establishment” which employ five persons or less and “Own Account enterprises” that employ only 1 paid worker (NSSO 2001). Manufacturing sector is gaining increasing attention in India’s development policies, which aimed at sustained growth rate (Mohammad 2010). However, the sector has shown mixed

performance during the reform period with relatively poor growth during 1991-93, a period of high growth in 1995-96 and then a period of stagnation from 1995-96 to 2000-01 (RBI 2011). The sector started showing higher growth after 2002-03 and attains an impressive growth of 9.5 percent in 2003-04 (Kumar and Gupta 2008). The sector grew more than 10 percent in the second quarter of 2005 itself (Kaur and Kiran 2008). Though the growth of India's GDP is largely been enabled by the dynamic growth of the services sector, the fact cannot be ignored that the country has to create gainful employment opportunities for a large section of its population, with varying degrees of skills and qualifications. It is the manufacturing sector which has to take the lead role in employment generation, as every new job created in the manufacturing sector has a multiplier effect of creating two or more additional jobs in the related activities (NMP 2011). To give a boost to the manufacturing sector and explore the latent potentialities of this sector the National Manufacturing Policy (NMP) was launched in 2011 where the contribution of the manufacturing sector in GDP is aimed to increase from 17 percent in 2005-06 to 25 percent by 2022 along with an addition of 100 million new jobs in this sector (GOI 2006, NMP 2011). During the process of transition (i.e. when the growth of an economy is being driven by manufacturing and tertiary sector rather than by the primary sector), manufacturing sector is known to generate employment for both unskilled and skilled labour. Growth in the manufacturing sector has the potential to elevate much of the Indian population above poverty line by diverting the majority of the workforce out of the low wage agriculture. This is supposed to generate a sustained growth for India and also attract more of the global business. In recent years India is emerging as the major manufacturing location for the companies around the world and the time is no

far when it will be termed as the global manufacturing hub. The growth of the manufacturing sector is also necessary for the overall growth of the Indian economy, as it can supply input and provide market to other products. It is expected that the solution to the agrarian crisis will also be found in the growth of output and employment in manufacturing sector (RBI 2011).

The manufacturing sector in India is broadly classified between registered or formal sector and unregistered or the informal sector. A comparison between the two segments shows that while the formal sectors' contribution to real GDP is significantly higher than the informal sector⁴, the informal manufacturing sector dominates in terms of number of enterprises and employment. In 1994-95 this sector accommodates nearly 78.2 percent of the total manufacturing employment which increased to 81.2 percent in 2005-06 (RBI 2011). At the same time more than 99 percent of the total manufacturing units fall in the informal sector (Kumar and Gupta 2008, Sahu 2008). The employment potentialities of the informal manufacturing sector (IMS) is further highlighted by the low employment elasticity⁵ in the organised manufacturing sector; which suggests that much of the growing labour force outside agriculture has been absorbed either in the tertiary sector or in the informal manufacturing sector (Mazumdar and Sarkar 2008). Historical evidence from the advanced countries as well as those of East and South Asia since 1960s suggests a negative association between growth in GDP per capita and the share of labour force in primary sector. It is thus clear that in terms of number of employment and enterprises the manufacturing sector of Indian economy is completely defined by the IMS (Sahu 2008). The manufacturing sector occupies an important place among the other informal economic activities for reasons such as higher potentialities for the

labour intensive industrialisation than the formal sector, relies more on household savings, based on widespread recycling of waste, old materials and machinery, acts as a training ground for skill formation and entrepreneurship development, provides inexpensive wage good catering the needs of the low income groups (Panda 2000). This sector is located mostly in rural areas, but with the rural preponderance having reduced in the period 1994-95 to 2005-06, signaling a sharp growth in the urban informal manufacturing sector (UIMS) (both in terms of enterprise and employment) between the mid 90s to the first five years of the 21st century. A distinct difference in the levels of productivity is observed between rural and urban areas, with the former being substantially lower than the later over the period from 1994-95 to 2005-06 (Chadha 1999). This is mainly because the urban enterprises are more capital intensive than their rural counterpart (NCEUS 2009a). This gives a thrust to the researchers to study the urban informal manufacturing sector as a potential growth driver of an economy.

1.4 Informal Sector in Post 1991

Globalisation has brought about a large number of changes in the world economy. The most prominent of these have been the growth of the informal sector and increased labour market flexibility (Ghai 2007). In India, the New Economic Policy (NEP) involving deregulation of domestic activities and liberalisation of foreign trade and investment regimes was introduced during 1991. The stabilisation programmes introduced under NEP aimed at controlling fiscal balance, balance of payment deficit and maintaining lower inflation while the structural programmes focused on measures for integrating the domestic economy with the global economy, productivity enhancement and higher movement of capital (The Liberal Budget 2007-08). This has

exposed the economy to both domestic and global competition (Henley et.al 2006). To improve the efficiency, productivity and competitiveness, labour saving modern technology was adopted by Indian industries which help them to attain higher goals in terms of quality and quantity. This resulted in continuous decline in employment in organised sector since mid nineties and most new jobs were located in the informal sector with low earnings and no social protection leading to the informalisation of the workforce in the economy (Standing 1999, Kalpagan 2001, Bhide and Kalirajan 2004, Papola and Sahu 2012). Thus, the Informal sector is the shock absorber of globalisation providing the safety net and a source of income for those who became unemployed by the structural adjustment process introduced in the economy (Carr and Chen 2001). Besides this, the process of globalisation; which affects the formal sector directly, have indirect impact on informal sector through various links between the formal and the informal sector such as sub contracting and outsourcing (Kathuria et. al 2010b). This has further enlarged the periphery of the informal sector.

Globalisation, thus, has increased the informal sector work and has opened up new approaches to study the ground reality such as informal sector (Mathew 2010). The size of the informal sector is of particular interest to economic policy makers who are concerned to promote the development of a micro-entrepreneurial sector. Hence it is pertinent to study the working of the informal sector in the post reform period.

1.5 Research Gap

Situated at the North – eastern Himalayan sub region of India, Assam is one of least industrialised states of India. In spite of being blessed with high potential for development of resource based and demand based industries in the state, the pace of

industrialisation in Assam has found to be unsatisfactory (Borbora 1996, GOA 2007). Industrial development is inhibited by its physical and political isolation from neighboring countries such as Myanmar, China and Bangladesh and from other growing Southeast Asian economies; ultimately leading to neglect by the federal government in regards to development (MSME 2011) The government of India has introduced a separate industrial policy for the north east region to promote industrialisation in the state which falls far behind expectation. The union ministry of Development of the North Eastern Region (DONER) pleaded to develop the North East as a Special Export Zone as the region has a vast international border with China, Bhutan, Myanmar, Nepal and Bangladesh are on its east, south and southwest. In line with the norms of the SEZs, the eligible units of the NER should be exempted from the levy of Service Tax. In view of the poor formal industrialisation in the country, the informal sector can be considered as a boost for the waves of informal industrialisation in the state. Thus informal sector is a boon for a backward state like Assam and thus needs to be explored and analysed in detail.

Though a number of studies at the disaggregated level of the Indian states have been carried out, keeping in mind the growing importance of the informal sector in Indian economy, majority of them have outwardly ignored north-eastern states (Mukherjee 2009, Sharma and Dash 2006). Only a handful of studies (Upadhyay 2007, Das 2007, Kumar 2007, Das et.al 2011) have focused on the working of the informal sector in the north eastern part of India. An on going project at V.V Giri National labour Institute , titled 'Employment challenges in north eastern states of India: Role and Potential of the Unorganised Manufacturing Sector', is also focussing on the employment potentialities of the UMS. However, the north eastern

part requires an in depth study on informal sector in view of the acute unemployment problem and the low level of industrialisation.

Keeping this gap in mind the present study makes an attempt to study the UIMS in Assam. The percentage of urban population in the state is rising from 4.29 percent in 1951 to 11.24 percent in 1991 and to 12.90 percent in 2001 and finally to 14.08 percent in 2011 (Economic survey of Assam 2011-12). Correspondingly the unorganised sector and the workers depending on it are also rising rapidly in the state. The researchers have not come across any studies, as of now, which deal exclusively with the UIMS of the state. Keeping this gap in mind the general objective of the present study is to study the UIMS in Assam along with the following specific objectives.

1.6 Objectives

The study attempts to achieve the following specific objectives

1. To assess the growth dynamics of UIMS in Assam vis-à-vis India. This is done with the help of various indicators related to enterprise and employment.
2. To assess the productivity of the UIMS of Assam vis-à-vis India.
3. To study the nature of the production linkages between the formal and the informal manufacturing sectors
4. To examine the social security status of the workers of the UIMS of the state.

1.7 Research Hypotheses

On the basis of the third and the fourth objectives the following hypotheses are formulated.

H1: there is linkage between the urban informal manufacturing sector and the formal sector.

H2: the social security of the informal sector workers is inadequate.

1.8 Methodology

To meet the objectives stated above both primary and secondary data are used. One of the major problems facing the researchers working on Informal sector is the heterogeneity and often the unreliability of the available data (Mukherjee 2004). The most comprehensive and reliable secondary data on unorganised manufacturing sector in India has been made available by the National Sample Survey Organisation (NSSO) through its periodical sample surveys on informal manufacturing sector (IMS). The thesis has made use of data on IMS carried during 51st (1994-95), 56th (2000-01) and 61st (2005-06) rounds of NSSO survey. The growth dynamics of the UIMS is studied with the help of some selective indicators pertaining to the employment/ enterprise characteristics. Productivity of the UIMS is studied through partial productivity measures. Labour efficiency index of productivity is also calculated. Relative productivities are calculated for the individual UIMS of the state and a comparison with the all India level is presented. Primary surveys are conducted to look into the aspects of linkage and social security. A case study of the urban informal manufacturing sector of the state is carried out to look into the pattern of production linkage and the social security among the informal workers of the state. Kamrup district⁶ is selected as the broad area of sampling which has the strongest urbanisation process within the state where urban population has been increasing from 7.65 percent in 1951 to 32.76 percent in 1991 and to 36 percent in 2001. Within the district the urban centre⁷ selected for sampling is Guwahati, which is the most urbanised centre⁸ in the entire north eastern region. The extraordinary urbanisation rate in the Kamrup district is fuelled by the explosive growth of the Guwahati city

accounting for 89.18 percent of the districts urban population. Guwahati thus reflects the urban life of the state very clearly and adequately. The linkage pattern is studied with a logistic regression model and the Composite Labour security Index is calculated (CLSI) to quantify the extent of the social insecurity among the UMIS workers of the state. The detailed methodology is given along with the relevant chapters.

1.9 Chapterisation

The study consists of eight chapters as follows.

The **first chapter** includes a brief introduction of the concept of informal sector, informal sector in Indian context, place of informal manufacturing sector in manufacturing sector of India, informal sector in the post 1991, Research gap, objectives, research hypotheses, methodology and Chapterisation.

The **second chapter** gives the theoretical background of the concept of informal sector, its origin and later developments along with its meaning and characterization.

The **third chapter** reviews the related empirical studies on it which helped in sketching the objectives and methodology for the current study.

The core chapters begin with the **fourth chapter** which presents an analysis of growth dynamics of the urban informal sector in Assam vis-à-vis India.

The **fifth chapter** presents a comparison of productivity performances of the urban informal manufacturing sector of Assam vis-à-vis India.

The **sixth chapter** examines the pattern of production linkages between the formal sector and the UMIS of the state. A logit regression model is used to measure the extent of linkage and the factors affecting it.

The **seventh chapter** deals with the social security aspect of the workers engaged in informal sector and make an attempt to quantify the level of insecurities among them. In the concluding **Chapter eight** findings of the earlier chapters are summarised, conclusions are derived and on the basis of the findings and conclusions some policy suggestions are outlined. Some of the research limitations as observed by the researcher are also included. Final section of the chapter discusses about the scope for the future research.

NOTES:

1. 55th round of the NSSO defines all unincorporated proprietary and partnership enterprises as informal sector enterprises. In the unorganised sector however in addition to the unincorporated proprietary or partnership enterprises, enterprises run by cooperative societies, trusts, private and public limited companies (Non ASI-Annual Survey of Industries) are also covered. The informal sector thus can be considered as a subset of the unorganised sector (Sharma and Chitkara, 2006).
2. Factories act 1948 2 m(i) refers to those industrial units whereon ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power.
3. Factories act 1948 section 2m (ii) refers to industrial units whereon twenty or more workers are working or were working on any day of the preceding twelve months and in any part of which a manufacturing process is being carried on without the aid of power or is ordinarily so carried on.
4. Average GDP of manufacturing sector in 1990-95 was 14.6% of which 9.3% was contributed by the formal manufacturing sector and 5.3% was the contribution of informal manufacturing sector. During 2000-05 the average GDP of the total manufacturing sector increased to 15.1% and corresponding the formal sectors' contribution increased to 10.1%, while the informal manufacturing sectors' contribution declined to 5%. In 2008-09 of the total manufacturing sectors' contribution of 15.6%, 10.4% is from the formal manufacturing sector and 5.2% is from the informal manufacturing sector.
5. For a comparison of employment elasticities between the organised and unorganised sector see NCEUS (2008) p 9
6. Kamrup is the most urbanised and industrialised district of Assam and bears the highest number of registered factories in Assam. (jnnurm.nic.in/nurmudweb/toolkit/CDP_Guwahati.pdf, *Economic survey Assam 2007-08*).
7. The definition of urban area adopted is as follows: (a) All statutory places with a municipality, corporation, cantonment board or notified town area committee, etc. (b) A place satisfying the following three criteria simultaneously: i) a minimum population of

5,000; ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and iii) a density of population of at least 400 per sq. km. (1,000 per sq. mile). (Census of India 2001)

8. Guwahati, the gateway to the north eastern region, is among the first 100 fastest growing cities in the world and is the 5th fastest growing cities among Indian cities. This has resulted in the migration of people all over the country towards the state and thus resulted in heavy concentration of informal enterprises. (<http://www.docstoc.com/docs/8713630/Guwahati-The-City>, Kar (2001) in K. Alam ed. *Guwahati: The Gateway to the East*)





Chapter 2: Informal Sector - An Overview of the Conceptual Issues

2.1 Introduction

The conceptual journey of informal sector as a traditional survivalist activity to the modern profit yielding venture has brought heterogeneity in its definition and characterisation. Due to this heterogeneity in terms of its definition, actors, activities and its content; the term and the underlying concept have been used by researchers and policy makers in such a way that it has given rise to plurality in its meaning (Sindzingre 2006). The sector varies between countries, economies and cultures (Thomas 1995). Even within a country it varies between different states and within a state it varies between different parts of the state. This makes it difficult to have a uniform definition of the term which can be applied in all situations irrespective of the purpose and place of study. This necessitates a clear understanding of the origin, definition and conceptual issues related to the informal sector. This chapter will look into the theoretical background of the concept of informal sector and present a detailed description of its origin and the recent developments.

2.2 Informal Sector: the Journey from the Past to the Present

The theoretical basis of the concept of informal sector grew out of many studies in the fifties and sixties of the last century that emphasised the presence of 'dualism' or 'dual economy' as a distinguishing characteristic of the developing countries. Lewis (1954) and Fei & Ranis (1961) in their writings found that the developing countries are segmented into two sectors; one the traditional, rural, subsistence, agricultural sector and the other the modern, urban, capitalist, industrial sector. In his

theory of 'unlimited supplies of labour', Lewis (1954) discussed the issue of capital accumulation by the developing countries with scarcity of investment and saving and a huge surplus labour in the subsistence sector. This is done by shifting the surplus labour from the subsistence sector to the capitalist sector at a fixed wage rate so long as the labour do not become a scarce factor. However, the presumptions¹ on which the models are based were found to be untrue as they ignore most of the structural conditions in contemporary developing countries. They failed to see a segmented urban economy and thus offer limited explanation of the problem of unemployment and rural urban migration in the developing world. A dichotomy in an urban area is recognised by Harris-Todaro (1970) rural urban migration model. In contrast to the Lewis-Fei-Ranis model of one way migration, migration in this model is regarded as two- stage phenomena, where in the first stage an unskilled rural worker migrates to an urban area and initially spends some time in the urban traditional sector and in the second stage the workers eventually attains a job in the more permanent urban modern sector. They found that people continue to move to crowded cities; where unemployment is high and rising, motivated by the large differences between the expected urban and rural income. It is assumed that the process of development would result in a shift of the economy from traditional to modern, from subsistence to capitalist and a gradual disappearance of the dualism in the course of development (Swaminathan 1991). In Marxist theory also the presence of the informal sector is considered but it is not being recognized as having a permanent place in the mainstream economy (Partahsaarthy 1996) as these activities are basically for survival and are therefore considered temporary in nature and would disappear along with industrialisation and modernisation (Straub 2005). These temporary activities

are assumed to be mitigated once the development process gets its momentum and the modern sector is again able to generate jobs for these 'footloose labourers' (Becker 2004). It was widely recognized that, with the right mix of economic policies and resources, poor, traditional economies could be transformed into dynamic modern economies (Chen 2003). The optimism is triggered by the successful rebuilding of Europe and Japan, after the Second World War. It was expected that, in the process of transformation, the traditional sector would be absorbed into the modern sector and thus disappear.

However, by the mid 60s it was found that the development policies were slow to trickle down to solve the problem of persistent unemployment of these economies (ILO 1970, Joshi and Joshi 1976). Demographic trends along with unstoppable urban migration meant that ever increasing numbers of people were entering the urban labour market, which was the modern sector. The urban sector started experiencing an increasingly large and visible "modern jobs gap" (Bangassar 2000). The theory of dualism of the past has got renewed interest during the early 70's when it was highly felt that the theory of dualism of the past can specifically be applied to the modern urban economy, especially in developing countries where population growth and rural urban migration make it impossible for the modern sector to absorb the new entrants. In the 'employment missions'² of ILO to the developing countries such as Kenya, Columbia, Sri Lanka, Phillipines etc it was discovered that a large majority of the economic activities are performed outside the formal regulatory system. Kenya mission was the first of its kind which recognised not only existence and persistence of the traditional sector but also its expansion to include profitable ventures as well as marginal activities (ILO 2002a). The mission chooses to use the term 'informal

sector' rather than 'traditional sector' to highlight the range of small scale and unregistered activities. Inability of the other sectors of the economy such as agriculture and other rural activities on the one hand and modern industry and services on the other- to provide income and employment opportunities to the growing labour force, was considered as the main cause of the existence of the informal sector (Husmanns 1997). However it was Hart³ (1971, 1973) who first used the term 'Informal sector' to suggest such a dichotomy in his study on economic activities for urban workers in Accra, Ghana. Hart used the terms 'formal sector'- more or less analogous to urban modern sector and the 'informal sector', which can be interpreted as an extension of the concept of urban traditional sector (Bromley 1978). He made use of a simple criterion to distinguish the formal from the informal sector, namely the distinction between the wage employment and the self employment. The dichotomization differs from the earlier one in that both the sectors are inherently modern and are the consequence of the urbanisation process in the third world countries, which serves as an index of transformation of traditional rural economies to the modern industrial one. Following these studies, the analysis of the dualism between the formal and the informal sector, and particularly the analysing the urban informal sector in the developing countries, has gained much attention (Saracoglu 2005).

2.3 Institutional History of Informal Sector

The institutional history of the informal sector can be divided in to four phases, corresponding to last four decades (Table 2.1).

Table 2.1: Institutional History of Informal Sector

1970s	Incubation years	WEP is launched. Employment Mission to Kenya- "informal Sector" is born World Employment Conference.
1980s	Dispersion Years	ICFTU Conference resolution on the informal sector. IOE Seminar on the informal sector.
1990s	Officialisation Years	ILC debat on "The Dilemma of the Informal Sector" ICLS standard on informal sector statistics SNA-93 incorporates informal sector INTERDEP informal sector project. New DG and "rejuvenated ILO"
2000 and the future	Expansion years	Worldwide renewed and expanded interest in informal economy.

Source: Bangassar (2000).

The decade of the 1970s is called the 'incubation years', when the concept of the informal sector was developed and took root. During this period the World Employment programme (WEP) was launched and the comprehensive employment mission to Kenya introduced the concept of informal sector. World Employment Conference⁴ was another major event during this period. The decade of the 1980s were the years of dispersion when this concept spread and was taken up by many and incorporated into their respective programmes. For the first time, informal sector activities began to appear in other major programmes besides the Employment Department. The new PIACT⁵ (International Programme for the Improvement of Working Conditions and Environment) included informal sector work items. The focus of the informal sector debate expanded to include changes that were occurring in advanced capitalist economies, where production was reorganised into small and flexible economic units. This gave way to the informalisation of employment relations with non standard jobs with hourly or piece –rate wages with no other

benefits attached. Sub contracting the production system to small informal units gave them a permanent place in the economy. During the decade of the 1990s, the concept of the informal sector achieved international recognition and was incorporated into the official international schema. Major development during this period include ILOs seminar on informal sector, ILO debate on ‘The Dilemma of the informal sector’ (during 1991 International Labour Conference), ICLS (International Conference of Labour Statistician)⁶ standard on informal sector statistics, incorporation of the concept in 1993 SNA (System of National Account)⁷, formation of the Delhi Group⁸ etc. At present the concept of informal sector is getting renewed interest around the world and more specifically in the developing countries in view of the introduction of the structural adjustment policies which further highlighted the role and significance of the formal sector.

2.4 Definition and Characterisation of the Informal Sector

Various terms are in use to refer to the informal sector. Some of them are ‘Black’, ‘Dual’, ‘Hidden’, ‘Moonlight’, ‘Off- the books’, ‘Unobserved’, ‘Unregulated’, ‘Unofficial’, ‘Untaxed’, ‘Irregular’, ‘Parallel’, ‘Shadow’, ‘Unorganised’, ‘Underground’ etc. (Williams 2006, Fleming et. al 2000). They are different from one another in one or more characteristics. Informal sector activities provide goods and services whose production and distribution are perfectly legal. This is the characteristic that distinguishes them from criminal economy which deals with illegal production (ILO 2002c). Due to these terminological differences, different fields (e.g. labour economics, sociology, finance, macroeconomics, statistics or criminology) give it a different meaning (Harding and Jenkins 1989). Originally, since its first appearance in the early 1970s, it referred to a concept for

data analysis and policy making. Now it is sometimes used in a much broader sense to refer to a concept for the collection of data on activities not covered by the existing, conventional sources of statistics.

Despite its wide use, the precise meaning of the term informal sector is debatable, as it is used in different meanings by different studies to suit the purpose at hand (Husmanns 1997, Ratnam 1999). According to the international definition accepted by the United Nations Economic and Social Council (UNECOSOC), the term informal sector denotes: **a)** all private unincorporated enterprises (informal enterprises) or households engaged in the production and sale of goods and services; and **b)** enterprises with employment size below a pre-determined threshold (NCEUS 2006). The first national commission on labour (1966-69) has defined unorganised labour as those who have not been able to organise themselves in pursuit of common objectives on account of constraints like casual nature of employment, ignorance and illiteracy, small and scattered size of establishments and the position of power exercised over them by employers because of the nature of the industry (NCL 1969). Nearly, 20 years later, the National Commission on Rural Labour (1987-91) too portrayed a similar picture and contributory factors for the unorganised workforce in India (Planning Commission 2006). In the rural areas, the unorganised sector mainly comprises landless agricultural labourers, small and marginal farmers, share croppers, those engaged in animal husbandry, poultry and fishing activities, rural artisans, forest workers, toddy tappers etc. whereas in the urban areas it comprises mainly of manual labourers engaged in construction, carpentry, trade, transport, communication etc. and also includes street vendors, hawkers, head load workers, garment makers etc. In the rural urban migration model; the informal sector was

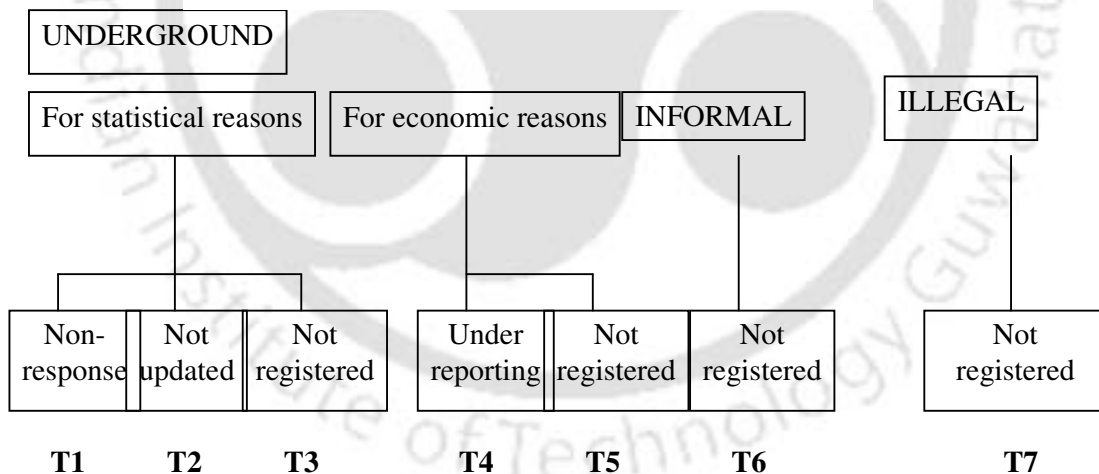
considered as an essentially urban phenomenon which operates at small scale with the help of the non skilled and semi skilled labourers⁹ (Todaro 1969, Hariss & Todaro 1970, Fields 1975). ILO defined the informal sector as the activities of the hard- working poor, who were not recognized, recorded, protected or regulated by the public authorities. These activities possess the characteristics of ease of entry, reliance on indigenous resources, family ownership of enterprises, small scale of operation, labour intensive and adapted technology, skill acquired outside the formal education system and unregulated and competitive markets (ILO 1972). The term 'informal workers' is defined to include persons whose employment relationship is not subject to labour legislation, social protection and certain employment benefits. The term 'informal economy' is comprised of 'informal worker' and 'informal sector' (ILO 2002a). Joshi and Joshi (1976) adopted criteria similar to that of the ILO in defining informal sector but introduces a new concept of non intervention by the state as an explicit feature of informal activities. Similar thoughts are expressed by De soto (1989) in 'the other path', where he finds that state intervention and regulation hinder the development of new enterprises and thus defines an informal sector as 'the refuge of individuals who finds that the costs of abiding by the existing laws in the pursuit of legitimate economic objectives exceed the benefits'. Santos (1979) used the terms 'upper' and 'lower' circuits of an economy to distinguish formal sector from the informal sector. To some the sector is 'unprotected' (Mazumdar 1975) while for others the sector constitutes the residual labour market where the labourers finds a shelter in the absence of any other means of livelihood (Lubell 1973). According to Tokman (1989) informal sector operates at a very small scale, uses low capital and has low productivity and exhibits high degree of

heterogeneity in terms of the activities performed within it. Amin (1987) has rightly pointed that the informal sector is neither a secondary labour market nor a sponge as described by Lubell (1973) to absorb the city's residual labour; rather it offers considerable opportunities for the advancement to people from poor backgrounds and most of such enterprises perform well to generate surplus and play an important role in industrial transition. In fact, employment in some informal activities may be as remunerative as that in the formal sector and thus people in the formal sector may wish to move to the informal sector itself (Swaminathan 1976). Perhaps the most practical definition of the informal sector is given by Schneider (2004), where he describes informal sector as comprising "all market-based legal production of goods and services that are deliberately concealed from public authorities for the purpose of avoidance of payment of income, value added or other taxes, avoidance of payment of social security contribution, avoidance of meeting of certain legal standards, such as labour standards, such as minimum wages, maximum working hours, safety standards etc. and avoidance of compliance with certain administrative procedure." The concept underneath the definition provides a legal status to the activities carried under informal sector and at the same times recognised the absence of some peculiar labour market standards. The registration done by these enterprises are mainly to undertake the business activities i.e. their operation permit, business names and premises registration. Thus, though these enterprises are operating under official regulations that do not compel rendition of official returns on their operations or production process (Folawewo 2006). Informal Economy forms a part of the 'Non Observed Economy' (NOE) (OCED 2002). 1993 SNA classified the NOE into underground, illegal, informal sector, household production for own final

consumption and activities missed by the deficiencies of the basic data collection programme¹⁰.

SNA 1993 defines the underground economy as composed of the “activities of producers engaged in the productive and legal activities, but deliberately concealed to avoid payment of income, value added or other taxes, social security contributions, meeting legal standards (minimum wages, safety, health etc) and complying with administrative procedures (filling statistical questionnaires or administrative forms)”. Illegal production are classified in two categories i) production of goods and services, whose sale, distribution or possession is forbidden, and ii) productive activities which are usually legal but which become illegal when carried out by unauthorized producers e.g., unlicensed medical practitioner.

Figure 2.1: Istat *(Analytical Framework)



Source: OECD, 2002, pp. 43.

Note: *Italian National Statistical Institute

Though the NOE problem areas are not mutually exclusive, the informal sector is considered as the most important component in many countries, especially in

developing countries. Besides obtaining exhaustive estimate of GDP, measuring contribution of informal sector serves important purposes relating to economic policies (UN-ESCWA 2008). SNA however does not contain any methodological recommendation. It merely reproduced the extracts from the resolution of 15th ICLS concerning statistics of employment in the informal sector (UN-ESCWA 2006).

ICLS 1993 defined the concept of informal sector in terms of the enterprise characteristics, rather than in terms of the characteristics of the persons involved in these enterprises (ILO 2002b, Husmannas and Mehran 1999). It describes the underlying concept as “...the sector may be broadly characterized as consisting of units engaged in the production of goods and services with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organization, with little or no division between labour and capital as factors of production and on a small scale. Labour relations, where they exist, are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees” (OECD 2002). In the resolution concerning statistics of employment in the informal sector, the sector is regarded as a group of household enterprises or unincorporated enterprises owned by households that includes informal own account enterprises, which may employ contributing family workers and employees on an occasional basis and enterprises of informal employers which employ one or more employees on a continuous basis. The aim of the conference was to bring homogeneity regarding the activities to be included in the informal sector, their economic behaviour and the data required to analyse them. For this purpose further criteria were introduced; such

as i) an enterprise must have at least some market output; thus excluding those informal units which are exclusively engaged in the production of goods and services for their own final consumption and also the unpaid domestic work and care activities belonging to the reproductive and care economy (ILO 2002b), ii) an enterprise must satisfy one or more of the criteria; the enterprise is less than a specified size in terms of persons engaged or employees employed on a continuous basis, non registration of the enterprise under specific forms of national legislation, such as factories' or commercial acts, tax or social security laws, professional groups' regulatory acts, or similar acts, laws or regulations established by national legislative bodies and iii) non registration of the employees of the enterprise in terms of the absence of employment or apprenticeship contracts which commit the employer to pay relevant taxes and social security contributions on behalf of the employees or which make the employment relationships subject to standard labour legislations.

Production units in the informal sector have the characteristic features of household enterprises with the absence of complete sets of accounts (Husmannas and Mehran1999). The fixed and other assets do not belong to the production units but to their owners. The units thus cannot engaged in transactions or enter into contracts with other units, nor incur liabilities, on their own behalf. The owner has to raise necessary finance at their own risk and is personally liable for any debts or obligations incurred in the production process. Expenditure for production is often indistinguishable from household expenditure. Similarly, capital goods such as building or vehicles may be used indistinguishably for business and household

purposes. Some agricultural activities are carried out solely for subsistence, while others for selling the produce in the market. ICLS, thus recommended the exclusion of agriculture from scope of informal sector measurement, though it may be quite significant in most of the countries with large informal sector (UN-ESCWA 2008). These criteria provide the framework within which the actual definition of the informal sector should be constructed in any given country. Evidently they may not necessarily result in exactly the same definition of the informal sector across countries. The criteria can be applied in different combinations, the national legislations may differ, the employment size limits and how they are measured may vary, etc.

Table 2.2: 15th ICLS Framework for Informal Sector Definition

Informal own account enterprises	Other own account enterprise	Own account enterprises
Enterprises of informal employers	Other enterprises of employers	Enterprises of employers
Informal sector enterprises	Other household unincorporated enterprises	

Source: OCED, 2002; pp164.

While all informal sector enterprises can be regarded as household unincorporated enterprises, not all household unincorporated enterprises belong to the informal sector. The 15th ICLS has adopted the above modular approach to distinguish informal sector enterprises from other household unincorporated enterprises. Within household unincorporated enterprises a distinction was made between enterprises of employers and own account enterprises. In accordance with the definitions of employers and own account workers of the 1993 International classification of status

in employment (ICSE-1993), the distinction was based on whether or not an enterprise employs at least one employee on a continuous basis (in contrast to employment on an occasional basis or employment of contributing family workers).

The resolution of the fifteenth labour conference provided considerable flexibility to countries in defining and measuring informal sector (OECD 2002). However, flexibility reduces international comparability. For international comparability a narrower definition based on the largest common denominator of currently used national definitions was required (UNESCAP 2007). To address this problem, an international expert group on informal sector statistics, commonly known as Delhi group, chaired by the Ministry of Statistics and Programme Implementation on India (MOSPI), was constituted in 1997 as one of the “city groups”¹¹ reporting to the United Nations Statistical Division (UNSD). Since then the group has arranged for periodic meetings to exchange experience in the measurement of the informal sector, document the data-collection practices, including definitions and survey methodologies followed by member countries, and recommend measures for improving the quality and comparability of informal sector statistics. The Delhi Group has tried to harmonize national definitions of the informal sector on the basis of the framework set by the international definition. The issue was discussed in detail in the third meeting of the group and the following recommendation was adopted:

“Since the informal sector manifests itself in different ways in different countries, national definitions of the informal economy cannot be fully harmonized at present. International agencies should disseminate informal economy data according to the national definitions used. In order to enhance the international comparability of

informal economy statistics, they should also disseminate data for the subset of the informal economy, which can be defined uniformly (CSO 1999). However the recommendations as adopted by the group to arrive at this subset presently cover only a relatively small part of the informal sector, the group recognized that further efforts were needed to enlarge it in future” (OECD 2002). The group suggested that 3 essential criteria along with additional criteria to be applied simultaneously: Productive units with less than five paid employees, and Productive units not registered, and exclusion of households employing paid domestic employees to arrive at a comprehensive definition of the informal sector.

Delhi group have also been a pioneering agency in preparing a technical manual to guide the countries in the development of statistics on informal sector. Earlier little attention was given on collection of statistics on informal sector. But with the growing importance, considerable amount of research and data collection has been made over the last four decades on informal sector, along with the improvement in its concept. In 2005 the Delhi group and the ILO agreed to cooperate in the preparation of a manual on informal sector statistics where the informal employment outside the informal sector is also included. The funds for the preparation of the manual are provided by the government of India and the ILO on a 50:50 percent cost sharing basis. However, there is still insufficiency of data on informal sector. This is partly due to lack of a universal definition on informal sector and partly due to inherent heterogeneity of its content. The manifestation of informal sector varies among countries, among regions of the same country and even among different parts of the same city (Hussmanns 1997). It encompasses different types of activities, different

types of enterprises and different motives for the participation in it, which makes data collection even more difficult. Development of informal sector statistics is particularly important for the developing countries, where it is considered as an important source of income and employment generation. The Indian National Statistical Commission (NSC) has constituted the Committee on Unorganised sector Statistics in 2010 to identify major data gaps relating to unorganised enterprises and unorganised workers and to suggest ways and means for developing statistical data base on unorganised sector with standardised concepts, definitions, coverage and comparability over time and space (NSC 2012). The committee noted that there are a number of gaps in the statistics on enterprises and employment in informal sector in India, which emanate mainly due to divergence of the existing data collection mechanism relating to concepts, definitions and coverage required for an effective data system conforming to the ILO frame work.

2.5 Informal Sector as an Urban Phenomenon

It is found that though significantly present in rural areas as well, usually the share of informal sector is found to be higher in urban areas (Gennari 2004). For some countries especially in Latin American and African regions, data on informal sector is available for urban areas only, whereas in some other countries the informal sector surveys are limited to the major metropolitan areas of the capital cities (Husmannas & Mehran 1999). Heinonen (2008) highlighted the importance of the informal sector for the urban areas and more particularly for the country's capital city where informal sector is found as the largest employer. In countries like Cambodia the informal sector provides more than 80 percent to the GDP of the country of

which the urban informal sector contributes the highest share (Monyrath 2005) .This is mainly because of the speeding up of the process of urbanisation in recent times. As observed by Chen (2006), 30 years ago less than 40 percent of the total global population was in the urban area, whereas more than 60 percent are estimated to be in urban areas 30 years hence. In countries with high growth of population and consequent urbanisation process, the informal sector tends to absorb most of the growing labour force in the urban areas (Becker 2004). Moreover structural change in modern development includes a relocation of workforce from agriculture towards non agricultural production and the sectoral shift is often reflected in migration from rural to urban areas since most of the industries are often geographically connected in and around urban centers (Roy 2008). In view of the expanding informal sector in urban areas, promotion of the urban informal sector has become the new strategy of development in the developing economies (Todaro 1997, Panda 2000). That is why the informal sector is considered as an urban phenomenon and most of the studies centers round the urban informal economies. Urbanisation, which is a natural consequence of the development process of the third world countries, creates the problem of urban explosion, where along with the natural population growth there has been an exodus of population from rural to the urban areas; as urban centers are being seen by the potential emigrants as the centers of hope for survival and prosperity- because that is where much of the non-agricultural investments are taking place (Sethuraman 1992). India is at the acceleration stage of the process of urbanisation (Datta 2006). Changing economic policies and the near stagnant agriculture have led to increased pace of urbanisation and consequent migration of people from rural and semi urban areas to urban areas (Deshpande 1999). During the

decade 2001 to 2011 the population of urban India grew by 2.76 percent per annum and its share of total population increased by 31.1 percent in 2010 from 27.8 percent in 2001 (Ramaswamy and Agarwal 2012). It shows the gradual increasing trend of urbanisation in the country. This pattern of urbanisation in India is characterized by continuous migration of population to the urban centers. The continuing process of urbanisation and the resulting migration along with the prevailing jobless growth syndrome in the formal sector; due to the structural adjustment programme, have resulted in the growth and expansion of the urban informal sector in India (Modwell 2009). Studies show, over the years proportion of rural informal workers decreased and that of the urban informal workers increased (Naik 2009). In urban areas of India the unorganised sector workers constituted 65 percent to 70 percent of the total urban workforce (GOI 2010).

2.6 Various Dimensions of Informal Sector Study

Informal sector has been studied in its various perspectives during the last few decades. A number of studies have tried to understand informal sector by exploring its nature and characteristics (Swaminathan 1991, Bangasser 2000, Trager 1987, Barwa 1995, Bhattacharya 2007, Samal 1997). Scholarly interest then boils down to study specific issues of the informal sector such as; estimation of the informal sectors' contribution towards GDP (Charmes 2000, Raveendran 2006, Sharma and Chitkara 2006, Lal and Raj 2006, Kumar et.al 2006, Kamaruddin and Ali 2006), Pattern of linkage between informal sector and employment (Ntlhola 2010, Basu 2000, Bromley 1979), informal sector and poverty (UNESCAP 2006, Heintz and Vanek 2007, Kar and Marjit 2009) and informal sector and gender (Chakrabarti 2009, Jennings 1994, Tansel 2000, Sastry 2006). The continuously changing nature

of informal sector has aroused an interest among the researchers to study the growth dynamics of this segment of the economy (Leveson and Maloney 1998, Chi et.al 2010, Lalitha 2000, Kundu et.al 2001, Mukherjee 2004b, Samal 2008, Jain 2008). Productivity is another issue which draws attention of the researchers as a large majority of the workforce in a developing country depends on the informal sector and thus it can be said that productivity of a country depends on the productivity of this sector. Studies by Amin (2010), Mukherjee (2004b), Taymaz (2009), Marjit(2007), Majumder (2004), Kalthuria et.al (2010a, 2010b) etc. are some of the important studies in this direction. Another important is the issue of social security for the workers in the informal sector. Ginneken (1999), Sarkar (2004), Thornton et.al (2009), ISSA (2011), Verick (2006), Baruti (2008), Arunatilake (2004), Shrestha (2004) etc made good efforts to explore the social security provisions for the informal sector workers in different parts of the world.

2.7 Chapter Summary

The chapter discusses the existence of the concept of informal sector in the dualism theories of the past. It was expected that the process of development would result in the transformation of the traditional rural agricultural sector in to the modern urban industrial sector. However the benefits of development failed to trickle down to solve the problem of persistent unemployment of the developing countries and a modern sector job gap is observed where the dualism theory got its specific application. Hart and International Labour Organisation have given an expanded platform to study the concept of urban informal sector. Starting from its birth during early 1970s, the concept is getting more and more attention from the international communities because of the major role played by it in employment and income

generation. However, due to the inherent heterogeneity of the concept, informal sector has got different interpretations and definitions in different countries. ICLS 1993 has discussed the concept and components of informal sector in detail and have come up with a set of common characteristics applicable in all situations irrespective of place and purpose of study. However the ICLS have given considerable flexibility in defining informal sector which reduced international comparability. The Delhi Group has tried to harmonise national definitions of the informal sector on the basis of the framework set by the international definition. There is also evidence of faster growth of informal sector in urban areas. Scholars all over the world have studied informal sector in its various flavours; such as its contribution to the GDP, its relation to poverty, employment and gender, productivity of the informal sector, the social security of the informal sector workers etc. Keeping in mind the objectives selected for the study, the following chapter presents a detailed review of the literature discussing specifically the issues of growth dynamics of the informal sector and its productivity, linkage of the informal sector to the formal sector and the issue of social security of the informal sector workers.

NOTES:

1. ...that the level of industrial growth and urbanisation is more than that of the population; ... that the rate of migration from the rural to the urban area will equal that of the number of jobs generated by the formal sector; ... that the level of technology will increase over the period concerned; ... that there would be capital for investments into the formal sector.
2. WEP (World Employment programme) was launched by ILO in its 1969 session. Since then the ILO has conducted a large number of country and city studies in 1970s, 1980s and early 1990s.
3. Keith Hart, a social anthropologist, was the first person to bring the term informal sector (in a third world context) into the academic literature (Gexhani 2004). Even though the Hart's original notion of the informal sector is limited to the self- employed, the introduction of the concept made it possible to incorporate activities that were previously

ignored in the theoretical models on development and in economic accounts (Swaminathan 1991). Hart in his report on urban employment in Ghana renewed the theory on the economy of developing countries which was characterized by the distinction between the modern sector, often a consequence of foreign investment and western technologies, and a traditional sector, considered as the part of the economy which could withstand penetration of western capitalism. Hart suggested changing the names of both the sector. He divided the economy between the formal and the informal sectors. He underlined the so far neglected size of self employment and small scale industries and also stressed the statistical under- estimation of the informal sector (Romatet 1983).

4. Held in 1976, world employment conference was organised by the ILO with the assistance of other UN organisations and the World Bank, where the idea of a basic needs development strategy was born, which is defined in terms of food, clothing, housing, education and public transportation (Emmerij 2010).
5. PIACT *French acronym of (Programme International pour l'Amélioration des Conditions et du milieu de Travail)* was launched by ILO in 1976 with the aim of making work more human i.e. to improve the quality of work in its broader interpretation (Clerc 1985)
6. International Conference of Labour Statisticians (ICLS) meets roughly every five years. Participants include experts from governments, mostly appointed from ministries responsible for labour and national statistical offices, as well as from regional and international organizations and other interest groups. So far 18th ICLS have taken place. The 1st conference was carried out in 1923 with 52 participants and observers from 85 countries and the League of Nations. The latest held in Nov. 2007.
7. The *System of National Accounts 1993* is a conceptual framework that sets the international statistical standard for the measurement of the market economy. It is published jointly by the United Nations, the Commission of the European Communities, the International Monetary Fund, the Organization for Economic Co-operation and Development and the World Bank.
8. Set up as an international forum in 1997 to exchange experience in the measurement of the informal sector, document the data-collection practices, including definitions and survey methodologies followed by member countries, and recommend measures for improving the quality and comparability of informal sector statistics.
9. In the rural urban migration models of Toaro (1969), Harris & Tordaro (1970), Fields (1976) etc. the urban sector is defined with these characteristics. In these literature the traditional urban sector is defined as one where the newcomers to the cities, usually the rural non skilled labourers find a job until they find a permanent job in the urban modern sector.
10. These segments are considered as the 'problem areas'. Activities unrecorded in the official statistics because they are in one or more of these problem areas. These are collectively said to comprise the non observed economy (OECD 2002).
11. In recent years, representatives from national statistical agencies have started to meet informally to address selected problems in statistical methods. Some of these groups have become formally known as "city groups".
(<http://unstats.un.org/unsd/methods/citygroup/>)



Chapter 3: Literature Review

3.1 Introduction

This chapter reviews the related literature on informal sector which will open the floor for a broader discussion of the topic. The literature presented here are organised keeping in mind the objective chosen for the study. The chapter is divided into five sections; including the introductory section, which discuss various macro¹ and micro² level studies conducted in India and elsewhere. The next section describes the available literature on the growth dynamics of the informal sector, third one discusses the issues related to the productivity of the informal sector, the fourth section highlights the pattern of linkages between the informal and the formal sector, section five reviews the social security arrangement in India with special reference to the workers of informal sector and the final section summarises the literature presented in the previous sections.

3.2 Growth Dynamics of the Informal Sector

The rapid growth of the informal economy all over the world is being discussed extensively in the literature. It is found that recent rapid growth of the informal sector has made it the largest sector in many countries (ILO 2002b). Schneider (2004) in his estimation of the size of the informal economy in 145 countries during 1999-2003; found that the sizes of the informal economy in these countries are increasing. Schneider have shown that the size of the shadow economy as a percentage of the GDP is increasing for all the countries under study; which are categorized as developing, transitional and developed countries. The average size of the informal economy in developing countries is found to be 39.1 percent, in transitional

economies it is 40.1 percent and in highly developed countries it is 16.3 percent. It is thus found that lower the level of a country's development, the larger and the more important is its informal sector. The sector employs one half to three fourth of the non agricultural employment and proved to be a dynamic sector for potential growth for these countries (Saini 2007, Gerxhani 2004). The estimated share of non agricultural informal employment in sub-Saharan Africa was 72 percent, in Asia it ranges from 45 percent to 85 percent, in Latin America 57 percent and in North Africa it was around 48 percent (ILO 2002b, Becker 2004). Informal workforce as a share of total urban employment is also significantly high. In Asian countries it ranges from 40-60 percent, in Africa it is 61 percent and in Latin American countries it is around 40 percent (Becker 2004). In view of the growing urbanisation process in the third world countries the recent estimates are sure to be much higher. Case studies on informal sector carried out by researchers and other organizations such as ILO, on various parts of the world; revealed the fact that a large number of men, women and children in the third world countries are actively engaged in informal sector as a prime source of income generation (Bremen 2003). According to the survey of Thailand undertaken in 1994 by NSO (National Statistical Office), over 75 percent of the employment was in informal sector. Study carried out by the same office in 1997 on industrial and business establishment showed that employment generated by the informal sector in the manufacturing, services and the trade sector was almost 3.5 times more as compared to the formal sector (Sarkar and Kumar 2002). The same is true for the economy of Indonesia where informal sector accounts for a large share of the total workforce. According to a World Bank report, in 1993 the formal sector accounted for less than 32 per cent of the working population. The

remaining 68 per cent were working in the informal sector (Sarkar and Kumar 2002). Many African countries are characterised by the prevalence of a large number of informal micro enterprises which utilize lower levels of investments and skill and handle relatively simple products (Hussain 2000). In countries such as Colombia, Ghana and Malaysia the small firms have significantly higher value added to fixed asset ratios. Informal sector has been growing in countries like Pakistan and Sri Lanka where it contributes significantly in terms of employment, export, innovation, equitable income distribution, domestic resource usage and regional development (Dasanayaka 2009). The informal manufacturing sector in Pakistan contributes around 30 percent of GDP, 80 percent of employment and 25 percent of export (Federal Bureau of Statistics in Pakistan 2000). The economy of Bangladesh too has a significantly higher informal sector employment (nearly 80 %) (BILS 2005).

In Schneiders' estimation the size of the informal economy in India was found to have grown from 23.1 percent of the official GDP to 25.6 percent during the period 1999 to 2003. The importance of studying informal sector in Indian context can easily be understood from the fact that India is perhaps the first country to set up, at the national level, a commission to study the problems and challenges being faced by informal economy and recommend measures to the government to address them (NCEUS 2009). Various studies have attempted to measure the size of the Informal sector in India which highlighted the significant role that it has been playing in absorbing labour and generating income for the urban poor. Study carried out by Romatet during 1980s showed that the informal sector of Calcutta has the high employment potentiality (53 units surveyed provides employment to 329 persons) as well as it helped about two third of the owners to earn a decent income inclusive of

the remuneration to the workers and capital (Romatet 1983). During 90s also the capital of West Bengal proved to be a significant site for informalisation in terms of size, employment and variability of occupation (Mukhopadhyay 1998) The study on growth dynamics of the informal sector for the period 1978-94, showed that during the period 1978-84, all the three categories of IMS enterprises v.i.z., OAMES, NDMEs and DMEs experienced positive growth in number of units, employment and value added. However, for the subsequent five years there has been a reversal of this trend, particularly for the OAMES and NDMEs (Kundu et.al. 2001). In other parts of the country also the dominance of the informal sector enterprises could be seen. Such as the study carried out by Singh and Jain (2000) clearly brought out the role of unorganised manufacturing sector over organised manufacturing sector in generating employment opportunities in Punjab. The urban unorganised sector of Gujarat is making its contribution not only in terms of employment generation but also in terms of value addition (Lalitha 2002). It is estimated that IMS of the state contribute 34 percent of the total manufacturing sector's value addition. In Kerala's economy the contribution of the small enterprises was found to be as high as 80 percent, while its contribution in output is relatively higher than that of the all India level (Natarajan 2007). Noting the limited employment absorption capacity of the organised sector, in the period of liberalisation Mitra (2007) is optimistic about the employment generation in the informal sector through reinvestment of the surpluses and creating avenues for ancillarisation. Except Gujarat, where the share of the informal sector workers declined, in other developed states i.e. Haryana, Maharashtra and Punjab the share of informal sector workers to total workers found to have increased between 1999-00 and 2004-05. The same is found to be the lowest in Kerala among all the

states during the same time period. Highest growth in informal sector workers in recorded in Assam and other north eastern states, Haryana and Rajasthan (Naik 2009).

Thus the informal sector is making its presence and importance felt around the world in the last three to four decades; more especially for the developing countries. The sector has become an important source of employment and income generation for the poor of these countries. In Indian economy also the sector is found to be growing rapidly with the share of informal workers to the total workers rising in all the states.

3.3 Productivity of the Informal Sector

Productivity is defined as the ratio of the output of a commodity measured in real terms to the one or more of the inputs used, also measured in real terms³. Two most frequently used measures of productivity are single factor productivity (SFP) and multifactor or total factor productivity (TFP). SFP or partial productivity is defined as the ratio of the volume of output (or value added) to the quantity of the factor of production for which the productivity is to be measured e.g. labour productivity or capital productivity. In some situations, however, the partial productivity measures provide distorted picture, such as in case of the increasing capital intensity or improvement in the economies of scale, the labour productivity is over estimated or the capital productivity is under estimated (Majumdar 2004, Mahadevan 2004). TFP⁴ is used widely to solve the problem associated with the SFP measure and is defined as the ratio of Output (or value added) to a weighted sum of the inputs used in the production process. That is why the TFP is used as a preferred productivity measure over partial productivity measure such as labour productivity.

However, measurement of labour productivity is important, as it is a measure of potential consumption and the standard of living of the working class (Balakrishnan 2004). Compared to large firms these smaller firms in the informal sector use less capital per worker and have the capacity to use capital more productively resulting in significantly higher value added to fixed assets ratio (Hussain 2000).It is also claimed that the smaller units are less capital intensive and uses capital more efficiently. This makes a ground to verify this claim by examining the capital intensity and the capital productivity.

Though the informal sector is making huge contribution to the economy in terms of absorption of the growing labour force, there is dearth of studies focusing on the productivity issue of this sector. The informal sector is often being claimed to be less productive (Mukherjee 2002, Upadhyay 2007). Even though the informal sector has more contribution to employment generation, their labour intensive nature and low productivity bring low value addition to the economy. The small manufacturing units in countries like Pakistan and Sri Lanka are reported to have low productivity and low income and thus the owners and the workers are termed as working poor (Rana 1999, Dasanayaka 2009). Because of the low productivity, the informal sector was considered as the prime cause for low growth of the countries (Levy 2007). The IMS is considered as a sink where people having no alternative opportunities are deposited and hence results in low productivity (Unni et al 2001, Mukherjee 2009). As observed by Majumdar (2004) much of the recent increase in the nonfarm employment in the informal sector is distress driven and thus had led to the overcrowding of labour and low productivity. It is found that almost 25 percent of the workers engaged in the informal sector are seriously underemployed (Oberai and

Chadha 2001). This really put a question mark on the productivity of the entire Indian economy as the majority of the workers in India are engaged directly or indirectly to the sector. However the claim needs to be verified as there are certain segments within the informal sector where there is scope for up scaling the technology as well as productivity by adopting multiple strategies for creating demand and at the same time developing a support mechanism to work on the supply side (Oberoi and Chadha 2001). Mukherjee (2004) studied labour productivity of the IMS of India during 80s and 90s, with particular focus in the trends of productivity level, regional disparity and factors affecting the levels of productivity. Value added per labour is used as a measure of labour productivity. The analysis is disaggregated at the levels of state, activity groups (2 digit NIC), types of enterprises and location. The study found that the productivity is increasing for all the enterprise types except for the urban DMEs and urban NDMEs, which shows declining labour productivity during 1984-89, but continues to increase thereafter from 1994. Kathuria et al (2010b) studied productivity performances of the unorganised manufacturing sector in India for the period 1994-95 to 2004-05 and compare that with the organised manufacturing sector. Both partial and total factor productivity measures are used to meet the objective. Labour productivity is found to have increased for the organised sector, whereas the same is found to have fallen for the unorganised segment. Total Factor Productivity Growth (TFPG) which is estimated by using cobb-douglas production function, showed accelerated growth for the organised sector for the period 2001-05 over the previous period 1995- 2001. But in the unorganised sector the decline in the TFPG that started during 1995-2001 continued for the later period (2001-05) also. These finding are similar to the findings of the studies by Mohanty

(1992) and Unni et. al (2001) which confirms that the liberalisation do not have any positive impact on accelerating the TFPG of the unorganised manufacturing sector. As against this Natarajan and Duraiswamy (2008) and Natarajan and Mahapatra (2009) indicate increase in the TFPG and efficiency of the unorganised sector during the reform period. Lalitha (2002) while studying the employment and labour productivity in the unorganised sector of Gujarat found that though the sector has witnessed an upsurge in the level of employment and units, the corresponding increment in the level of productivity and value added has been limited to a few sectors. It is also concluded that the unorganised sector of the state experienced a declining labour productivity during the period 1978 to 1995. While comparing the productivity of the UMS of Gujarat with that of the national level Unni et. al (2001) found that the UMS as a whole (comprising both the organised and unorganised segments) are growing efficiently in the state as compared to the national level. Partial productivities and the capital intensities are calculated for a group of industries including basic goods, intermediate goods, capital goods, consumer durables, consumer non durables. Total factor productivity growth is calculated by using growth accounting method. Kathuria et.al (2010) found labour productivity to show a fluctuating trend in the IMS during 1995-2001 and then fell considerably during 2001-2006. The capital intensity is found to have increased during the study period but a slowdown is observed in the second period. Capital intensity is found to be the major contributor of labour productivity in the IMS. The study found capital to play a major role in the production process rather than labour. In RBIs' (2011) analysis on Productivity, Efficiency and Competitiveness of the Indian Manufacturing Sector for the period 1980-81 to 2003-04, it was found that growth of

labour productivity in unorganised sector has increased more or less in tandem with that in the organised sector during the period under study. However, the disparity in the levels of labour productivities between organised and unorganised sectors is rather sharp and have perpetuated. Organised manufacturing sector had labour productivity which was 13, 14 and 15 times of that observed in its unorganised counterpart in years 1989-90, 1994-95 and 2000-01, respectively.

Various researchers (Mukherjee and Mathur , 2002 , Mamgain et al 2002, Ghate and Das-Gupta 1992) have suggested that to improve labour productivity it is essential to have technological improvement, technological adaptation, improving links between the organised segment and the unorganised segment of the economy etc. However these measures sounds infeasible for a capital scarce country like India. Majumdar (2004) thus suggests technological diffusion or better mastering of the existing technology to improve the productivity of the informal sector enterprises. Natarajan and Duraisamy (2008) analysed total factor productivity growth of the unorganised manufacturing sector in India by using 'Malmquist' productivity index, which is calculated by using the non parametric DEA (Data Envelopment Analysis) approach. It is found that technical efficiency rather than technical progress has contributed to the accelerated growth in the TFP growth of the IMS in India during 1978-79 to 2000-01. Ownership, literacy, farm growth and infrastructure availability are found to be important determinants influencing TFPG in the IMS. The same DEA approach is used by Bairagya (2009) to compute efficiency scores of the IMS of India for the period 1999-2000. It was found that Arunachal Pradesh, Delhi, Maharashtra, Mizoram, West Bengal, Chandigarh and Lakshdeep are the best performing states with efficiency score 1. Efficiency score of Assam was 0.439.

Natarajan and Mahaparta (2009) attempted to measure the productivity in the organised as well as unorganised segments of the manufacturing sector of India, by considering three different states from three different levels of development; they are Karnataka, Maharashtra and Orissa. Partial productivities are calculated along with the total factor productivity growth. Growth accounting method is used to measure TFPG in the organised sector, whereas DEA approach is used to measure the same in the unorganised sector. It is found that the organised sector has experienced decline in the productivity growth in India and also in the three states considered during the study period 1978-2001. In contrast to this the unorganised sector is found to have witness improvement in the TFPG in the reform period as compared to the pre reform period. The study recommends strongly the incorporation of the unorganised sector in the industrial policy of the economy and gives necessary weight-age to the problems faced by this sector

The IMS has been the focus of research in four decades, considering the vast employment potentialities of this sector particularly in the labour rich countries like India. However, only a handful of researchers have studied its productivity aspect. Further, studies regarding the productivity performance of the informal sector in Indian economy do not have a definite conclusion. This is mainly because of the differences in the definition and methodologies used in the calculation of productivities. More importantly most of the studies mentioned above have excluded north east India from their productivity analysis mainly due to the absence of comparable data base on this part of the country.

3.4 Linkage between the Formal and Informal Sector

The formal and the informal sector linkage imply the inter-dependencies between the two sectors. The linkage between the two can broadly be classified into direct and indirect linkage. Direct linkage implies transaction of resource inputs between the formal and the informal sector and takes the form of technology linkage, consumption linkage, credit financing linkage and market linkage (Mehta 1985, Milinga and Wells 2002). Technological links involve transfer of technology and skills between the two sectors. Such linkages are more pronounced when the employees of the formal units forms informal units. Consumption links involve direct links between the informal sector with the final consumer, who is a part of the formal sector. Credit financing links refer to the transfer of funds from the formal sector for investment and development in the informal sector (Samal 2008). Market linkages are established when a formal **sector** firm purchases some goods from the informal sector to sell by itself (Samal 2008). The indirect linkage refers to the demand for goods and services generated in the informal sector by the clients whose income is dependent in the formal sector (Mehta 1989). These indirect linkages take place through the income and multiplier effects (Sethuraman 1992). Milinga and Wells (2002) considers these indirect linkages to have social/ political significance as they largely depend upon how the two parties accept each other and to what extent they exert their influences to pressurize the government to take legal action against one another. Another broad classification of the linkage between the formal and the informal sector is backward and forward production linkages. Backward linkages pertain to the provision of raw materials; equipment/machinery, finance and consumer goods from the formal sector to the informal sectors whereas the reverse

flows of the same from the informal to the formal sector can be considered as forward linkage (Sethuraman 1992, Arimah 2001). Besides these input and the output linkage, subcontracting is another way of linking the formal and the informal economy (Hemmer and Mannel 1989). Subcontracting encompasses transactions where the principal firms places an order with an another firm either for the whole product or parts of the product, which is either sold directly to the consumers or are incorporated into the product that the principal firm manufactures (Ramasawmy 1999). Formal firms involve in subcontracting practice with the informal firms when formal production becomes unprofitable. By transferring the production to the low cost informal units, the formal enterprises are able to reduce the size of their business to such a degree that they can easily bypass the existing regulations about the workers protection and minimum wages (Hemmer and Mannel 1989). The practice of subcontracting however is considered as a way to stimulate the growth of the informal units and also a way of generating employment in developing countries, as such practices are mainly prevalent in labour intensive industries (Heemst 1984, Ramasawmy 1999).

Different views can be found in the literature regarding the nature of the relationship between the formal and the informal sector. Early researchers (approximately during 1960-70) considered independent existence of the informal sector which produces for the consumption within itself. These scholars (Oshima 1971, Hart 1973, Sethuraman 1975, 1976 and Tokman 1978), belonging to the 'dualist school' believed that the informal sector was marginal or peripheral and not linked to the formal sector or modern capitalist development. They provide income to the poor and only a safety net in times of crisis. ILO (1972) also found independent

existence of a huge informal sector in their employment mission to Kenya. The autonomous existence of the informal sector was later criticized by the petty commodity production theorists who are of opinion that the informal sector has a dependent relationship with the formal sector and is often subjected to exploitation by the later (Sethuraman 1992, Samal 2008). 'The structuralist school' sees informal sector as a subordinate to the large, formal capitalist firms, which help them to reduce cost and hereby increase competitiveness (Moser 1978, Castelles and Portes 1989). In contrast to the Dualist school, the structuralist school believes in the co existence and interdependencies between the formal and informal sectors. The capitalist development accounts for the persistence and growth of formal informal production relationship. Looking at the structure of economic activities performed under informal sector Papola (1977) concluded that though the informal sector provided "a significant part of the goods and services in the urban economy and provided employment to practically the entire residual labour force", its growth depends on the fortunes of the formal sector. However he did not investigated whether the relationship is benign or competitive. Legalist school popularized by De Soto in 80s and 90s subscribes to the notion that entrepreneurs choose to operate informally in order to avoid costs, time and effort of formal registration. (De Soto 1989). According to him, informal sector will continue to grow so long as government procedures are cumbersome and costly. In this view government rules and regulations are stifling private enterprises. The voluntarist school popularised by Maloney (2004) sees informal sector as comprises of micro- entrepreneurs who choose to operate informally in order to avoid taxation, commercial regulation, electricity fees and other costs of operating formally.

Subsequent researches show the importance of the informal sector in the national economies and also see that considerable linkage (both complementary as well as competitive) do exist between the formal and the informal segment of the national economy and any attempt to demarcate the informal sector will give rise to various difficulties and inconsistencies (Santos 1979, Breman 1976, Hammer and Mannel 1989, Castells and Portes 1991). This view supports parallel realignment of the formal- informal relationship due to any change in the institutional arrangement of the economy. Interestingly it is found that informal sector continues to grow in highly institutionalized economies (Tanzi 1982, Koob 1991). The existence of an informal sector is considered as a novel social trend instead of being a lag from traditional relationship of production (Castells and Portes 1991). The very existence of the informal sector in developing countries is beneficial to the formal sector in maintaining low wages and at the same time enjoys the benefits of the casual labourers- a product of the highly competitive informal sector. The informal firms in turn benefited in the form of reliable market, supply of raw materials and other input such as; financial support, technology transfer and training and supervision because of its complementary linkages with the formal firms (Samal 2008, Ishengoma and Kappel 2006). The pattern of linkages between the two sectors however depends much on the nature of the production system through which they are linked. As for example in case of individual transaction, the chances of linkages is very small, whereas production carried under the system of sub sector or value chain is most likely to have high linkage between the formal and the informal segments. This dynamic and continuum interlinking between the formal and the informal sector is more pronounced in manufacturing sector, whereas in the provision of services such

as transport, catering and construction there are greater possibility of de-linking of the informal sector from the formal sector (Chen 2007). As Mukherjee (2003) has clearly pointed "... there are segments of IMS having linkages with the organised sector, especially the factory sector, living and dying with it." Gupta (1993) too considered the urban informal sector to grow or shrink directly with the urban formal sector. The urban informal sector is considered as a supplier of the intermediate products to the formal manufacturing units, i.e. there is forward linkage between the two sectors. Recent evidences show that the linkage between the formal and the informal sector can often be more dense and extensive in urban areas (Blunch et.al 2001). In the urban informal sector of West Africa formal backward linkage are much more prevalent than the formal forward linkages (Böhme and Thiele 2012). Natarajan et. al (2008) see the spurt in the growth of the IMS in the era of liberalisation, mainly because of the direct or indirect linkages of this sector with the formal sector. Bhinde and Kalirajan (2004) claimed that this growth mainly arises from the practice of outsourcing by the organised sector. The linkage of the two is vital for the sustainability of the informal sector. As for example Mukherjee (2003) concludes optimistically about the future prospects of those IMS in the city of Durgapur, which have linkages with the formal/ organised sector. These includes chemical products (e.g. soaps, detergents, incense sticks etc.), paper products (e.g. office stationeries, teaching aids, offset printing etc.), electrical and electronic equipment (computer consumables and peripherals) and food products (e.g. light snacks, bakery products etc). However Panda (2000) found to have weak forward as well as backward linkages of the informal units of the Cuttack city in Orissa. Among a group of industries including paper based, cloth based, cement base, leather based,

garages, stone based, Iron and steel, Wood and cement based industries, informal units in four group v.i.z., iron and steel, wood. Leather and cement units are found to have small backward linkages with the formal units. This backward linkage is found to be strong with other informal units. The forward linkage in the form of subcontracting is also very weak. The forward as well as the backward linkage of the informal sector with the formal sector is also found to be weak for the four Indian provincial cities of Wardha, Ghaziabad, Allahabad and Jaipur (Lubell 1991). However, forward linkage with the final consumers is reported to be high. A similar study in the capital region of India shows that the informal sector had negligible forward linkage with the formal sector whereas the backward linkages were found to be a little stronger. Strong linkages were found among the informal sector unit enterprises, mostly with in the 5 km s of each other (Lubell 1991). Mukhopadyay (1998) felt that the trend of ancillarisation and sub contracting increased with the globalisation package because the investors found that in certain fields the informal sector had a comparative advantage in terms of low level of labour and establishment costs. She found that in Calcutta the practice of sub contracting is mainly prevalent in the manufacturing sector. In Punjab, sub contracting is mainly practiced in textile industries, which dominate the informal sector of the state in terms of largest share of employment generated by the informal sector (Singh and Jain 2006). Kundu also considered inter linkages between the two sectors in Indian manufacturing sector as he feared that the sluggish growth in the organised manufacturing sector may cause sluggishness in the unorganised sector too (Kundu 1999). However while considering the inter linkages between the formal and the informal manufacturing sector it is very important to note for the heterogeneity within the informal sector. Ranis and Stewart

(1999) have considered this heterogeneity by subdividing the informal sector into traditional informal sector producing consumer goods only; catering to the demand of the low income consumers, and the modern informal sector; producing both capital goods and the consumer goods, meeting the needs of both the low income and the middle income consumers. It is found that linkages vary inversely with the degree of informality (Böhme and Thiele 2012).

Thus, it is found that the linkage between the formal and the informal sector is beneficial for the informal sector. In fact the very existence of the informal sector is dependent upon the formal sector. The linkage is more pronounced for the urban informal manufacturing sector. Literature also revealed that it is the formal backward linkage which is much more prominent than the formal forward linkage. If heterogeneity is considered within the informal sector it is found that linkage varies indirectly with the degree of informality.

3.5 The issue of Social Security

The concept of social security is not static and has evolved over a period of time (Garcia and Gruat 2003). In the primitive society the need of protection from earthquakes, famines and other natural disasters was taken care of the society itself. However state intervention was required during the industrial revolution when new and varied needs emerged among the industrial workers (SSA 2005). As a result the concept and definitions of social security has undergone changes. One of the earliest definitions of the term social security is given in the “Beveridge Committee Report”

(1942), where the social security is defined as “Freedom from Want”, where its provision was restricted to children’s allowances, comprehensive health and rehabilitation services and maintenance of employment which implied avoidance of mass unemployment. In 1952, ILO adopted a comprehensive convention no.102 on social security where the term social security is used to refer to measures concerning minimum standards of social security in which provisions of medical care, sickness benefits, unemployment benefit, old-age and invalidity benefits, survivors’ benefit, employment injury benefit, family and maternity benefit were included (SECSOC 2006). Thus the term social security is used to refer to “the result achieved by a comprehensive and successful series of measures for protecting the public (or a large sector of it) from the economic distress that, in the absence of such measures, would be caused by the stoppage of earnings in sickness, unemployment or invalidity or old age and, after death; for making available to that same public, medical care as needed and for subsidizing families bringing young children” (ILO 1958). The concept of social security has been further widened, so as to include provisions for housing, safe drinking water, sanitation, health, educational and cultural facilities as also a minimum wage which can guarantee workers a decent life (Mattoo 2000). International Social Security Association (ISSA) defined social security “as any programme of social protection established by legislation, or any other mandatory arrangement, that provides individuals with a degree of income security when faced with the contingencies of old age, survivorship, incapacity, disability, unemployment or rearing children”. It may also offer access to curative or preventive medical care. Defined in this way social security can include social insurance programmes, social assistance programmes, universal programmes, mutual benefit schemes, national

provident funds and other arrangements including market oriented approaches that in accordance with national law or practice, form part of a country's social security system (ISSA n.d). Thus the institutional definition of social security as given by ILO and ISSA is defined by access to basic needs such as infrastructure pertaining to health, education, dwelling, information and social protection as well as work related security. However the applicability of this institutional definition of social security is found its relevancy for the developed countries where it aims at providing relief to the workers from specific contingencies and thus remained confined to the organised sectors workers alone (Prabhu 2001). Presence of a huge informal sector, incomplete structural transformation and high levels of poverty in the developing countries, demands a wider concept for the social security. Dreze and sen (1989) argued that the provision of social security in developing countries needs to be viewed from a broader perspective and “essentially as an objective to be pursued through public means rather than as a narrowly defined set of particular strategies”. In line with it Ahmad (1991), Burgess and Stren (1991), and Guhan (1992) emphasised persistently low incomes or poverty as an important objective of social security. In India the term social security is used in its broadest sense, which may consist of all types of measures, preventive, promotional⁵ and protective⁶ as the case may be. The term encompasses social insurance, social assistance, social protection, social safety net, micro insurance or insurance for the poor and other steps involved (Sulzer 2004, Das 2012). The working group on social security for twelfth five year plan of India defines social security as “essential for the well being of the people and society. It is basic human right (though not one of the constitutional fundamental rights), and its fulfillment will contribute to achieving various development goals of the nation.

Social security measures will have far reaching benefits in the form of reducing infant and maternity mortality rates, improving productivity and promoting sense of pride and self respect among the citizens. Such measures will also help in eradicating poverty to some extent. Starting from the minimal level of providing protection against health and life hazards in work situations, it can progressively be extended to social security welfare measures involving provision of better care, maternity care, old age provisions etc. such social security can and, perhaps be extended to one and all” (MOLE 2011).

Attention has been drawn in recent years to reform the social security measures of the developing countries, where despite of the considerable efforts on the part of the policy makers and development institutions and donor agencies, well over 50 percent of the population remains uncovered against basic risks such as illness, disability, death, widowhood, riots and natural disasters etc. (Jütting 2002, Ginneken 1999). In a special issue of the international social security review, ISSA has especially focused the self employed and the informal sector workers in the developing as well as developed countries (ISSA 1999). Adequate social security provisioning can be an important stimulus in the process of socio-political development and economic growth of developing economies (Justino 2003). This is more so in view of the growing informal sector in the developing countries and consequent increase in the number of people depending upon where the provisioning of social security is no longer seen as burden on the exchequer but a boost to increase productivity. It is estimated that nearly 2/5th of India’s GDP originates from this sector. The prosperity of these enterprises and the well being of its workers along with production facilities provided to them at the workplace and their right

remuneration significantly affect the productivity of the workers (Planning Commission 2002-2007.).

In India the system of joint family was considered as the best form of social security which makes the family members responsible to each other and is often considered as the best relief for the special needs and care required by children, the aged and those in poor health. However with increasing migration, urbanisation and demographic changes; the system of joint family⁷ gives way to the nuclear families⁸ and the formal system of social security gains importance (GOI n.d). However issues of social security remained a relatively neglected area both in terms of research and policy. The renewed interest came during 1991 when it was felt that providing social security to the Indian workers is a challenging task, particularly in view of the extent of the labour force in the organised and unorganised sector (Refer to table 1.1). The present waves of globalisation demands greater attention and protection to the informal workers as the process of globalisation has eroded the employment relations which have encouraged the organised sector employers to hire workers at low wages with no social security benefits or to sub- contract the production of goods and services, which helped them to maintain cost efficiency (Dhas and Helen 2008, Rodrik 1997). The need is particularly realized as the globalisation influenced policies of the government have led to increased contractualisation, outsourcing, informalisation of industries and thus have led to the increase in the size of the unorganised sector (National convention on Social Security for Unorganised Workers, A Concept Note). The adverse labour market implication of the informal sector is also recognized by the government, and as a response, an unprecedented revival of the social security scenario in India is observed (Ramesh 2007). Until the

9th plan, the five year plan documents of India were also silent on this issue (Sulzer 2004). The subsequent plans (10th 11th and 12th five year plans) gave considerable importance to the social security needs of the informal sector workers in view of its growing size in near future (Rajasekher et.al 2006). However, the implementation of the social security programmes in developing countries is a difficult task given that the capital and insurance markets are usually underdeveloped and the budget restriction are very high (Justino 2003) .

The formal social security system in India has evolved since 1947 (Asher 2003), which primarily aimed to protect the organised sector workers. Various acts are introduced to attend various social security and welfare needs of the organised workers. These are Workman's Compensation Act 1923, the Industrial Dispute Act 1947, the Employee's State Insurance Act 1948, the Minimum Wage Act 1948, the Coal Mine Provident Fund and Miscellaneous Provisions Act 1948, the Employees Provident Fund and Miscellaneous Provision Act 1952, the Assam Tea Plantations Provident Fund act 1955, the Maternity Benefit Act 1961, the Building and Construction Workers Act 1996 etc. (planning commission 2006, MOLE 2003). Though these acts are applicable to the informal workers also, their actual coverage is negligible. The lack of a comprehensive legislation to provide social security to the informal workers is a severe lacuna which is sought to be addressed unsuccessfully over several decades. The first national commission on labour 1969 recommended the minimum wages act to cover the unorganised workers too (NCL 1969). The National Commission on rural labour appointed in 1987 recommended old age pension, life insurance, maternity benefit, disability benefits and minimum health care and sickness benefits to all rural workers (NCRL 1991). Launched during 1995

with the objective of protecting the poor and destitute persons in the event of insecurity due to old age, death of the prime breadwinner and maternity, the National Social Assistance Scheme (NSAP) is a fully centrally funded social assistance¹⁰ programme which include schemes such as Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), Indira Gandhi National Disability Pension Scheme (IGNDPS), National Family Benefit Scheme (NFBS) and Annapurna (MORD n.d). Besides NSAP certain poverty Alleviation Programmes (PAP) and employment oriented programmes initiated in the country with the prime focus on the rural poor and the informal workers. This includes Employment Assurance Scheme (EAS), Swarajayanti Gram swarojgar Yojana (SGSY), Sampoorna Grameen rojgar yojana, National Rural employment Guarantee Act (NREGA), Pradhanmantri Gram Sadak Yojana (PMGSY) etc. The provision of such employment oriented schemes for the urban area is really very scarce. The provision of the social security for the urban workers has become more important in view of the rapid growth of urban population. In Indian scenario, where the major chunk of urban poor work in the informal sector, concentration of social security benefits to these group of workers is of utmost importance to ensure sustainable and inclusive development and also to ensure the appropriate quality of life (Singh 2010, Singh n.d) .The Swarna Jayanti Sahri Rozgar Yojana (SJSRY) was introduced in 1997 to provide gainful employment to urban unemployed and under employed poor through self employment or wage employment. It is a centrally sponsored scheme launched in lieu of the ongoing urban poverty alleviation schemes such as viz., Nehru Rojgar Yojana (NRY), Prime Minister's Integrated Urban Poverty Eradication Programme (PMIUPEP) and Urban Basic Services for the Poor (UBSP).

SJSRY has five key components viz., The Urban Self Employment Programme (USEP), Urban Women Self- help Programme (UWSP), Skill Training for Employment Promotion amongst Urban Poor (STEP-UP), Urban Wage Employment Programme (UWEP) and Urban Community Development Network (UCDN). These programmes are to be implemented with other programmes relating to slum development/ urban poverty alleviation such as Jawaharlal Nehru National Urban Renewal Mission (JJUNRM) (SJSRY 2010). Introduced in 2005, JJUNRM is the first of its kind since independence, and is a massive ₹ 50,000 crores plan to provide integrated development of infrastructure services in cities and provision of basic services to the urban poor. Rajiv Awas Yojana (RAY) with the aim of a slum free India was introduced during 2009 and a sum of ₹ 60 crores have been approved for 20 states in 2009-10 for undertaking the preparatory activities for the effective implementation of the scheme. A budget of ₹ 1270 crores have been allotted for the year 2010-11 for RAY. The scheme aims to extend support to states that are willing to assign property rights to people living in slum areas for provision of shelter and basic infrastructure and civic amenities for them. Social insurance schemes meant for the informal workers include Janashree Bima Yojana, Varishta Pension Bima, Universal Health Insurance Scheme, Rashtriya Swasthya Bima Yojana, Aam Admi Bima Yojana (Ramesh 2009, NCEUS 2006). The Second National Labour Commission recommended an umbrella type legislation and drafted a bill to provide protection to the informal workers (NCL 2002). Based on these recommendations of the commission GOI launched 'Unorganised Sector Workers Social Security Scheme, 2004 in 50 districts on experimental basis, which provide three benefits such as, old age pension, medical insurance and accidental insurance. However due

to operation problems, such as, lack of statutory backing, voluntary nature of the scheme, poor support from the employers, hugeness of the informal sector etc. the scheme lost its viability (NCEUS 2006). On the basis of the report prepared by national commission of enterprise in unorganised sector “Unorganised Sector Workers Social Security bill 2008”¹¹ has been brought into force with effect from 16.05. 2009. The aim of the bill is equalise the social security status of the formal and the informal workers. However the bill is beset with a number of limitations such as exclusion of a large number of informal workers such as agricultural workers, construction workers and informal workers in the formal sector, ignorance of the working condition of the informal workers and the special problems of the women workers etc. have made the aim and implementation of the act doubtful.

Though the Government has taken several initiatives i.e. legislative measures and welfare schemes/programmes to improve the living and working conditions of this segment of working class, still the coverage is really poor, partially due to lack of initiative on the part of the government and partially due to inherent problems involved in the functioning of the sector itself such as casual nature of employment, invariably absence of definite employer-employee relationship, illiteracy, etc. Lack of awareness on the part of the workers regarding the availability of various centre and state level schemes is another hindrance on the way of implementation of the social security schemes (Planning Commission 2001, 2006). Despite the fact that various schemes are in operation for catering to the benefits of the workers , the amount spend by the government on the provision of the social security benefits is extremely low and to some extent extremely scattered (Suzler 2004). According to the World Labor Report (2000) public expenditure on social security in India is 1.8

percent of the GDP; whereas the same figured 4.7 percent in Sri Lanka and 3.1 percent in China.

It is found that in spite of the dominance of the informal sector in Indian economy, it is seen that the sector could not be attended properly by the social security measures initiated so far (Dhas and Helen 2008). A review of India's social security scheme shows that the social security in India is basically designed for the workers in the organised sector and the provision of social security for the unorganised workers is only for the namesake. The issue of social security provision for the informal sector workers got renewed interest in the wake of the economic reforms of 1991, where flexible labour market has deteriorated the employer employee relationship.

3.6 Chapter Summary

The chapter tries to form a base for the subsequent chapters and while doing so, it is found that the informal sector is growing all over the world; especially in the developing countries. Consequently the number of people depending on it is also increasing in these countries. However the parallel increment in productivity is not observed which puts a question mark on the productivity of the entire economy of these countries as a major chunk of the labour force are engaged in this sector. Linkage to the formal sector is expected to improve productivity. However, the presence of backward and forward linkage varies depending upon the nature of production and the degree of informality of the production units. It is also found from the reviewed literature that, though the informal sector is growing significantly in recent times, the provision of social security to the informal workers has not been

adequate, leaving them to suffer the adverse consequence of old age, accidents, disability, widowhood etc.

With this background the thesis tries to discuss the issues of growth dynamics, productivity, linkage and social security in the context of an Indian state namely Assam. The next chapter picks up the first objective and compares in detail the growing dynamism of the informal sector between India and Assam.

NOTES:

1. Macro level studies deal with the informal sector characteristics such as size of employment, magnitude of the sector in the country, its employment size, its share in the gross domestic product (GDP) of the country etc.
2. Micro level studies are sector specific studies which are designed to yield basic information relating to specific city or town.
3. Though the definition is a crude one, but captures the essential concept. See Pal, M.K. (2002). 'Productivity in the Organised Manufacturing sector in India, New Delhi: Concept Publishing Company.
4. The rate of growth of TFP (TFPG) refers to the portion of the rate of growth of output that is unexplained by the rate of growth of inputs. Empirical studies shows that the growth in the output cannot be totally explained by the growth in the two aggregate factors of production i.e. capital input and labour input. The residual growth which these factors cannot capture is caused by a number of factors which cannot be categories specifically. Abramovitz (1956) and Denison (1967) calls it a measure of our ignorance. TFPG is often used interchangeably with the technological progress. However the two should be strictly distinguished. Technological progress is often related to the advances in knowledge and its application to the art of production (invention, innovation or diffusion). It may take the form of new goods, new processes or new modes of organization. On the other hand changes in TFP, may take place for a number of reasons other than the technological progress as such. Thus improvement in the quality of labour, economies of scale or better utilisation of capacity may lead to substantial gains in TFP without any advances in technological progress.
5. Preventive measures aimed at preventing the occurrence of a contingency (Justino 2003).
6. Promotional measures include growth mediated as well as anti poverty measures such as employment generation schemes, backward area development programmes, provision of basic needs such as subsidized housing for the poor, slum improvement, primary education, health care, child nutrition, water supply and sanitation and public distribution system (Guhan 1994).
7. It is the intermediated category between the promotional and the preventive social security measures.
8. A joint family is consisting of many generations living under the same roof (http://en.wikipedia.org/wiki/Hindu_joint_family).
9. A nuclear family is consisting of a pair of Adults and their children. (http://en.wikipedia.org/wiki/Nuclear_family).

10. Social assistance meaning cash assistance is provided to those who are unable to work (such as the old, disabled and poor widows).
11. For details visit <http://labour.nic.in/act/acts/Unorganised-workers-social-security-act-2008.pdf>.



Chapter 4: Growth Dynamics of the Urban Informal Manufacturing Sector of Assam vis-à-vis India

4.1 Introduction

Informal sector, which was once considered as an economically unproductive and stagnant sector, accommodating unskilled and uneducated people, has now proved itself to be a vibrant and growth oriented segments in developing country. Studying the growth dynamics of the informal sector is a way of understanding the entrepreneurial capabilities of the people of an economy. This has raised interest among the researchers to study the inherent growth dynamism of this sector. This chapter portrays the growth dynamics of the urban informal manufacturing sector (UIMS) of the state and compares it with that of the national level.

4.2 Methodology and Data Source

The growth dynamics of the UIMS is studied with the help of some enterprise and employment characteristics such as¹ 1) Number of enterprises 2) Growth in the number of enterprises 3) Share of the UIMS of the state in the national level 4) Total employment 5) Growth in the number of total employment 6) Share of the employment in the UIMS of the state in the national level 7) Number and growth of full time workers (FTW) 8) Number and growth of part time workers (PTW) and 9) Employment per enterprise (EPE). The growth rates of various indicators are 'compound annual growth rate' and are calculated as: r

$$r = \left[(V_e / V_b)^{1/t} \right] \times 100, \text{ where } V_e = \text{end value, } V_b = \text{begin value, } t = \text{no. of intervening period}$$

Gender aspect of UIMS employment is also analysed as a large majority of the informal workers around the world are women (Chen et.al 2006). This is an important

issue to discuss as the post reform period has witnessed a wave of feminisation of workforce at all India level (Eapen 2001, Unni et. al. 1999, Dewan 1999). Female employment in unorganised sector of India is found to be concentrated mostly in OAMEs (Mukhopadhyaya 1999) and the incidence of women workers was much higher in part time employment in NDMEs and DMEs.

The analysis of these growth indicators is useful for an overall picture of the local economy's strengths and weaknesses. However, to understand the concentration of the UIMS of the state compared to that of the country. **Location Quotients (LQ)**² analysis is used both for employment and enterprise (Baer and Brown 2006). LQs are calculated separately for enterprise and employment, which reveal the degree of regional specialisation or concentration in each IMS segments. LQs are interpreted as follows
If, $LQ \leq 1$, the state has less concentration of a particular IMS segment than the nation or the state is less specialised in that particular IMS segment.

If, $LQ > 1$, the state has greater concentration of that particular IMS segment than the nation or the state is more specialised in that particular IMS segment

LQs, however, do not explain the sources of change over time or do not describe why the performance of the local economy differs from that of the nation. To understand this, the technique of Shift Share Analysis (SSA) is used, both for the employment and the enterprises. SSA³ is a method of standardizing growth rates when the differences in the rates and the effects of composition are both of interest. This is a way to account for a region's competitiveness. It provides a picture of how well a region's mix of industries is performing. It also shows how well individual industries are doing. It can be used to analyze individual industries or the economy as a whole. The method breaks down

regional employment growth rate into three components, v.i.z. National Growth Share (NGS), Industry Mix Share (IMxS) and Regional Shift Share (RSS).

NGS component shows the share of regional growth of the national economy. It shows if the regional industry grew at the industry's national growth rate what could be the result?

$$NGS = e_i^t \{ (E^{t+n} / E^t) - 1 \}$$

Where, e_i^t = Regional employment/ enterprise at time 't'.

E^{t+n} = National employment/ enterprise at time 't+n'.

E^t = National employment/ enterprise at time 't'.

IMxS component shows how much growth can be attributed to the region's mix of industries and at the same time it estimates how many jobs were created or not created in each industry due to differences in industry and total national growth rates.

$$IMxS = e_i^t \{ (E_i^{t+n} / E_i^t) - (E^{t+n} / E^t) \}$$

Where, E_i^{t+n} = National employment/ enterprise at i^{th} industry at time t+n .

E_i^t = National employment/ enterprise at i^{th} industry at time t.

Regional shift component shows the number of jobs created or not created as a result of the competitiveness of the region. It is the most important component of SSA as it identifies the region's leading and lagging industries.

$$RSS = e_i^t \{ (e_i^{t+n} / e_i^t) - (E_i^{t+n} / E_i^t) \}$$

Where, e_i^{t+n} = Regional employment/ enterprise in i^{th} industry at time 't+n'

e_i^t = Regional employment/ enterprise in i^{th} industry at time 't'.

Changes in employment or number of enterprises in any region between time 't' and 't+n' is then sum of these three components.

$e_i^{t+n} - e_i^t = \text{National Growth Share (NGS)} + \text{Industrial Mix Share (IMxS)} + \text{Regional Shift Share (RSS)}$.

$$\text{Or } e_i^{t+n} - e_i^t = e_i^t \{ (E^{t+n}/E^t) - 1 \} + e_i^t \{ (E_i^{t+n}/E_i^t) - (E^{t+n}/E^t) \} + e_i^t \{ (e_i^{t+n}/e_i^t) - (E_i^{t+n}/E_i^t) \}$$

The chapter uses data on enterprises and employment as provided by NSSO on IMS for three points of time 1994-95, 2000-01 and 2005-06. The entire period of analysis from 1994-95 to 2005-06 is sub divided in to two and are labeled as ‘early reform period’ (1994-95 to 2000-01) and the ‘later reform period’ (2000-01 to 2005-06). NSSO is selected as the major secondary source of information as this is the only agency to provide data on various dimensions of the IMS of India at regular intervals.

4.3 Growth Profile of the UIMS of Assam vis-à-vis India

4.3.1 Number and Growth of Enterprises

Table 4.1 shows the estimated number of the UIMS enterprises in the state and compares it with the UIMS of India. It is seen that in all the three periods under study, the OAMEs dominate the UIMS of the state with the majority of enterprises coming under it. Next stands the NDMEs and finally the DMEs. This is in line with the national trend. However the share of OAMEs in the UIMS of the state has consistently been lower than their national counterpart. The same is the case with the DMEs. However the NDMEs show a strong presence in the UIMS of the state with its share constantly being higher than the national average in all the three periods under study. Figure 4.1 depicts the estimated number of UIMS enterprises in Assam and India.

The calculated LQs (Table 4.2) also show that the UIMS of the state has been experiencing increasing specialisation in terms of higher concentration of NDMEs.

For OAMEs and DMEs also the LQs were found to have been increasing during the study period, which show increasing specialisation of the local economy in terms of the number of UIMS enterprises. Figure 4.2 shows the calculated LQs for different IMS segments.

Table 4.1: Estimated Number of Enterprises ('00) by Enterprise type in UIMS of Assam and India

Year	Area	OAME	NDME	DME	All IMS
1994-95	Assam	182 (56.5)	126 (38.9)	15 (4.5)	323 (100)
	India	27148 (67.7)	9320 (23.2)	3602 (8.9)	40070 (100)
2000-01	Assam	233 (61.3)	133 (35.1)	14 (3.7)	380 (100)
	India	36072 (70.9)	10822 (21.3)	4002 (7.9)	50865 (100)
2005-06	Assam	219 (58)	136 (36)	21 (5.5)	377 (100)
	India	35041 (70.8)	10250 (20.7)	4133 (8.3)	49425 (100)

Source: NSSO 51st, 56th and 62nd rounds.

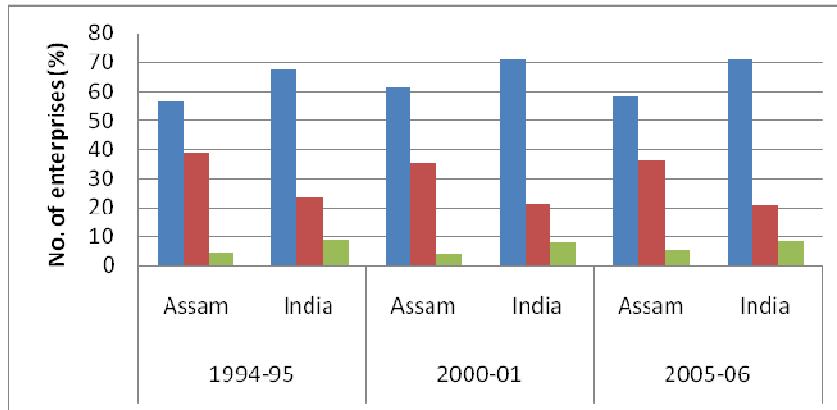
Note: Figure in the parentheses show percentages in the total.

Table 4.2: Location Quotient for UIMS Enterprises of Assam

	LQ _{OAME}	LQ _{NDME}	LQ _{DME}
1994-95	0.83	1.67	0.51
2000-01	0.86	1.64	0.46
2005-06	1.14	1.73	0.66

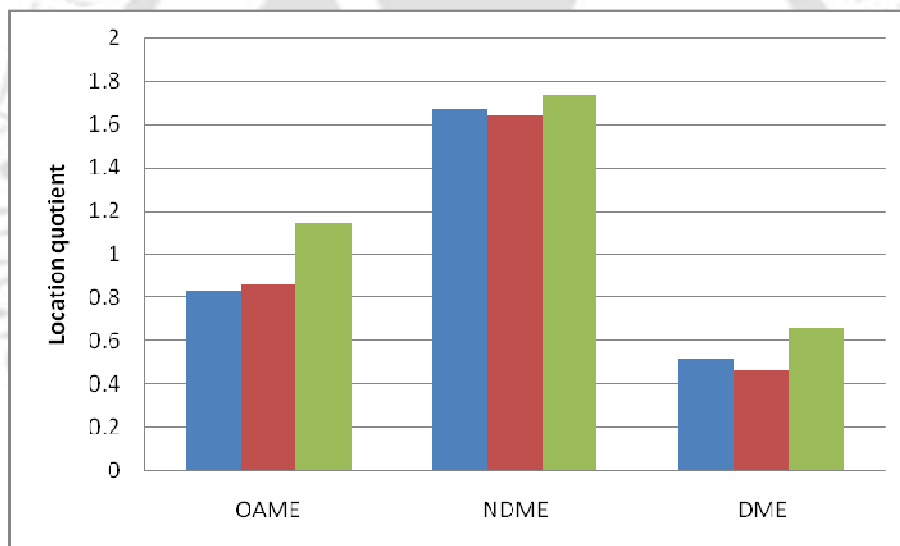
Source: Author's calculation based on table 4.1

Figure 4.1: UIMS Enterprises in Assam and India (in %)



Source: Based on table 4.1

Figure 4.2: Location Quotient of UIMS Enterprises of Assam



Source: Based on table 4.2

The UIMS of the state marks a positive growth in terms of enterprises, in the early reform period whereas the later reform period is associated with a negative growth (Table 4.3). This follows the national trend. However, a closer look into the growth of the various segments of the UIMS shows that during 2000-2006, NDMEs at the national level mark a negative growth (-1.08%), whereas the same segment registered a positive growth (0.44%) in the state UIMS. More interestingly DMEs, the biggest

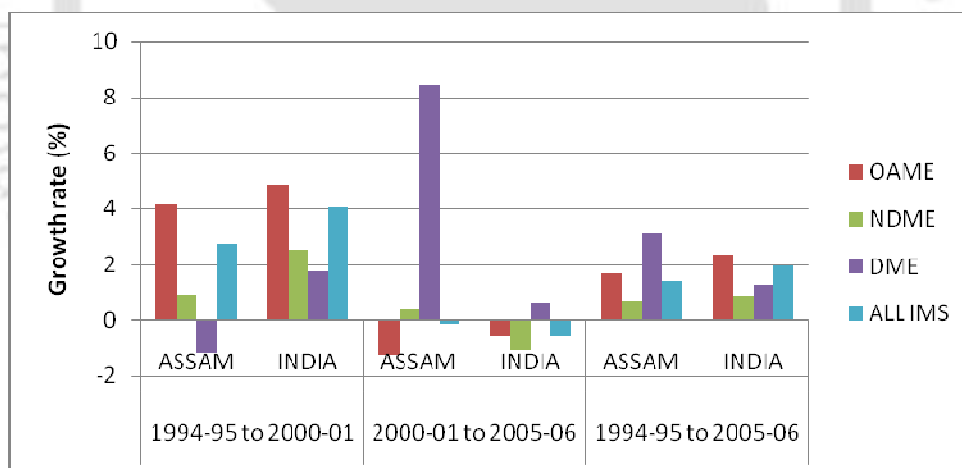
segment of the IMS, shows spectacular growth (8.44%) in the UIMS of the state as against a smaller growth of 0.64 percent at the national level. The positive growth of the higher segments of the UIMS can be considered as a sign of development for the UIMS of the state. Figure 4.3 illustrates the situation of the growth in the number of UIMS enterprises in Assam and India.

Table 4.3: Growth in the Number of UIMS Enterprises: Assam and All India Compared (%)

		OAME	NDME	DME	ALL IMS
1994-95 to 2000-01	ASSAM	4.20	0.90	-1.14	2.74
	INDIA	4.85	2.52	1.77	4.06
2000-01 to 2005-06	ASSAM	-1.23	0.44	8.44	-0.15
	INDIA	-0.57	-1.08	0.64	-0.58
1994-95 to 2005-06	ASSAM	1.69	0.69	3.10	1.41
	INDIA	2.34	0.86	1.25	1.92

Source: Author's calculation based on table 4.1.

Figure 4.3: Growth in the Number of UIMS Enterprises in Assam and India



Source: Table 4.3

4.3.2 Share of the UIMS of Assam in UIMS of India:

Table 4.4 shows the share of UIMS of the state in the total UIMS of India and its changing trend during the study period. The share of the UIMS of the state as a whole has declined marginally during the study period (a decline from 0.8% in 1994-

95 to 0.76% in 2005-06). While the share of the OAMEs have declined continuously, the urban NDMEs of the state showed constant share in 1994-95 and in 2005-06, except a marginal decline from 1.3 percent to 1.2 percent in 2000-01. Urban DMEs of the state experienced a fall in their share during 2000-01, but then showed an increase in share which surpassed the 1994-95 level. The share of the UIMS of the state in the UIMS of India is depicted diagrammatically in figure 4.4. The changing share of the UIMS of the state at the all India level is given in table 4.5 and illustrated graphically in figure 4.5. It is observed that during the period from 1994-95 to 2000-01 the UIMS of the state have registered a falling share of -7.3 percent at the national level. The highest fall was experienced by DMEs (-15.9%) and lowest fall by the OAMEs (-3.6%). Against this the period from 2000-01 to 2005-06 have experienced an increase in the share (2.1%) of the UIMS of the state at the national level. The highest share is enjoyed by the DMEs (45.2%), followed by the NDMEs (7.9%). The falling shares of the OAMEs continued during this period also and are responsible for the small percentage share of the overall UIMS of the state at the all India level.

Table 4.4: Share of UIMS Enterprises of Assam in the UIMS of India (%)

	OAME	NDME	DME	Total
1994-95	0.67	1.3	0.4	0.8
2000-01	0.64	1.2	0.3	0.74
2005-06	0.62	1.3	0.5	0.76

Source: Author's calculation based on table 4.1.

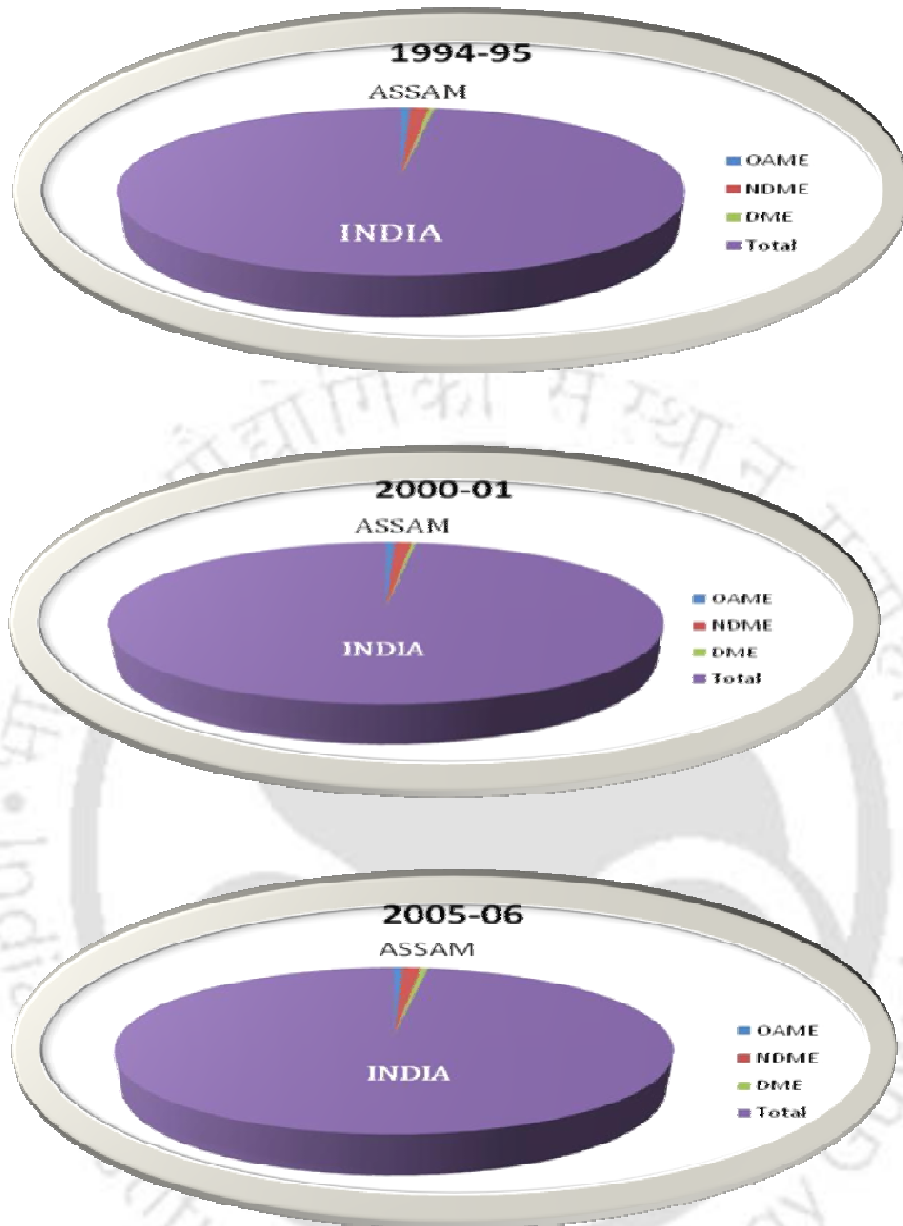


Figure 4.4: Share of UIMS of Assam in UIMS of India
 Source: Table 4.4

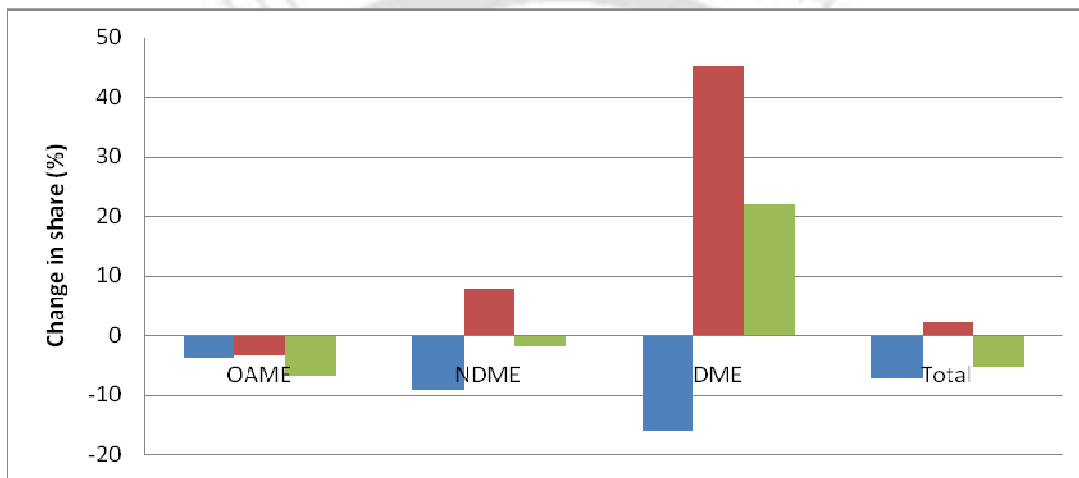
Thus for the entire study period state DMEs recorded significantly higher growth in their share (22%) at all India level as compared to the falling shares of the OAMEs (-6.7%) and NDMEs (-1.8%).

Table 4.5: Change in the Share of UIMS Enterprises of Assam in the UIMS of India (%)

	OAME	NDME	DME	Total
1994-95 to 2000-01	-3.6	-9.1	-15.9	-7.3
2000-01 to 20005-06	-3.2	7.9	45.2	2.1
1994-95 to 2005-06	-6.7	-1.8	22	-5.3

Source: Source: Author's calculation based on table 4.1.

Figure 4.5: Changing Share of the UIMS Enterprises of Assam in the UIMS Enterprises of India (%)



Source: Table 4.5

4.3.3 Total UIMS Employment and their Growth

Table 4.6 and 4.8 discuss the situation of employment and its growth in the UIMS of the state. It is found that the NDMEs are the major employment provider of the UIMS in the state which is opposite to the national trend, where the OAMEs are providing more employment. Employment concentration is the lowest in DMEs of the state. The calculated LQs (Table 4.7) also show, as it was the case with the enterprise growth, in case of the employment growth also, the state NDMEs were more specialised in terms of higher employment concentration than their counterpart

at the national level. High LQ for the DMEs during 2005-06 shows increasing specialisation of the DMEs in generating employment in the UIMS of the state.

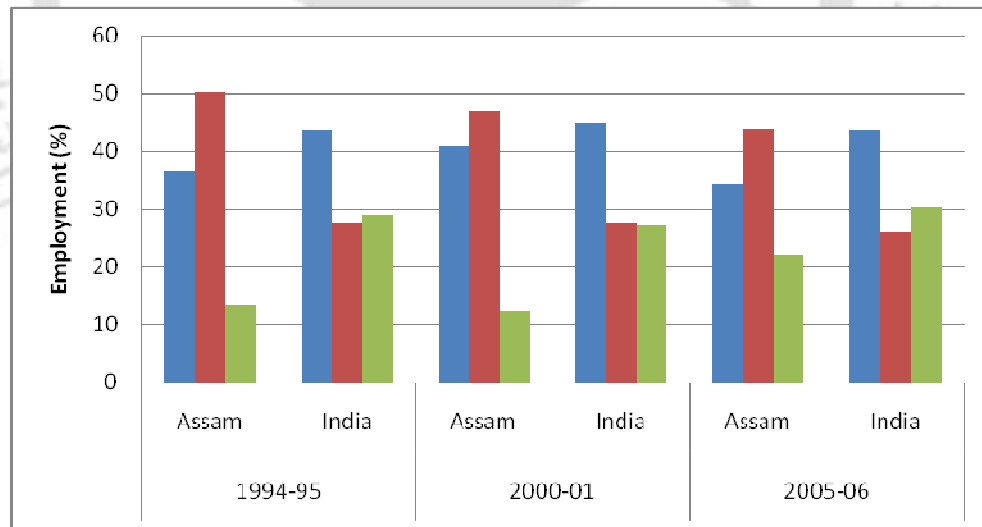
Table 4.6: Estimated Employment (in'00) in UIMS of Assam

		OAME	NDME	DME	ALL IMS
1994-95	Assam	285 (36.4)	393 (50.2)	105 (13.4)	783 (100)
	India	48183 (43.5)	30571 (27.6)	32011 (28.9)	110766 (100)
2000-01	Assam	361 (40.8)	415 (46.9)	108 (12.2)	884 (100)
	India	59141 (45.1)	36287 (27.7)	35522 (27.1)	130951 (100)
2005-06	Assam	331 (34.12)	424 (43.7)	215 (22.1)	970 (100)
	India	56660 (43.6)	33954 (26.1)	39231 (30.2)	129845 (100)

Source: NSSO 51st, 56th and 62nd rounds.

Note: Figure in the parentheses show % in the total.

Figure 4.6: Employment (%) in the UIMS of Assam and India



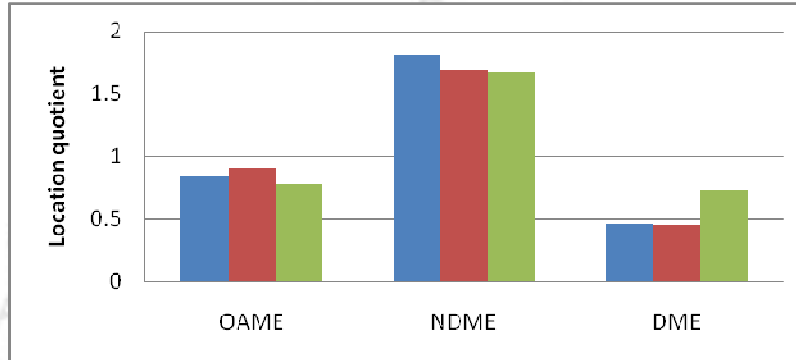
Source: Table 4.6

Table 4.7: Location Quotient of UIMS Employment of Assam

	LQ _{OAME}	LQ _{NDME}	LQ _{DME}
1994-95	0.84	1.82	0.46
2000-01	0.90	1.69	0.45
2005-06	0.78	1.67	0.73

Source: Author's calculation based on table 4.6

Figure 4.7 : Location Quotient of UIMS Employment of Assam



Source: Table 4.7

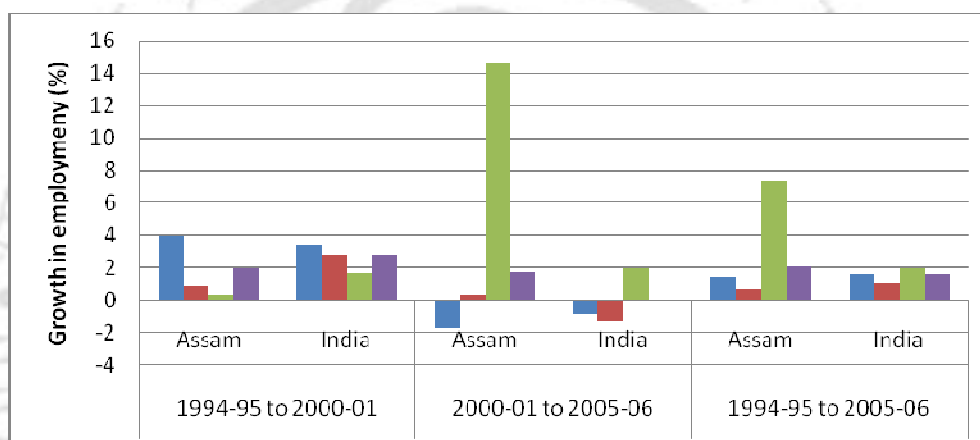
However the changing employment situation in the UIMS of the state shows that during the early reform period, growth of employment was the highest in OAMEs, which was even higher than the all India level, followed by the NDMEs and DMEs (Table 4.8). In the later reform period, spectacular employment growth (14.7%) took place in the DMEs of the state UIMS as against a 2 percent growth of the DMEs at the national level. Because of this fabulous growth of employment in the DMEs, the UIMS of the state as a whole, could register a positive growth of employment during this period; whereas the same period observed a negative growth (-0.1%) of employment at the all India level. Considering the entire period from 1994-95 to 2005-06 it is found that the growth of employment in the UIMS of the state (1.96 %) is above the national level (1.45%). The situation of employment growth is depicted graphically in figure 4.8.

Table 4.8: Growth of Employment in UIMS of Assam (%)

		OAME	NDME	DME	ALL IMS
1994-95 to 2000-01	ASSAM	4.02	0.91	0.47	2.04
	INDIA	3.47	2.89	1.74	2.82
2000-01 to 2005-06	ASSAM	-1.72	0.43	14.76	1.87
	INDIA	-0.85	-1.32	2.01	-0.16
1994-95 to 2005-06	ASSAM	1.36	0.69	6.73	1.96
	INDIA	1.48	0.95	1.86	1.45

Source: Author's calculation based on table 4.7

Figure 4.8: Growth of Employment in UIMS of Assam and India



Source: Table 4.8

4.3.4 Share of UIMS Employment of Assam at the National level

Table 4.9 and 4.10 discusses the share of employment in the UIMS of the state and its changing structure at the national level. The employment shares of the UIMS of the state have increased during the study period (from 0.70% in 1994-95 to 0.74% in 2005-06). Among the three categories of the IMS, the urban NDMEs of the state have highest employment share at the national level and the share of DMEs were found to be the lowest in all the three periods under study (Figure 4.10)

Table 4.9: Share of the UIMS Employment in Assam in the National Level (%)

	OAME	NDME	DME	Total
1994-95	0.59	1.28	0.32	0.70
2000-01	0.61	1.14	0.30	0.67
2005-06	0.58	1.24	0.54	0.74

Source: Author's calculation based on table 4.6

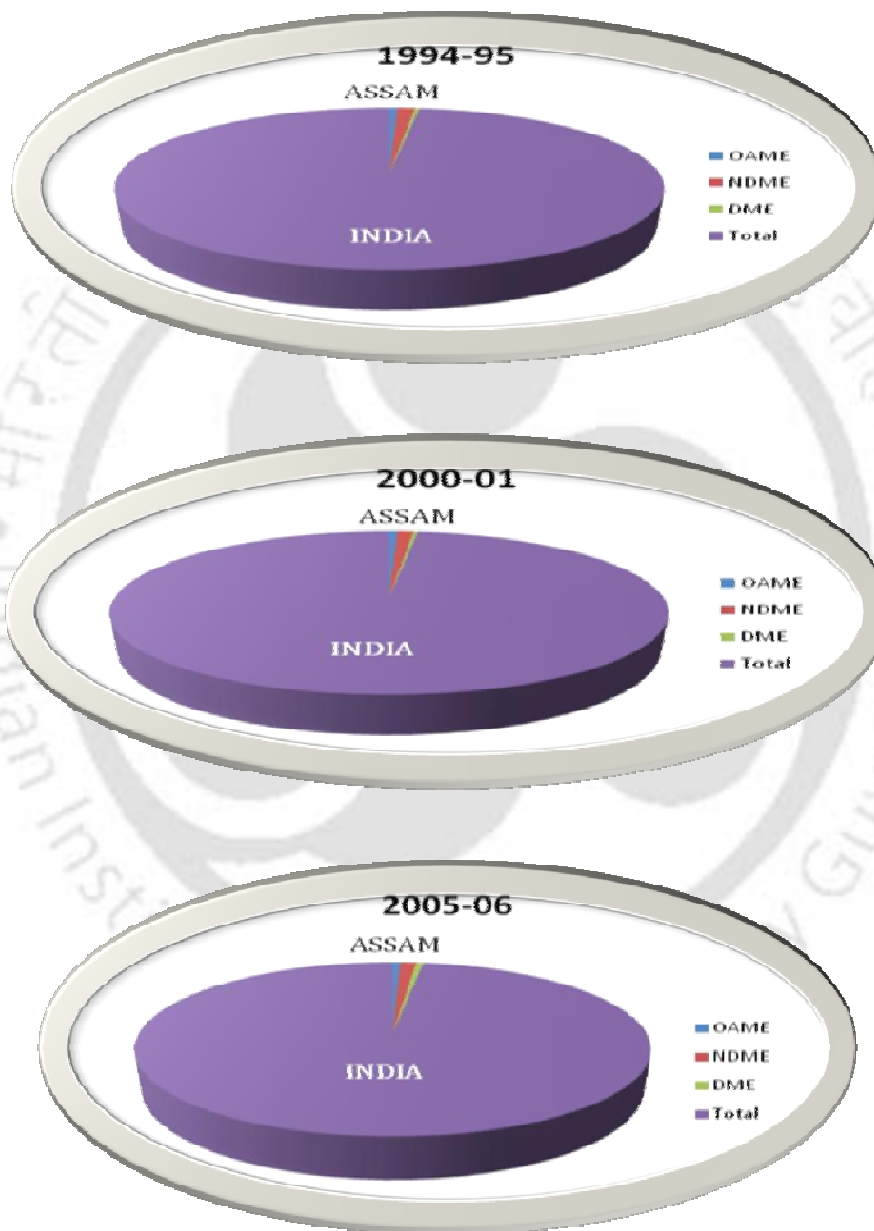


Figure 4.9 : Share of the UIMS Employment of Assam in UIMS of India

Source: Table 4.9

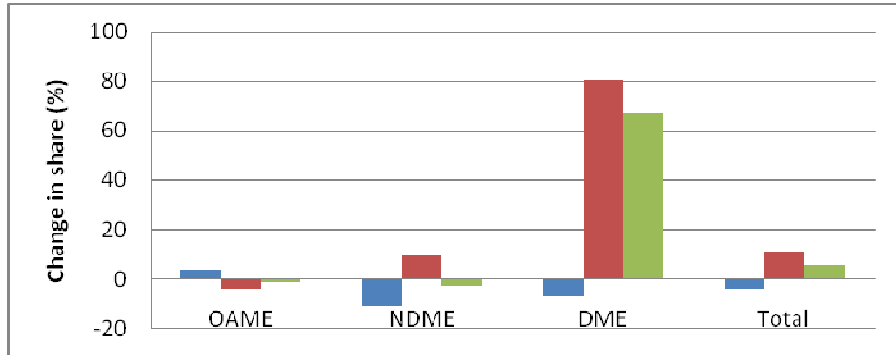
Over the years, however the pattern of employment have changed; where the share of the OAMEs and NDMEs declined and that of the DMEs increased (Table 4.10). The early reform period was a period of falling employment share (-4.5%) for the UIMS of the state. Except OAMEs (3.19%), both the NDMEs and the DMEs recorded falling employment share at the national level during this period. The later reform period was associated with the positive employment share of the UIMS of the state (10.6%). This is mainly triggered by the positive growth in the shares of the NDMEs (9.18%) and the DMEs (80.25%). It is because of the spectacular employment growth in the state DMEs, the employment share of the state stood at a positive figure of 5.6 percent during the entire study period, despite the negative growth share of the other two IMS categories. Figure 4.10 graphically illustrate the changing share of UIMS employment of Assam in the UIMS of India.

Table 4.10: Changing Share of the UIMS Employment of Assam in the National Level (%)

	OAME	NDME	DME	Total
1994-95 to 2000-01	3.19	-11.03	-7.30	-4.5
2000-01 to 2005-06	-4.29	9.18	80.25	10.6
1994-95 to 2005-06	-1.23	-2.86	67	5.6

Source: Author's calculation based on table 4.6

Figure 4.10: Changing Share of UIMS Employment of Assam in UIMS Employment of India (%)



Source: Table 4.10

4.3.5 Gender wise Distribution of Employment in the UIMS of Assam

Table 4.11 bring out the gender wise distribution of employment in the UIMS of Assam and compares it to the All India level. It is found that male employment dominates over the female employment both at the state as well as at the national level. But, it is observed that the percentage share of female employment in total employment is increasing over the years whereas, the same has decreased for the male employment. This is in line with the all India trend. It is also observed that female employment in the state UIMS is occupying relatively small share as compared to the female employment in the UIMS of the all India level. Whereas the male employment in the state UIMS shows a higher percentage share compared to the male employment in the UIMS at the national level.

Table 4.11: Gender Distribution of Employment in UIMS of Assam and India

Year	TE	FE	ME	% FE in TE	% ME in TE
India					
1994-95	110766	19388	91381	17.5	82.5
2000-01	130951	32193	98758	24.6	75.4
2005-06	129845	36396	94448	27.2	72.8
Assam					
1994-95	783	100	683	12.8	87.2
2000-01	884	162	722	18.3	81.7
2005-06	970	200	770	20.6	79.4

Source: NSSO reports no. 434, 477, 524 and indiastat.com

Note: TE: Total Employment, FE: Female Employment, ME: Male Employment.

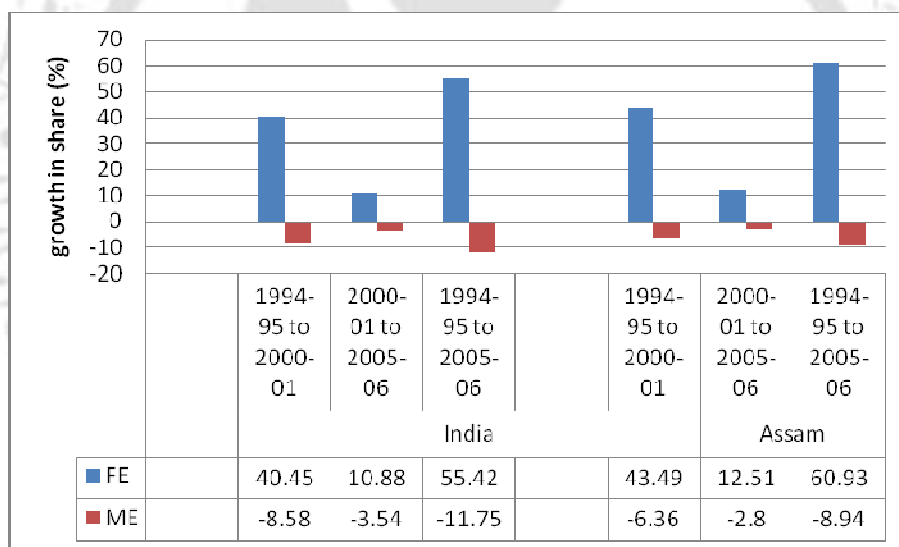
The changing share of employment shows that the female employment is enjoying an increasing share in total UIMS employment and the corresponding male employment has suffered a falling share during the study period both at the state and at the national level (Table 4.12). It is also observed that the percentage change in the share of female employment in the state UIMS is higher than the national average for both the early and later reform period. For the entire period under study, the percentage change in the share of female employment in the state (60.93%) was found higher than the all India average (55.42%). At the same time the falling percentage share of the male employment in the state (-8.94%) has been lower than the all India level (-11.75%). This is an indication of the fact that the growth of total UIMS employment in the state, including both male and female is higher than the all India level and that the UIMS of the region is growing. The diagrammatic representation is given in figure 4.12.

Table 4.12: Changing share of Employment by Gender in UIMS of Assam and India (%)

	% change in the share of FE in TE	% change in the share of ME in TE
India		
1994-95 to 2000-01	40.45	-8.58
2000-01 to 2005-06	10.88	-3.54
1994-95 to 2005-06	55.42	-11.75
Assam		
1994-95 to 2000-01	43.49	-6.36
2000-01 to 2005-06	12.51	-2.80
1994-95 to 2005-06	60.93	-8.94

Source: Author's calculation based on table 4.11

Figure 4.11: Changing share of the Employment by Gender in the UIMS of Assam and India



Source: Table 4.12

Note: FE: Female Employment; ME: Male Employment

4.3.6 *Employment by Nature*

By nature employment is classified into part time⁴ and full time⁵. Study of employment by nature helps in estimating the magnitude of workforce fully dependent on earning from the UIMS. Employment by nature show similar pattern both at the state and at the all India level, which is discussed with the help of Table

4.13 and 4.14. More than 80 percent of workers were found to be engaged as full time workers (FTW) both at the national and at the state level, for all the periods under study. However, over the years a fall in the share of FTW is observed with a rise in the share of the part time workers (PTW). Workforce participation in the UIMS for the females is found to be lower than that of the male for both the category of PTW as well as the FTW; for both the state and the country. However, over the years an increasing percentage of female workers (both part time and full time) are found to have been engaged in the UIMS. Compared to the national average a lower percentages of female workers are found to be engaged in the state UIMS.

Table 4.13: Estimated Employment ('00) by Nature and Gender in UIMS of Assam and India

		FT			PT			All(FT+PT)		
		M	F	All	M	F	All	M	F	All
1994-95	Assam	630 (89.7)	72 (10.2)	702 (89.7)	53 (65.4)	28 (34.56)	81 (10.34)	683 (87.22)	100 (12.78)	783 (100)
	India	88280 (83.6)	17229 (16.3)	105509 (95.2)	3101 (58.9)	2159 (41)	5260 (4.7)	91381 (82.5)	19388 (17.5)	110769 (100)
2000-01	Assam	647 (84.5)	118 (15.4)	765 (86.5)	75 (62.5)	44 (36.6)	120 (13.5)	722 (81.7)	162 (18.32)	884 (100)
	India	94584 (79.8)	23854 (20.1)	118438 (90.4)	4174 (33.3)	8338 (66.6)	12513 (9.5)	98758 (75.4)	32192 (24.5)	130951 (100)
2005-06	Assam	711 (86.9)	107 (13.1)	818 (84.3)	59 (38.8)	92 (60.5)	152 (15.6)	770 (79.4)	199 (20.5)	970 (100)
	India	89447 (78.4)	24631 (21.6)	114078 (87.8)	5000 (31.7)	10765 (68.4)	15733 (12.1)	94448 (72.7)	35396 (27.3)	129845 (100)

Source: Author's calculation based on NSSO report no. 434, 477 and indiastat.com

Note: figures in the parentheses shows the percentages

A discussion on the growth of employment by nature and gender shows that growth of FTW was higher for the state UIMS and that of the PTW was higher for the UIMS of the nation (Table 4.14). The higher growth of the FTW is mainly attributed to the higher growth of the FTMW of the state UIMS during the later reform period, whereas the FTMW at the national level were experiencing a trend of negative growth. The growth of FTFW, though slowed down during this time, was higher than their counterpart at the national level. In the category of the PTW, negative growth in the PTMW, during the later reform period dragged the overall growth of the PTW of the state UIMS down the national level. The PTFW in the state UIMS registered a higher growth during this period. The graphic representation of growth of part time and full time workers is given in is given in figure 4.12 and 4.13.

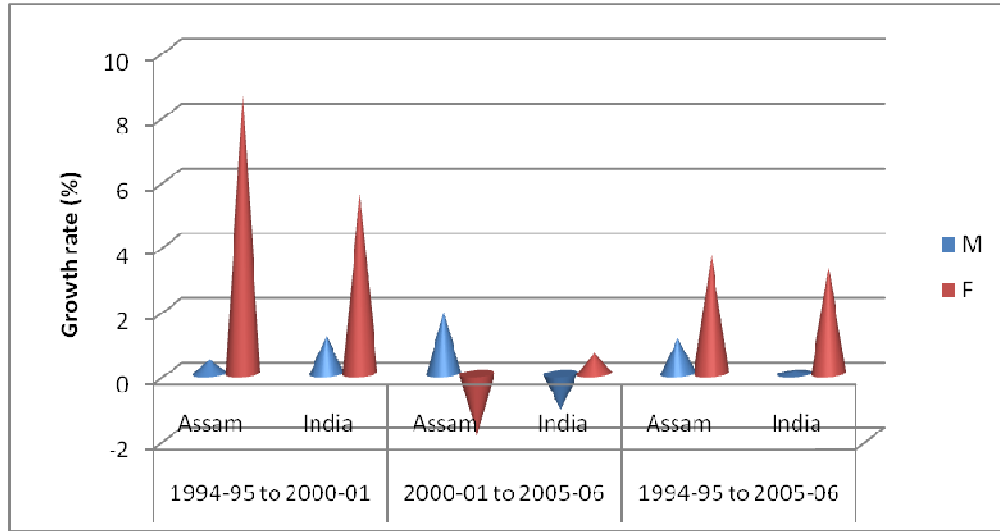
Table 4.14: Growth of Employment by Nature and Gender in UIMS of Assam (%)

		FT			PT			ALL(PT+FT)		
		M	F	A	M	F	A	M	F	ALL (PT+F T)
1994-95 to 2000-01	ASSAM	0.44	8.58	1.44	6.29	7.82	6.99	0.95	8.37	2.06
	INDIA	1.15	5.57	1.94	5.07	25.25	15.53	1.30	8.82	2.82
2000-01 to 2005-06	ASSAM	1.90	-1.93	1.34	-4.68	15.89	4.84	1.29	4.19	1.87
	INDIA	-1.11	0.64	-0.74	3.67	5.24	4.68	-0.88	1.91	-0.16
1994-95 to 2005-06	ASSAM	1.10	3.66	1.4	1.15	11.42	6.00	1.11	6.45	1.97
	INDIA	0.11	3.30	-0.71	4.43	15.72	10.47	0.30	5.62	1.45

Note: M: male; F: female; PT: part time; FT: full time.

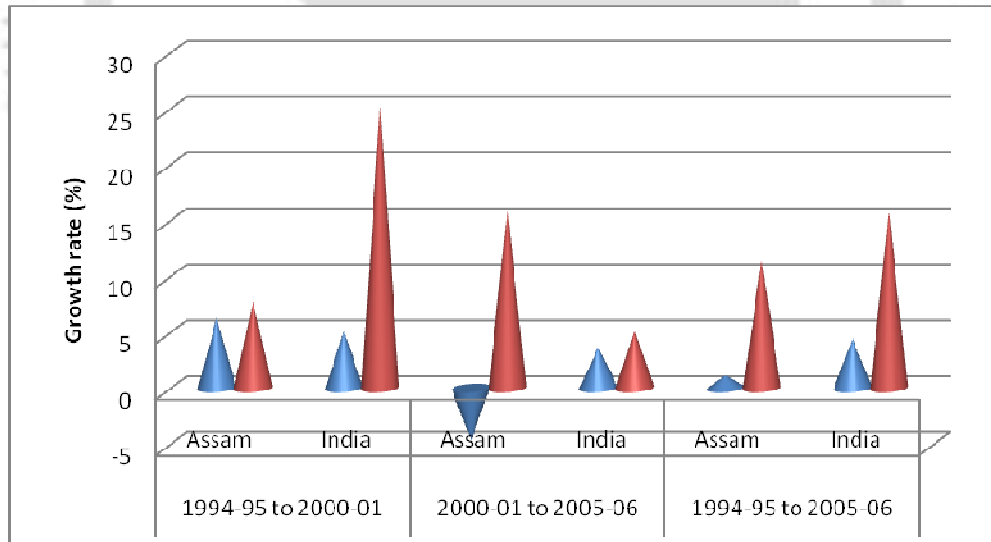
Source: Author's calculation based on table 4.13.

Figure 4.12: Growth of Full time Workers in UIMS of Assam and India



Source: Table 4.14

Figure 4.13: Growth of Part time Workers in UIMS of Assam and India



Source: Table 4.14

4.3.7 *Employment per Enterprise*

Employment per enterprise is given by the employment enterprise ratio. It shows the concentration of employment in each segment of the UIMS. Table 4.15 and 4.16 give the employment enterprise ratio and its growth in the study period. It is found that per enterprise employment grows positively in the UIMS of Assam whereas at the all India level the ratio shows a negative growth. This is mainly triggered by the high and positive growth in the employment enterprise ratio in the later period of reform in Assam as compared to the national level. A look into the employment enterprise ratios for the various segments of UIMS revealed the fact that NDMEs; both at the national as well as at the state level shows marginal or no growth in employment per enterprises, whereas the DMEs shows maximum positive growth. For the OAMEs the employment per enterprise shows a negative growth both for Assam and India. Thus the higher segments of UIMS are attracting more and more persons over the years. Figure 4.14 depicts the growth of employment per enterprise graphically.

Table 4.15: Employment Enterprise Ratio in the UIMS of Assam and India

Year	OAME	NDME	DME	ALL IMS
India				
1994-95	1.7	3.2	8.8	2.7
2000-01	1.6	3.3	8.8	2.5
2005-06	1.6	3.3	9.5	2.6
Assam				
1994-95	1.5	3.1	7	2.4
2000-01	1.5	3.1	7.7	2.3
2005-06	1.5	3.1	10.2	2.5

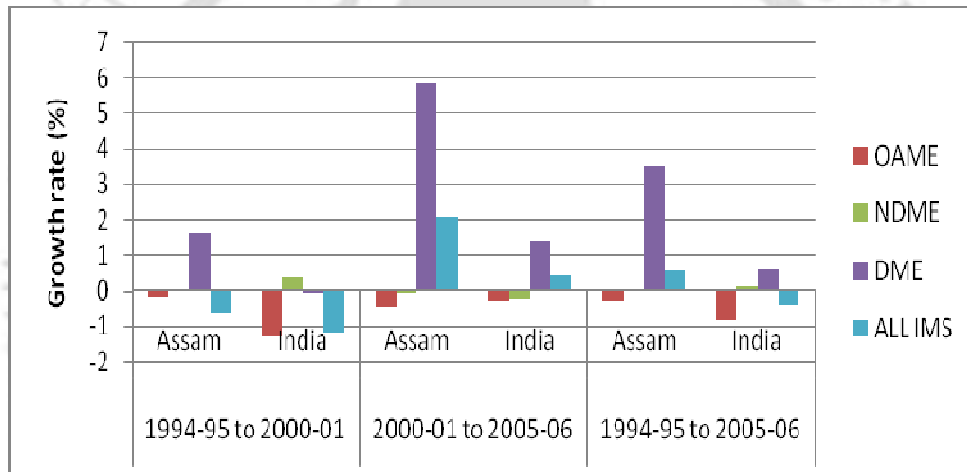
Source: Author's calculation based on table 4.1 and 4.6

Table 4.16: Growth in Employment Enterprise Ratio in UIMS of Assam and India

		OAME	NDME	DME	ALL IMS
1994-95 to 2000-01	Assam	-0.17	0.00	1.63	-0.68
	India	-1.31	0.36	-0.02	-1.18
2000-01 to 2005-06	Assam	-0.49	-0.01	5.82	2.03
	India	-0.27	-0.24	1.35	0.41
1994-95 to 2005-06	Assam	-0.32	-0.00	3.51	0.54
	India	-0.84	0.089	0.60	-0.46

Source: authors' calculation based on table 4.15.

Figure 4.14: Growth in Employment per Enterprise in the UIMS of Assam and India (%)



Source: Table 4.16

4.4 Shift Share Analysis

An initial discussion on the growth of the UIMS of the state vis-à-vis India shows that the UIMS of the state is not lagging behind the UIMS of the country. In fact some of the indicators show higher growth for the state UIMS than that of the UIMS of the nation. In the following section the technique of shift share analysis is used to look into the components of this higher growth of the local UIMS (i.e. state UIMS).

4.4.1 Shift Share Analysis for the UIMS Enterprises in Assam

4.4.1 a) Period from 1994-95 to 2000-01

The national growth component shows that, if the growth rate of the UIMS of the regional economy had been same to the national economy, then the regional economy would have gained 8700 enterprises during the early reform period (Table 4.17.1). However, it is evident from table 4.17 that the regional economy has added only 5700 enterprises during the period i.e. a lag of nearly 3000 enterprises. This pointed to the fact the UIMS of the state is lagging behind the UIMS of India during the early reform period. A closer view of table 4.17 and table 4.17.1 reveal that OAMEs are growing faster than expected (e.g. 5100 actual OAMEs versus 4900 predicted OAMEs). For the other two categories i.e. NDMEs and the DMEs the actual numbers of units are less than their predicted numbers; 3400 predicted NDMEs against a total of 700 NDMEs and 400 predicted DMEs against a fall of 100 DMEs. This implies that the pattern of enterprise growth in the UIMS of the region did not follow the overall UIMS growth pattern of the national economy. The reason behind this is analysed by the other two components of the SSA i.e. the industrial mix components and the regional share components.

The industrial mix share for Assam (which shows the effect of the fast and slow growing industries at the national level on the enterprises growth of the regional economy) is found to be -5.59 (Table 4.17.2). This implies that the state UIMS has lost nearly 500 enterprises because of the slow growth of the sector as compared to the UIMS of the national economy. Although the OAMEs are growing faster than the national average growth rate, the slower growth of the NDMEs and DMEs makes the industrial mix component a negative one. The negative industrial mix component

shows that the regional economy was weighed towards the negatively growing NDMEs and DMEs than the positively growing OAMEs.

Regional shift share helps one to determine whether industries in the state UIMS are growing faster or slower than similar industries at the national level. The regional share may also be interpreted as an indicator of the competitiveness of the state UIMS industries as compared to the national UIMS. The calculated negative regional share for Assam (Table 4.17.3) indicates the UIMS of the region is less competitive than the UIMS of the country as a whole. Nearly 2500 enterprises could not be established because of the lesser competitiveness of the local economy.

Total of NGS, IMxS and RSS is the actual change in the number of enterprise in the state during 1994-95 to 2000-01.

$$\begin{aligned} \text{Change in the number of enterprises in Assam} &= \text{NGS} + \text{IMxS} + \text{RSS} \\ 57 &= 87.2423 + (-5.5953) + (-24.747) \end{aligned}$$

Table 4.17: UIMS Enterprises Data for India and Assam from 1994-95 to 2000-01 (figures in '00)

Enterprises	1994-95	2000-01	Change in enterprises no.	% change in enterprises no.
India				
Total Enterprises	40070	50895	10825	27.01
OAME	27148	36072	8924	32.87
NDME	9320	10822	1502	16.11
DME	3602	4002	400	11.10
Assam				
Total Enterprises	323	380	57	17.64
OAME	182	233	51	28.02
NDME	126	133	7	5.55
DME	15	14	-1	-6.66

Source: NSSO 51st and 56th rounds

Table 4.17.1: National Growth Share Calculation (figures in '00)

Enterprises	1994-95 enterprises in Assam	National average growth rate (%)	National growth share
OAME	182	27.01	49.16
NDME	126	27.01	34.03
DME	15	27.01	4.05
Assam's NGS			87.2423

Source: Author's calculation based on table 4.17

Table 4.17.2: Industrial Mix Share Calculation (figures in '00)

Enterprises	1994-95 enterprises in Assam	National growth rate of industries (%)	National average growth rate of industries (%)	Industrial mix share
OAME	182	32.08	27.01	10.53
NDME	126	16.01	27.01	-13.75
DME	15	11.10	27.01	-2.38
Assam's IMxS				-5.59

Source: Author's calculation based on table 4.17

Table 4.17.3: Regional Shift Share Calculation

Enterprises	1994-95 enterprises in Assam	Growth rate of enterprise in Assam (%)	National growth rate of enterprise (%)	Local share
OAME	182	28	32.8	-8.73
NDME	126	5.5	16.01	-13.35
DME	15	-6.6	11.01	-2.65
Assam's RSS				-24.747

Source: Author's calculation based on table 4.17

4.4.1 b) *Period from 2000-01 to 2005-06:*

SSA in table 4.18 pointed to the fact that if the growth of the UIMS in the local economy would have identical to the growth of the UIMS of the national economy,

the number of UIMS enterprises in the region would have declined by 1100 units during the later reform period. However, it is found that the actual decline was only by 300 units. This indicates the strength of the local economy in terms of the number of the UIMS units. The fall in the number of units under OAME is greater than predicted (1400 as against a predicted number of 600). However, the number of NDMEs and DMEs show increase in their numbers as against a predicted decline in their numbers. The reason for this discrepancy in the actual and predicted number is discussed with the help of industrial mix component and local share components.

The negative industrial mix share of -2.25 indicates that the economy of the state has lost nearly 200 UIMS enterprises due to the mix of slow and fast growing enterprises in the UIMS at the national level. Though the OAMEs and DMEs show positive growth, negative growth in the number of NDMEs may be the reason for the overall shortage of the number of enterprises. The UIMS of the state is thus found to be more weighed towards the negatively growing NDMEs.

Regional share component which is a measure of the relative competitiveness of the UIMS of the state economy vis-à-vis the UIMS of the country is found to be 9.24, which is positive. This implies that nearly 900 new enterprises are added to the UIMS of the region during 2000-01 to 2005-06 because of the relative competitiveness of the UIMS of the local economy.

$$\begin{aligned} \text{Change in the number of enterprises in Assam} &= \text{NGS} + \text{IM} \times \text{S} + \text{RSS} \\ -3 &= (-10.9755) + (-2.24902) + 9.241708 \end{aligned}$$

Table 4.18: UIMS Enterprise Data for India and Assam from 2000-01 to 2005-06 (figure in '00)

Enterprises	2000-01	2005-06	Change in enterprises no.	% change in enterprises no.
India				
Total Enterprises	50895	49425	-1470	-2.88
OAME	36072	35041	-1031	-2.85
NDME	10822	10250	-572	-5.28
DME	4002	4133	131	3.27
Assam				
Total Enterprises	380	377	-3	-0.78
OAME	233	219	-14	-6.00
NDME	133	136	3	2.25
DME	14	21	7	50

Source: NSSO 56th and 62nd rounds

Table 4.18.1: National Growth Share Calculation

Enterprises	2000-01 enterprises in Assam	National average growth rate (%)	National growth share
OAME	233	-2.89	-6.72
NDME	133	-2.89	-3.84
DME	14	-2.89	-0.40
Assam's NGS			-10.97

Source: Author's calculation based in table 4.18

Table 4.18.2: Industrial Mix Share Calculation

Enterprises	2000-01 enterprises in Assam	National growth rate of industries (%)	National average growth rate of industries (%)	Industrial mix share
OAME	233	-2.86	-2.89	0.074
NDME	133	-5.29	-2.89	-3.18
DME	14	3.27	-2.89	0.86
Assam's IMxS				-2.25

Source: Author's calculation based in table 4.18

Table 4.18.3: Regional Shift Share Calculation

Enterprises	2000-01 enterprises in Assam	Growth rate of enterprise in Assam (%)	National growth rate of enterprise in Assam (%)	Reiolshare
OAME	233	-6	-2.86	-7.33
NDME	133	2.26	-5.29	10.03
DME	14	50	3.27	6.54
Assam's RSS				9.24

Source: Author's calculation based in table 4.18

4.4.2 Shift Share analysis (SSA) of the Employment in UIMS of Assam

4.4.2 a) *Period from 1994-95 to 2000-01*

National growth component measures the number of jobs created locally due to national economic trends. This is the share of regional job growth that is attributable to the growth of the national economy. The SSA for the region for the period 1994-95 to 2000-01 revealed that the region could have gained a total of 14200 jobs in the UIMS, if the local economy would have grown at the rate at which the UIMS of the national economy is growing (Table 4.19.2). But the UIMS of the region have added only 10100 jobs (Table 4.19). This is an indication of the slow growth of employment opportunities in the UIMS of the region during this period. It is found that except the OAMEs the other two categories of enterprises have added significantly lesser number of jobs than are predicted; e.g. OAMEs have added 7600 jobs against a predicted number of 5100, whereas the NDMEs have added only 2200 against a predicted number of 7100 and the DMEs have added only 300 jobs against a predicted number of 1900. The other two components of SSA will help to analyze why this discrepancy took place between the actual and the potential growth of jobs in the UIMS of Assam.

The overall industrial mix component helps to determine if the regional industry is weighted towards industries that are growing faster or slower than the national average in terms of employment growth. It is the share of local job growth that is attributed to the share of region's mix of industries being analyzed. This component of industrial mix share is worked out to be 7.15 (Table 4.19.2). This implies that industrial mix component share contributes nearly 700 jobs in UIMS of Assam. This 700 IMS jobs are mainly generated in the OAMEs and the NDMEs, DMEs share is found to be negative.

The regional share which describes the extent to which factors unique to the local area have caused growth or decline in regional employment of an industrial unit; is found out to be - 48.81, for the period 1994-95 to 2000-01, which implies that due to the lack of competitiveness of the UIMS of the region, the region have lost nearly 4800 jobs during the period. The NDMEs and DMEs are the major contributors to the job losses.

$$\begin{aligned} \text{Change in employment in Assam} &= \text{NGS} + \text{IMxS} + \text{RSS} \\ 101 &= 142.6869 + 7.148084 + (-48.8135) \end{aligned}$$

Table 4.19: Employment Data for the UIMS of Assam and India (figures in '00)

India				
	1994-95	2000-01	Change in employment	% change in employment number
Total Employment	110766	130951	20185	18.22
OAME	48183	59141	10958	22.74
NDME	30571	36287	5716	18.69
DME	32011	35522	3511	10.97
Assam				
Total Employment	783	884	101	12.89
OAME	285	361	76	26.6
NDME	393	415	22	5.59
DME	105	108	3	2.85

Source: NSSO 51st and 56th rounds

Table 4.19.1: National Growth Share Calculation (figures in '00)

Employment	1994-95 employment in Assam	National average growth rate (%)	National growth share
OAME	285	18.22	51.93
NDME	393	18.22	71.61
DME	105	18.22	19.13
Assam's NGS			142.68

Source: Author's calculation based on table 4.19

Table 4.19.2: Industrial Mix Share Calculation (figures in '00)

Employment	1994-95 employment in Assam	National growth rate of employment (%)	National average growth rate of employment (%)	Industrial mix share
OAME	285	22.7	18.22	12.88
NDME	393	18.7	18.22	1.87
DME	105	10.97	18.22	-7.6145
Assam's IMxS				7.15

Source: Author's calculation based on table 4.19

Table 4.19.3: Regional Shift Share Calculation

Enterprises	1994-95 employ- ment in Assam	Growth rate of employment in Assam (%)	National growth rate of employment in Assam (%)	Local share
OAME	285	27	22.74	11.18
NDME	393	5.6	18.7	-51.48
DME	105	2.86	10.97	-8.51
Assam's RSS				-48.81

Source: Author's calculation based on table 4.19

4.4.2 b) *the period from 2000-01 to 2005-06*

SSA for the period 2000-01 to 2005-06 shows that the national growth share for the regional economy stands at -7.46 (Table 4.20.1). This implies Assam would have lost nearly 700 jobs if the rate of growth of the UIMS of the state would have been the same as the nation as a whole. However, it is found that the region instead of experiencing a decline in employment has created almost 8600 new jobs in the sector (Table 4.20), which is a pointer to the fact the employment growth in the region has been faster than the all India average. The major contributor to the employment growth had been the NDMEs and the DMEs which have added positively to the employment numbers against a predicted fall; (NDMEs added 900 jobs against a predicted falling number of 300 and DMEs added a magnificent of 10700 jobs against a predicted negative number of 100).

The IMxS is found to be - 23.1326, which implies the region as a whole has lost almost 2300 jobs because of the slower growth of employment opportunities in UIMS. This slow growth is mainly apparent in OAMEs and NDMEs. DMEs

however are growing at a much higher rate than the national average growth rate of the IMS sector as a whole.

The relative competitiveness of the local economy during this period has added nearly 11600 jobs in UIMS of the region. This competitiveness is apparent mainly in the NDMEs and the DMEs of the region.

$$\begin{aligned} \text{Change in the number of employment in Assam} &= \text{NGS} + \text{IMxS} + \text{RSS} \\ 86 &= -7.46618 + -23.1326 + 116. \end{aligned}$$

Table 4.20: Employment Data for the UIMS of Assam and India (figures in '00)

India				
Employment	2000-01	2005-06	Change in employment no.	% change in employment no.
Total Employment	130951	129845	-1106	-0.84
OAME	59141	56660	-2481	-4.19
NDME	36287	33954	-2333	-6.43
DME	35522	39231	3709	10.44
Assam				
Employment				
Total Employment	884	970	86	9.73
OAME	361	331	-30	-8.31
NDME	415	424	9	2.17
DME	108	215	107	99.07

Source: NSSO 56th and 62nd rounds

Table 4.20.1: National Growth Share Calculation (figures in '00)

Employment	2000-01 employment in Assam	National average growth rate (%)	National growth share
OAME	361	-0.84	-3.05
NDME	415	-0.84	-3.50
DME	108	-0.84	-0.91
Assam's NGS			-7.466

Source: Author's calculation based on table 4.20

Table 4.20.2: Industrial Mix Share Calculation (figures in '00)

Employment	2000-01 employment in Assam	National growth rate of employment (%)	National average growth rate of employment (%)	Industrial mix share
OAME	361	-4.20	-0.84	-12.12
NDME	415	-6.43	-0.84	-23.19
DME	108	10.44	-0.84	12.18
Assam's IMxS				-23.13

Source: Author's calculation based on table 4.20

Table 4.20.3: Regional Shift Share Calculation

Enterprises	2000-01 employment in Assam	Growth rate of employment in Assam (%)	National growth rate of employment in Assam (%)	Local share
OAME	361	-8	-4.20	-14.83
NDME	415	2.16	-6.43	35.66
DME	108	99.07	10.44	95.72
Assam's RSS				116.55

Source: Author's calculation based on table 4.20

4.5 Chapter Summary

Thus, it is found that though the growth of the UIMS of the state has slowed down during the later reform period, following the national trend, the local UIMS is showing signs of greater dynamism in terms of growth of enterprise and employment under the categories of NDMEs and DMEs. This has made the overall employment growth in UIMS of Assam higher than the corresponding figure at the national level. The gender distribution of employment is also found to have favourable impact on female workers; as positive growth in their employment is witnessed against a negative growth of male employment. The full time employment in the state UIMS is found to be have higher

growth than the corresponding figure for the UIMS of nation, whereas the part time workers show smaller growth for the state UIMS. The directory manufacturing enterprises are found to attracting more and more employment as evident from higher employment enterprise ratios, especially during the later reform period. This brings into light the huge employment potentialities of this sector. The application of shift share analysis also points to the fact that the UIMS of the state is showing signs of greater dynamism during the later reform period, where the competitiveness of the local economy has increased. The expansion in the urban informal manufacturing sector of the region, especially during the period from 2000-01 to 2005-06, can be regarded as a positive aspect of the informal industrialisation in the state. Especially the expansion of the higher segments of the IMS namely NDME and DME, both in terms of enterprise and employment has proved that the informal sector in Assam too can well be regarded as the engine of growth.

The study of growth dynamics of informal sector is incomplete without a discussion on its productivity. The next chapter explores the productive performance of the Urban informal manufacturing sector of the Assam vis-à-vis India.

NOTES:

1. The indicators are selected on the basis of the data availability for both the state and the centre for the selected time periods.
2. Location quotient compares the regional share of economic activity in a particular industry to the national share of economic activity in the same industry. The result reveals the degree of regional specialization in each industry. If the location quotient for a particular industry is between zero and one, the region is less specialized than the nation, while location quotients greater than one reveal greater specialization of the industry in the local economy than in the national economy. Also, observing location quotients over time show if an industry is becoming more or less specialized in the region (http://www.onedscorecard.org/index.php?option=com_content&view=article&id=120&Itemid=272).
3. *This section is adapted from Michael Ray's Standardising employment growth rates of foreign multinationals and domestic firms in Canada and www.ca.uky.edu/.../files/.../Shift-Share%20Analysis.ppt - United States.*

4. Persons working for less than or equal to half of the normal working hours of the enterprise on a fairly regular basis are considered as part time workers.
5. Full time workers are those who work for more than half of the period of normal working hours of the enterprise on a fairly regular basis (major part of the time when the operation of an enterprise are carried out during a reference period; where last month is used as a reference period by NSSO).



Chapter 5: Productivity of the Urban Informal Manufacturing Sector of Assam vis-à-vis India

5.1 Introduction

The study of the growth dynamics of the informal sector presented in the previous chapter shows that the informal manufacturing sector in Assam is growing. The SSA analysis also confirmed high and positive share of the local economy towards growth of enterprise and employment. However, the study of growth dynamics is incomplete without a discussion on the productivity of this sector. It is generally thought that this sector is confronted with low productivity (Breman 1976). Keeping in view the role played by this sector in generating income and employment, the chapter looks into the productivity performance of UIMS for the economy of Assam and compares it with the performance of the UIMS at the all India level.

5.2 Methodology and Data Source

The productivity in the UIMS of Assam is analysed with the help of both partial and total factor productivities. Productivity is defined as the ratio of the output of a commodity measured in real terms to the one or more of the inputs used, also measured in real terms. Though this definition is a crude one, but captures the essential concept (Pal 2002). Partial productivity is measured in terms of both labour productivity and capital productivity. Partial productivity, more specifically the labour productivity is a measure of the potential consumption (Balakrishnan 2004). Gross Value Added (GVA)¹ is used as the measure of output(Q) which is deflated by the Wholesale Price Index (WPI)² for the manufactured products at all India level to arrive at the real value added³. Gross Fixed Assets (GFA)⁴ is used as to represent the capital input which is deflated by the WPI for machine and machinery tools at all India level. Though it would have been appropriate to

use the WPI for manufactured products and WPI for machine and machinery tools at the state level to deflate the value items of the state, due to unavailability of such data the study used the all India level WPIs to deflate value items both at the national and at the state level. 1994-95 is selected as the base year for the study. Labour input is measured in terms of the total number of workers engaged (L) in various categories of UIMS. Partial productivities are calculated both for Assam and India during early and late reform period and a comparative study is presented thereafter. Partial productivity measures are

Productivity per enterprise = Real Gross value added (GVA) (Q) / Total number of enterprises

= Real GVA per enterprise

Labour productivity = Real Gross Value Added (GVA) (Q) / Total Number of workers employed (L)

= Real GVA per worker

Capital productivity = Real Gross Value Added (GVA) (Q) / Real fixed Assets (FA)

= Real GVA per unit of FA.

Partial productivity measures are supported by total factor productivity growth analysis (TFPG)⁵. TFPG in this study is taken as the difference between the growth rate in value added and a weighted sum of capital, and labour growth rates, the weights being the share of labour and capital in value added respectively (Unni et. al 2001).

$$TFPG = q(t) - w.l(t) - (1-w).fa(t)$$

Where q (t), l (t) and fa (t); represent growth in value added, labour and capital input at time 't' and w and (1-w) represent the shares of labour and capital in value added respectively.

The capital intensity of the UIMS of Assam is also verified by calculating the capital labour ratios for the period under consideration. It is pertinent to look into the capital intensity of UIMS in view of the far-reaching reforms in the industrial and financial sector of the country, which might have induced the smaller firms to invest more capital than labour.

Capital intensity= Real fixed assets used (FA) / Number of Workers employed (L).

The index of efficiency of labour has been computed for the state and compared to the national levels. The index is calculated as the difference between the actual growth rate of labour productivity and the desired growth rate of labour productivity (Kumar 2001). Here actual growth in labour productivity differs from the desired growth in that, the later takes into account the capital intensity while calculating the productivity of labour. If the actual growth is greater than the desired growth; than the index is positive, otherwise it is negative.

$$E_L = (q_i / l_i)^a - (q_i / l_i)^b,$$

Where, $(q_i / l_i)^a$ = Actual growth rate of labour productivity in i^{th} segment

$(q_i / l_i)^b$ = Desired Growth rate in labour productivity $= (k_i / l_i)^* + (q_i / k_i)^*$; or

The desired growth rate of labour productivity in i^{th} segment of the UIMS = Growth in Capital intensity + Growth in capital productivity.

Within the UIMS, which segment is more productive? To know this relative productivities are calculated. Relative productivity per enterprise, relative labour productivity, relative capital productivity and relative capital intensity for each segment of the UIMS of Assam is calculated and are compared to the relative productivities of the all India level. Each type of relative productivities for each segment (OAME, NDME, and DME) in a particular year is calculated by dividing the productivity for each segment by

the total UIMS productivity in that year. The UIMS segments are then classified in to three ranges based on their relative productivities (Sharma and Dash 2006), low (0.1-0.5), medium (0.6 to 0.9) and high (1 and above). The state- relative of productivity levels was determined by dividing the state's productivity level for a particular UIMS segment in a particular year by the all India productivity level of that segment in that year (Mukherjee 2009).

5.3 Partial Productivities in the UIMS of Assam vis-à-vis India

The productivity trends in the UIMS of Assam and India are discussed in Tables 5.1 and 5.2 respectively and depicted graphically through figures 5.1 to 5.4. During the early reform period productivity per enterprise (PPE) for the UIMS of the state increased at a rate of 2.4 percent (from ₹ 39598 to ₹ 45800). Labour productivity (LP) found to have increased at a rate of around 3.2 percent (from ₹ 16309 to ₹ 19712). However capital productivity (CP) showed negative growth of around 11.71 percent during this period (from ₹ 2.21 to ₹ 1.04). Capital intensity showed a positive growth of around 11.89 percent (from ₹ 7375 to ₹ 18816). This implies that intense use of capital has resulted in negative growth in CP and positive growth in LP. Thus the overall positive productivity of the UIMS is the result of the positive labour productivity, which is much influenced by the positive capital intensity. A look into the productive performance of the individual segments of the UIMS of Assam showed that DMEs are the highest productive segment in terms of PPE and LP (Placed in rank 1). They are also the highest capital using segments. However the use of capital was found to be highly inefficient in DMEs, as observed from the lowest CP for these enterprises (Refer table 5.1). The smaller segments of UIMS i.e. the NDMEs and OAMEs had lower PPE and LP as compared to the DMEs. They were also found to be less capital using segments. But capital

productivities in these segments though falling were found to be higher than the DMEs.

This implies that OAMEs and NDMEs used their smaller capital more efficiently.

Table 5.1: Value Added per Enterprise, Labour Productivity, Capital Productivity and Capital Intensity in the UIMS of Assam from 1994-95 to 2005-06 (value in ₹, growth in %)

	1994-95	2000-01	2005-06	Early reform growth	Late reform growth	Overall growth
Productivity per enterprises (PPE)						
OAME	21139	24234.04	33522.42	2.30 (3)	6.70 (3)	4.28 (3)
NDME	56390	69173.19	112859.1	3.46 (2)	10.28 (2)	6.51 (2)
DME	125705	182751.5	405025.9	6.43 (1)	17.25(1)	11.22 (1)
All	39598	45800.25	83262.8	2.454829	12.69	6.99
Labour Productivity (LP)						
OAME	13528	15664.91	22210.52	2.47 (3)	7.23 (3)	4.61 (3)
NDME	18010	22228.23	36332.56	3.56 (2)	10.32 (2)	6.58 (2)
DME	17490	23540.42	40403.04	5.07 (9)	11.40 (1)	7.90 (1)
All	16309	19712.08	32406.4	3.20	10.45	6.44
Capital Productivity (CP)						
OAME	2.54	1.13	0.921	-12.5 (2)	-4.12 (3)	-8.82 (3)
NDME	2	1.03	1.172	-10.38 (1)	2.42 (2)	-4.77(1)
DME	2.5	0.91	1.072	-15.47 (3)	3.28 (1)	-7.41(2)
All	2.21	1.04	1.076	-11.71	0.55	-6.33
Capital Intensity (K/L)						
OAME	5317.703	13764.1	24173.1	17.17 (2)	11.92 (1)	14.75 (2)
NDME	8970.125	21379.22	30982.91	15.57 (3)	7.70 (3)	11.92(3)
DME	6998.435	25852.14	37646.36	24.33 (1)	7.80 (2)	16.52(1)
All	7375.853	18816.16	30109.07	16.89	9.85	13.64

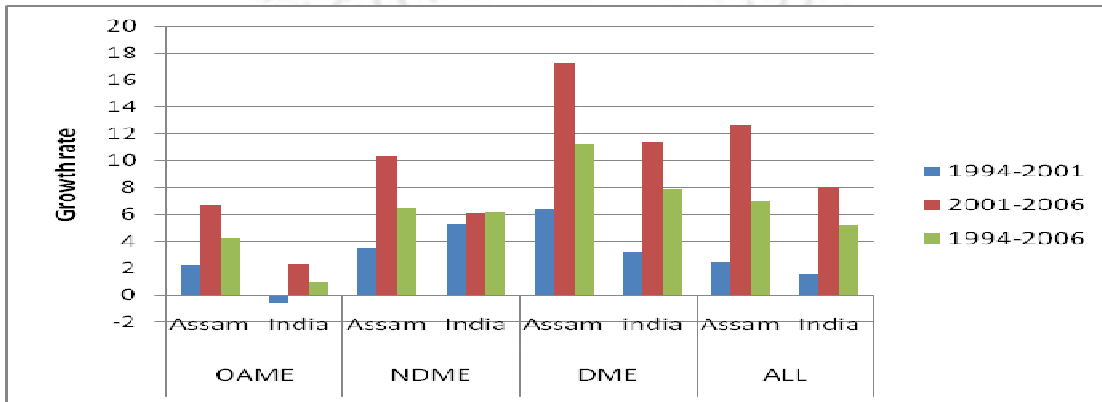
Source: Author's calculation based on NSSO report no. 434, 477 and indiastat.com

Note: The figures in the parentheses show the ranks occupied by different enterprises according to the respective productive criteria.

The productivity performance of the UIMS at the all India level too showed a similar pattern during this period (Table 5.2). PPE, LP and CI all were found to be growing positively, whereas capital productivity showed a negative growth. Segment wise productivity analysis shows that at the national level NDMEs recorded highest

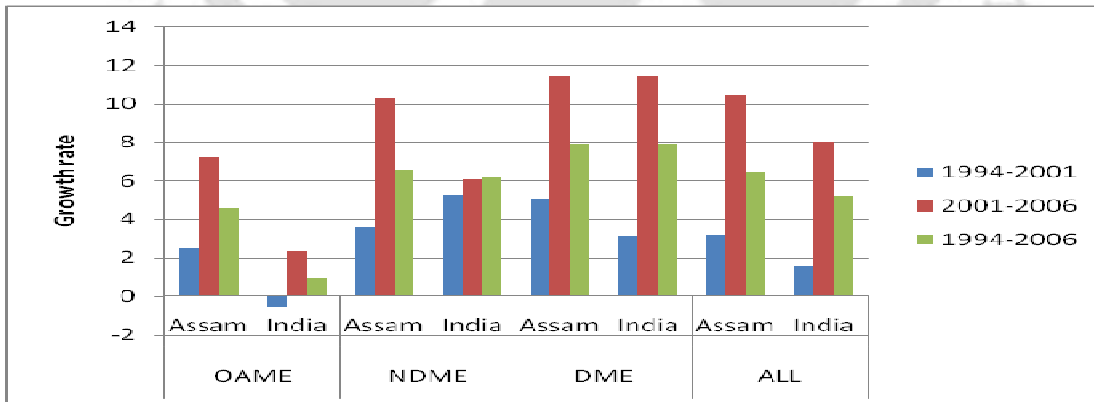
growth in PPE, LP and CI. CP in NDMEs showed least growth, whereas in DMEs it was the highest. A Comparison of the productivity performances of the state with that of all India revealed that growth in PPE, LP and also the CI growth in the state was higher than the national average during the early reform period. The fall in CP growth was found to be steeper in Assam as compared to India.

Figure 5.1: Growth in Productivity per Enterprise in UIMS of Assam and India from 1994-95 to 2005-06



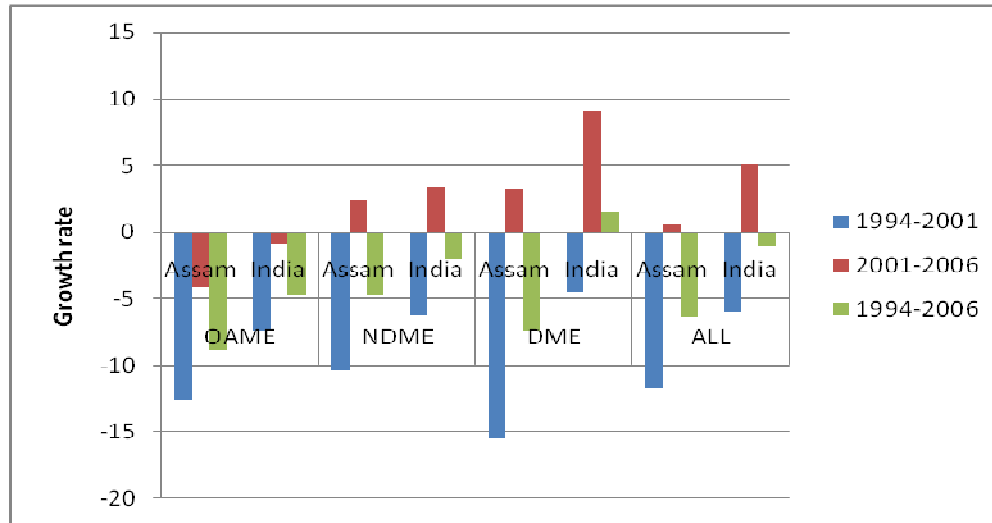
Source: Table 5.1 and 5.2

Figure 5.2: Labour Productivity Growth in UIMS of Assam and India from 1994-95 to 2005-06



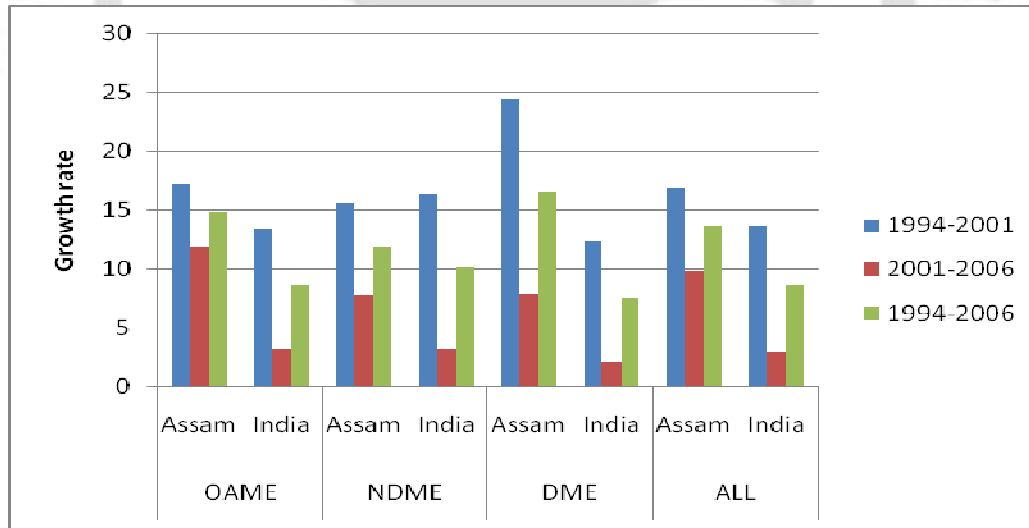
Source: Table 5.1 and 5.2

Figure 5.3: Capital Productivity Growth in UIMS of Assam and India from 1994-95 to 2005-06



Source: Table 5.1 and 5.2

Figure 5.4: Capital Intensity Growth in UIMS of Assam and India from 1994-95 to 2005-06



Source: Table 5.1 and 5.2

Segment to segment comparison of productivities between the UIMS of the state and the UIMS of the country showed that, growth in PPE, LP and CI in OAMEs and DMEs of the state UIMS were higher than the all India level. Growth in capital intensity

in the state DMEs (24.33 %) was almost doubles the capital intensity growth of the DMEs of the country (12.34 %). State NDMEs showed lower growth in PPE, LP and CP compared to the NDMEs at the all India level. The fall in capital productivity in each segments of the state UIMS was steeper than that of the India. This implies that higher growth in capital intensity could not result in higher growth in capital productivity and the UIMS of the state is characterised by the inefficient use of capital.

The later reform period (2000-01 to 2005-06) showed even faster growth in productivity of the UIMS of the state. PPE grew almost 6 times and LP grew more than 3 times than the early reform period (Table 5.1). Growth in CI slowed down during this period, which is associated with the marginal but positive growth in CP. This implies that the UIMS of the state had been able to use the existing capital more efficiently during this period. Analysing and comparing the productivities of the various UIMS segments within the state it is found that state DMEs are the most productive segment in terms of PPE, LP and CP and OAMEs are the least productive segment. The overall positive capital productivity growth in the state UIMS is the result of the positive capital productivities in NDMEs and DMEs. OAMEs which experienced highest growth in capital intensity were associated with negative capital productivity growth. This shows there is a negative relation between the use of capital and its productivity. The UIMS at the all India level too experienced a rapid growth in productivity, where PPE grew by almost 8 times and LP by approximately 5 times the previous period (Table 5.2). Growth in CP showed positive growth and capital intensity growth slowed down. As in the case with the state, the DMEs at the national level were proved to be the highest productive segment in the UIMS.

Comparing the productivities of the state UIMS with that of the UIMS of the country as a whole, it is found that as in the case with the early reform period, in the later reform period also, the UIMS of the state showed high growth in PPE, LP and CI (Table 5.1 and Table 5.2). CP growth in the state UIMS (0.55%) was, however found to be significantly below the national level (5.16%). Comparing the productivities of various segments of the state UIMS with that of the UIMS of India shows that, growth in PPE in each of OAMEs, NDMEs, and DMEs was higher than the UIMS segments of the country.

Table 5.2: Value Added per Enterprise, Labour Productivity, Capital Productivity and Capital Intensity in the UIMS of India from 1994-95 to 2005-06 (value in ₹, growth in %)

	1994-95	2000-01	2005-06	Early reform growth	Late reform growth	Overall growth
Productivity per enterprises (PPE)						
OAME	19648	18964.99	21789.06	-0.58 (3)	2.34 (3)	0.94 (3)
NDME	61214	83250.99	118601.4	5.259 (1)	6.07 (2)	6.19 (2)
DME	221881	267792.3	512347.2	3.18 (2)	11.4 (1)	7.90 (1)
All	47496	52197.71	82892.85	1.58	8.01	5.19
Labour Productivity (LP)						
OAME	11073	11530.05	13366	0.67 (3)	2.99 (3)	1.72 (3)
NDME	18662	24749.12	35512.56	4.81 (1)	7.48 (2)	6.02(2)
DME	24958	30070.56	53544.36	3.15 (2)	12.23 (1)	7.18(1)
All	17181	20222.42	31296.94	2.75	9.12	5.60
Capital Productivity (CP)						
OAME	0.911	0.565	0.540686	-7.64 (3)	-0.89 (3)	-4.63 (3)
NDME	0.757	0.514	0.609394	-6.22 (2)	3.42 (2)	-1.95 (2)
DME	0.780	0.592	0.916856	-4.50 (1)	9.14 (1)	1.47 (1)
All	0.805	0.557	0.716648	-5.96	5.16	-1.05
Capital Intensity (K/L)						
OAME	12142.03	25805.88	30146.29	13.38 (2)	3.15 (1)	8.61 (2)
NDME	24651.31	60850.59	71066.57	16.25 (1)	3.15 (2)	10.10 (1)
DME	31979.27	64297.73	71209.87	12.34 (3)	2.06 (3)	7.54 (3)
All	21327.91	45955.66	53256.63	13.64	2.99	8.67

Source: Author's calculation based on NSSO report no. 434, 477 and indiastat.com

Note: The figures in the parentheses show the ranks occupied by different enterprises according to the respective productive criteria.

LP in each of the UIMS segments of the state too showed higher productivity than the all India UIMS, with the exception of the state DMEs, where the LP is slightly below the DMEs of the India. Growth in capital intensity was found to be higher in the UIMS segments of the state than that of the country. CP in the various UIMS segments of the state was found to be lower than the various segments of the country's UIMS.

For the entire study period (1994-95 to 2005-06) the UIMS of the state showed positive growth in PPE, LP and CI. The negative growth in CP implies that the positive productivity growth in the UIMS of the state is mainly contributed by LP. The positive labour productivity may be caused by the increasing use of capital in the UIMS during the study period. The productivity trend is in line with the all India productivity performances of the UIMS. The UIMS of the state showed better productivity performances as compared to the country as a whole in terms of higher PPE and LP.

Capital was found to be less productive in the state UIMS, as indicated by a sharp fall in its growth compared to the productivity growth in the UIMS of the country. The UIMS of the state was also found to be more capital intensive than the UIMS of the country. This amounts to say that more use of capital has definitely improved the productivity of the UIMS of the state through increasing growth of PPE and LP, but failed to bring about positive growth in capital productivity. Focusing on the individual segments of the UIMS of the state and the country, it is found that, all the individual UIMS segments of the state registered higher growth in PPE and LP. Growth rate of capital intensity was also found to be high in these segments. Higher use of capital may thus be a strong reason for the positive productivity performances of the UIMS of the country as well as in the state.

5.4 Relative Productivities in the State UIMS vis-à-vis all India UIMS

It is observed from the calculated partial productivities that various UIMS segments are not equally productive. Relative productivities are calculated for each of the UIMS segments of Assam and India and then are classified according to their relative productivity range. Considering the productivity of the UIMS as a whole for any period to be 1, relative productivities for all the UIMS segments are calculated. Proceeding in this way it is found that relative productivity per enterprise (RPPE) in Assam is the highest in NDMEs and DMEs followed by the OAMEs for all the periods under study (Table 5.3 and Table 5.4). The OAMEs slipped its position from medium in 1994 and 2001 to low relative productivity range in 2006. Though both the NDMEs and DMEs are placed in the high range category of RPPE, a marked difference is observed in their relative productivities throughout the study period. In terms of the relative labour productivity (RLP), NDMEs and DMEs fell in the high range and OAMEs fell in the medium range for all the three periods under study. The relative capital productivity (RCP) in OAMEs slipped to the medium range in 2005-06 from its high range in 1994 and 2001. This has caused the RPPE for the OAMEs to fell to the low range in that year. DMEs continue to be relatively more capital productive during the study period, with a marginal fall in it during 2000-01.

Table 5.3: Relative Productivity per Enterprise, Relative Labour Productivity, Relative Capital Productivity and Relative Capital Intensity in the UIMS of Assam during 1994-95 to 2005-06

		RPPE	RLP	RCP	RCI
1994-95	OAME	0.53	0.82	1.15	0.72
	NDME	1.42	1.10	0.90	1.21
	DME	3.17	1.07	1.13	0.94
2000-01	OAME	0.52	0.79	1.08	0.73
	NDME	1.51	1.12	0.99	1.13
	DME	3.99	1.19	0.87	1.37
2005-06	OAME	0.4	0.68	0.85	0.80
	NDME	1.35	1.12	1.08	1.02
	DME	4.86	1.24	0.99	1.25

Source: Author's calculation based on Table 5.1

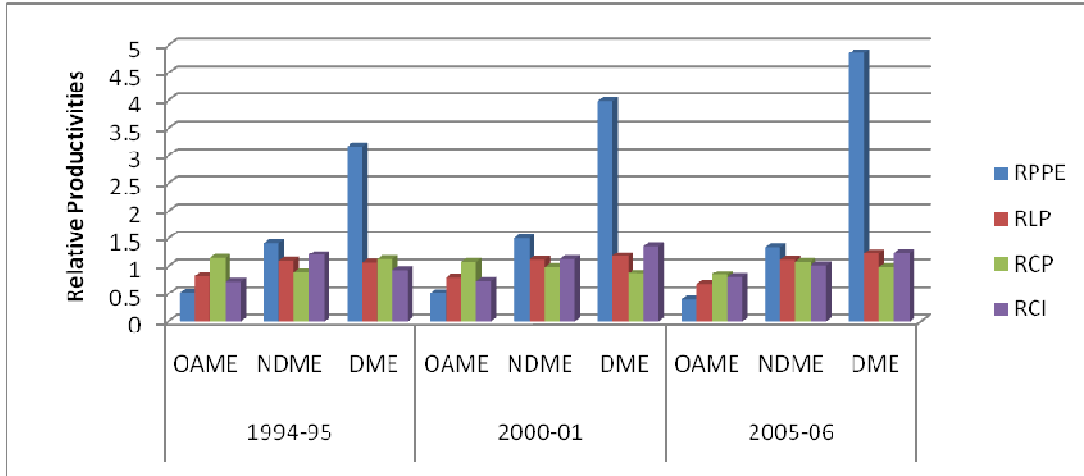
Table 5.4: Classification of the UIMS Segments of Assam based on their Relative Productivities

	RPPE	RLP	RCP	PCI
1994-95				
Low				
Medium	OAME	OAME	NDME	OAME
High	NDME, DME	NDME, DME	OAME, DME	NDME, DME
2000-01				
Low				
Medium	OAME	OAME	DME	OAME
High	NDME, DME	NDME, DME	OAME, NDME	NDME, DME
2005-06				
Low	OAME			
Medium		OAME	OAME	OAME
High	NDME, DME	NDME, DME	NDME, DME	NDME, DME

Source: Classification based on table 5.3

In terms of capital intensity; NDMEs and DMEs were found to be relatively more capital using than the OAMEs, throughout the study period. It is thus observed that over the years the relative labour productivity and relative capital intensity remained unchanged for the different segments of the state UIMS. The fall in the relative productivity per enterprise of OAMEs is mainly because of the fall in its relative capital productivity. The diagrammatic exposition of the relative productivities is given in figure 5.7.

Figure 5.5: Relative Productivities in the UIMS of Assam



Source: Table 5.3

For the UIMS of India there is no change in the RPPE, RLP and RCI for all the three segments of UIMS for all the three periods under study, where NDMEs and DMEs are found to be relatively more productive than the OAMEs (Table 5.5 and 5.6).

Table 5.5: Relative Productivity per Enterprise, Relative Labour Productivity, Relative Capital Productivity and Relative Capital Intensity in the UIMS of India from 1994-95 to 2005-06

		RPPE	RLP	RCP	RCI
1994-95	OAME	0.41	0.64	1.13	0.56
	NDME	1.28	1.08	0.93	1.15
	DME	4.67	1.45	0.96	1.49
2000-01	OAME	0.36	0.57	1.01	0.56
	NDME	1.59	1.22	0.92	1.32
	DME	5.13	1.48	1.06	1.39
2005-06	OAME	0.26	0.42	0.75	0.56
	NDME	1.43	1.13	0.85	1.33
	DME	6.18	1.71	1.27	1.33

Source: Authors' Calculation based on table 5.2

In terms of RCP all UIMS segments were found to be equally productive and were placed in the high range category. In terms of RCI, OAMEs, as expected, were found to be relatively less capital using than the NDMEs and DMEs. Over the study period RLP

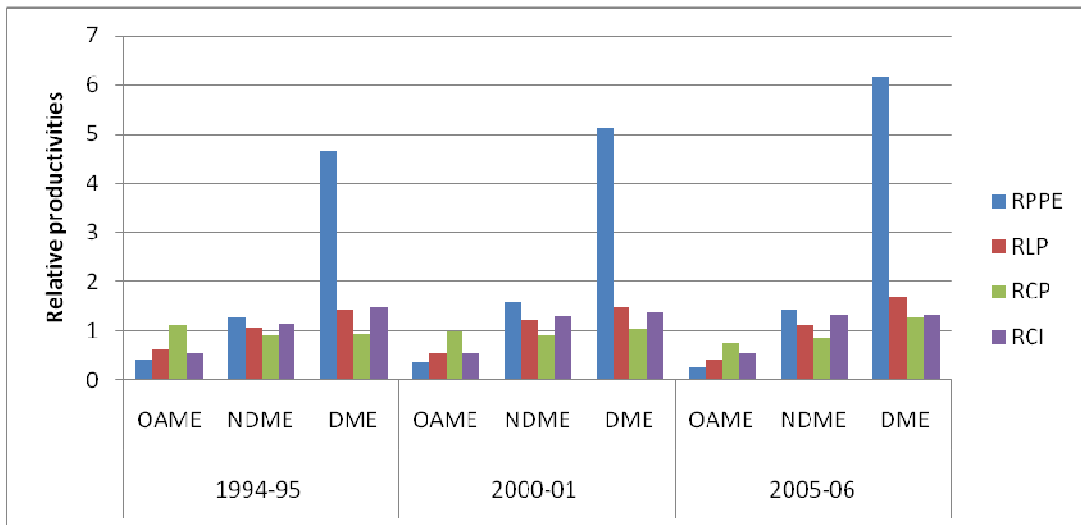
remained unchanged for the NDMEs and DMEs, whereas it fell from the medium range in 1994 to low range in 2001 and 2005 for the OAMEs. It is thus observed that at the all India level RPPE, RLP and RCI were higher in NDMEs and DMEs as compared to the OAMEs. Though the NDMEs and DMEs were put in the high range, the RPPE in DMEs were found to be markedly higher than the NDMEs. In terms of the RLP all the three categories of UIMS were put in the high range category. It is only in 2005 that DMEs became relatively more capital productive than the other two segments of UIMS. However these variations in the RCP (in case of OAME and NDME) and RLP (in case OAME), had no effect on their RPPE. This may be due to their unchanging RCIs. Figure 5.7 illustrates the situation of relative productivities in the UIMS of India graphically.

Table 5.6: Classification of the UIMS segments of India based on their Relative Productivities

	RPPE	RLP	RCP	RCI
1994-95				
Low	OAME			OAME
Medium		OAME		
High	NDME, DME	NDME, DME	NDME, DME, OAME	NDME, DME
2000-01				
Low	OAME	OAME		OAME
Medium				
High	NDME, DME	NDME, DME	NDME, DME, OAME	NDME, DME
2005-06				
Low	OAME	OAME		OAME
Medium				
High	NDME, DME	NDME, DME	NDME, DME, OAME	NDME, DME

Source: Classification based on table 5.5

Figure 5.6: Relative Productivities in the UIMS of India



Source: Table 5.5

5.5 State Relative Productivities

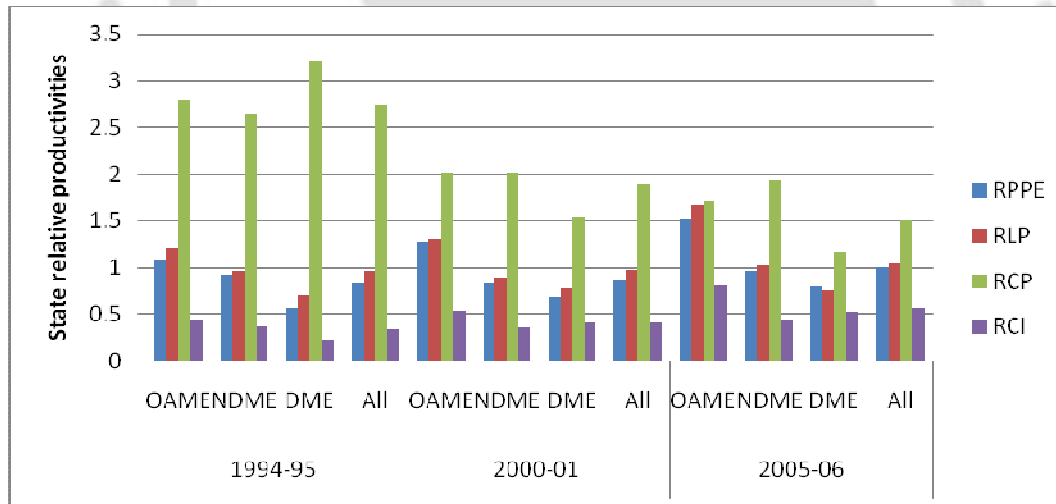
State relative of productivity is a way of direct comparison of productivities of the different UIMS segments of the state to the UIMS segments at the national level. OAMES of the state UIMS showed consistently higher PPE, LP and CP as compared to the OAMES of the national UIMS, throughout the study period (Table 5.7 and Table 5.8). But they were less capital intensive than their national counterpart. It is only in 2005-06 that they showed some improvement in the capital intensity. State NDMEs and DMEs were found to be relatively more capital productive and at the same time relatively less capital intensive than their national counterpart throughout the study period. This points to the fact that the state UIMS used the scarce capital more efficiently, which is welcoming for an underdeveloped state like Assam. In terms of RLP also they were not much far behind than their national counterpart, especially the NDMEs.

Table 5.7: State Relative Productivities

		RPPE	RLP	RCP	RCI
1994-95	OAME	1.07	1.2	2.79	0.43
	NDME	0.92	0.96	2.65	0.36
	DME	0.56	0.70	3.20	0.21
	All	0.83	0.95	2.74	0.34
2000-01	OAME	1.27	1.3	2.01	0.53
	NDME	0.83	0.89	2.01	0.35
	DME	0.68	0.78	1.54	0.40
	All	0.87	0.97	1.88	0.40
2005-06	OAME	1.53	1.66	1.70	0.80
	NDME	0.95	1.02	1.92	0.43
	DME	0.79	0.75	1.16	0.52
	All	1	1.03	1.50	0.56

Source: Author's calculation based on table 5.1 and 5.2

Figure 5.7: State relative productivities



Source: Table 5.7

Table 5.8: Classification of the UIMS segments of Assam based on their State Relative Productivities

	RPPE	RLP	RCP	RCI
1994-95				
Low	DME			OAME, NDME,DME
Medium		DME		
High	OAME,NDME	OAME,NDME	OAME,NDME,DME	
2000-01				
Low				OAME, NDME,DME
Medium	NDME,DME	NDME,DME		
High	OAME	OAME	OAME,NDME,DME	
2005-06				
Low				NDME, DME
Medium	NDME,DME	DME		OAME
High	OAME	OAME,DME	OAME,NDME,DME	

Source: Based on Table 5.7

5.6 Total Factor Productivity Index

The partial productivity measures are not sufficient indicators to know about the efficiency of resource used in the UIMS, as labour productivity is much affected by the changes in the capital labour ratios. TFPG capture the growth in value added not accounted for by the growth in labour and capital input. Table 5.9 shows the total factor productivity in the UIMS of Assam and India, which is depicted graphically in figure 5.8. It is observed that, during the early reform period, TFP recorded negative growth both in the state UIMS (-11.08%) and in the UIMS of India (-8.40%). The later reform period showed a positive growth in TFPG both at the state and the all India level. Like the early reform period, during this period also, TFPG in the state UIMS (2.15%) is lagging behind

the TFPG of the all India UIMS (7.37%). This sharp increase in the TFPG may be the result of the slower growth of the labour and capital input during that period. It is thus clear that the growth in the productivities of the UIMS enterprises during 1994-95 to 2000-01, was mainly due to the positive growth in the labour productivities, both at the state and at the national level, as the capital productivities during this period was negative and the role of technological change as measured by TFPG, was found to be insignificant. During the later reform period, the sharp increase in the productivities of the UIMS enterprises, both at the state and the all India level was found to be a joint effort of increase in labour productivity, capital productivity and the TFPG.

Table 5.9 Total Factor Productivity Growth in UIMS of Assam and India

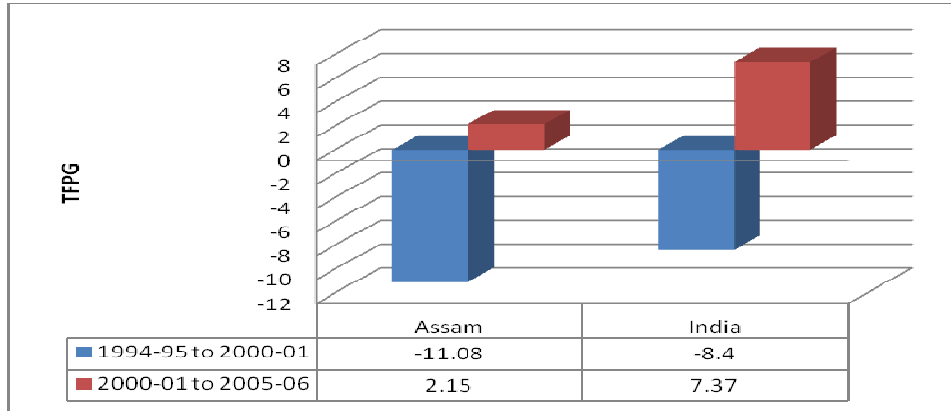
	Growth in Value Added	Weighted* growth in Labour	Weighted** growth in Capital	TFPG
India				
1994-95 to 2000-01	1.58	2.82	12.29	-8.40
2000-01 to 2005-06	9.69	-0.16	12.07	7.37
Assam				
1994-95 to 2000-01	2.45	2.04	16.04	-11.08
2000-01 to 2005-06	12.69	1.87	12.07	2.15

Source: Authors calculation based on table 5.1 and 5.2.

Note: * weight being the share of labour in value added or emolument. (Labour share is taken as the emolument of labour as reported in NSSO report no. 434 and 526)

**weight being the share of capital in value added (1- share of labour).

Figure 5.8: Total Factor Productivities in UIMS of India and Assam



Source: Table 5.9

5.7 Labour Efficiency Index

As labour was found to be stronger over capital in influencing the productivity performance of the UIMS, an attempt is made to find out the efficiency of labour through 'Index of Efficiency of Labour Input' (LEI-Labour Efficiency Index), and make a comparison between UIMS of the state and the country. The LEIs are given in table 5.4. It is noticed that the efficiency of labour declined in the UIMS of India as well as in the state over the period 1994-2001. The individual UIMS segments too showed negative labour efficiency indices both for the country and for the state. It implies that labour productivity did not increase as much as it should have been during the early reform period. On comparing the LEIs in the UIMS of the state with that of the country, it is found that LEIs of the state were higher than the LEIs of the UIMS of the country. This is an indication of the higher labour efficiency in the UIMS of the state than that of the UIMS of the country. All the individual segments (i.e. OAME, NDME, and DME) of the state UIMS showed higher labour efficiency than the individual UIMS segments of the country.

Table 5.10: Labour Efficiency Index (LEI) in UIMS of India and Assam

	$(q_i/l_i)^a$	(q/k)	(k/l)	$(q_i/l_i)^b$	E
1994-95 to 2000-01					
India					
OAME	0.67	-7.64	13.38	5.74	-5.07
NDME	4.81	-6.22	16.25	10.03	-5.22
DME	3.15	-4.50	12.34	7.84	-4.69
ALL	2.75	-5.96	13.64	7.68	-4.93
Assam					
OAME	2.47	-12.5	17.17	4.67	-2.2
NDME	3.56	-10.38	15.57	5.19	-1.63
DME	5.07	-15.47	24.33	8.86	-3.79
ALL	3.20	-11.71	16.89	5.18	-1.98
2000-01 to 2005-06					
India					
OAME	2.99	-0.89	3.15	2.26	0.73
NDME	7.48	3.42	3.15	6.57	0.91
DME	12.23	9.14	2.06	11.2	1.03
All	9.12	5.16	2.99	8.15	0.97
Assam					
OAME	7.23	-4.12	11.92	7.8	-0.57
NDME	10.32	2.42	7.70	10.12	0.2
DME	11.40	3.28	7.80	11.08	0.32
ALL	10.45	0.55	9.85	10.4	0.05
1994-95 to 2005-06					
India					
OAME	1.72	-4.63	8.61	3.98	-2.26
NDME	6.02	-1.95	10.10	8.15	-2.13
DME	7.18	1.47	7.54	9.01	-1.83
All	5.60	-1.05	8.67	7.62	-2.02
Assam					
OAME	4.61	-8.82	14.75	5.93	-1.32
NDME	6.58	-4.77	11.92	7.15	-0.57
DME	7.90	-7.41	16.52	9.11	-1.21
All	6.44	-6.33	13.64	7.31	-0.87

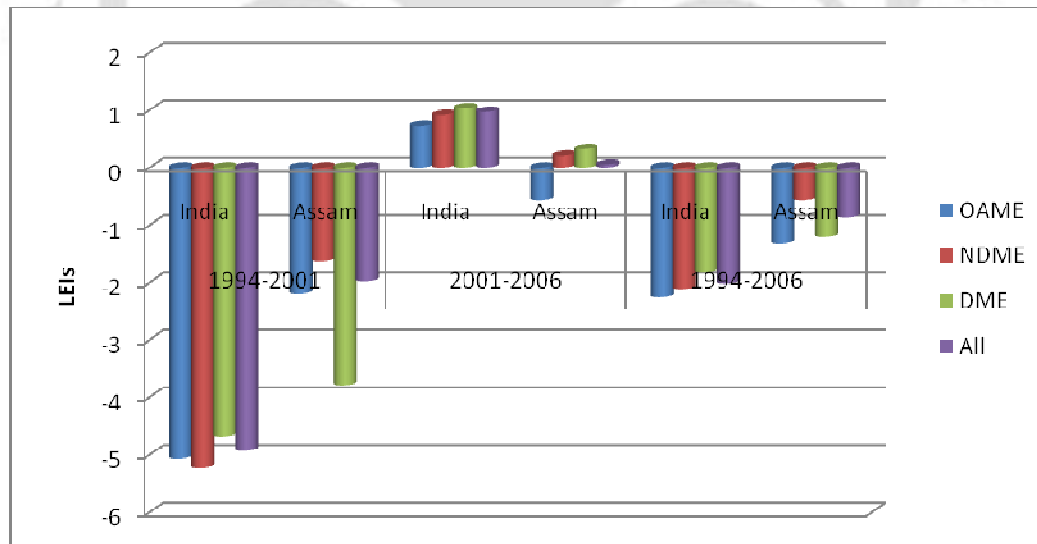
Source: Based on Table 5.1 and 5.2

During the later reform period, the LEIs were positive for the UIMS of the state and the country. The individual UIMS segments also recorded positive LEIs; except for the state OAMEs; where LEI was found negative which indicates slower growth of the actual labour productivity than the expected growth rate. Unlike the early reform period,

labour efficiency in the state UIMS during this period, was found to be lower than that of the UIMS of the country. The individual segments of UIMS of the state too showed lower labour efficiency as compared to the UIMS segments of the country.

For the entire study period (1994-2006), labour was found to be highly inefficient as shown by the negative LEIs for the state as well as for the country, which is a pointer to the fact that labour productivity in the UIMS of the country and the state grew slower than desired and some portion of the labour productivity growth was lost due to inefficient organisation of the labour input. However, the efficiency indices for the UIMS of the state were higher than the efficiency indices of the UIMS of the country as a whole, indicating smaller difference between the actual and desired growth in labour productivities for the state UIMS. This is a positive sign for the UIMS of Assam.

Figure 5.9: Labour Efficiency Indices in UIMS of Assam and India.



Source: Table 5.10

5.8 Chapter Summary

It is thus; found that the growth of productivity per enterprise, labour productivity and intensity of capital use in the UIMS of the state was higher than the all India UIMS during the early reform period. Capital productivity in the UIMS of the state and the country showed negative growth. This negative growth in capital productivity was found to be higher for the state UIMS. State OAMEs and the DMEs higher growth in productivity per enterprise, labour productivity and capital intensity as compared to the OAMEs and DMEs of the all India level. However state NDMEs are found to be lagging behind the NDMEs of the nation. High growth of capital intensity was observed for all the IMS segments for both the state and the nation. However, this has not been accompanied by an increase in capital productivity of the UIMS. The later reform period also portray a similar picture with per enterprise productivity, labour productivity and capital intensity for the state UIMS higher than the UIMS of the country. Capital productivity growth during this period was found to be positive for both the state UIMS and the all India level UIMS. However the growth of capital productivity of the state UIMS was significantly below the UIMS of the nation.

Thus major contributor to the higher productivity per enterprise has been labour productivity resulting from higher capital intensity, which may not be sustainable in the long run. Capital productivity, shows a falling trend during the study period and the fall was steeper for the state UIMS. A negative relation was, thus, observed between the capital productivity and the capital intensity. The rapid growth in the productivity of UIMS of the state and the nation is mainly the result of the productivity growth in the later reform period.

Though labour productivity growth was found to be high and positive, it was used inefficiently in the UIMS of the state and India as well; as evident from the negative labour efficiency indices. This implies that keeping in view the existing stock of capital, actual labour productivity did not increase to the desired level. On comparison, it is found that the labour has been used more efficiently in the UIMS of the state than that of the UIMS at the national level.

Technological progress, as measured by the TFPG, was found to be ineffective in influencing the productivity of the UIMS during the early reform period. Labour productivity was the major growth driver during that period. It is only in the later period TFPG was found to play its role in influencing productivity positively. However, the state UIMS was lagging behind the national UIMS in terms of the technological progress as evident from the large gap in their TFPG figures during the study period.

Relative productivities in the NDMEs and DMEs are found to be higher than the OAMEs both at the national as well as at the state level. When compared to the all India average, the capital productivity for all the UIMS segments in the state UIMS is found to be higher than their national counterpart. At the same time relative capital intensity in the state UIMS is observed to be lower than the all India UIMS. For the state OAMEs productivity per enterprise and labour productivity are found to be marginally higher than the OAMEs at the national level.

The strengthening of the informal sector to improve its productivity will definitely have an impact on the overall productivity enhancement of the economy. This necessitates an understating of its linkage to the formal sector. The next chapter is an attempt to discuss this issue of formal informal sector linkage.

NOTES:

1. Gross value added is defined as the difference between the total value of output and total value of input (NSSO 2001).
2. The Wholesale Price Index (WPI) is the price of a representative basket of wholesale goods.
3. Real value added is the price adjusted value added.
4. GFA (Gross Fixed Assets) is the total amount paid for fixed assets (assets of an enterprise that have a normal life of more than one year from the date of acquisition) used by the business before allowances for depreciation or depletion are subtracted.
5. Details regarding the TFPG as a measure of productivity are available in Balakrishann (2004), Wong and Seng (1997, Ganey (2005).



Chapter 6: Production Linkages between the Formal Sector and the Urban Informal Manufacturing Sector in Assam

6.1 Introduction

The growth and productivity of the informal manufacturing sector is positively affected by its linkage with the formal sector; as, such links helps the informal sector to overcome the financial, managerial and technological skills (Böhme and Thiele 2012). This chapter looks into the pattern of linkages between the formal sector and the UIMS of Assam through a case study of the most urbanised area of Assam; v.i.z. Guwahati.. Formal sector here implies formal manufacturing as well as formal trade sector. Two types of production linkage will be discussed; backward linkage implying purchase of raw materials and intermediate goods from the formal sector and the forward linkage implying sale of the finished products of the informal sector to the formal sector.

6.2 Methodology and Data Source

Here a primary survey of a group of informal manufacturing units is carried out which includes manufacture of food products and beverages, manufacture of textiles, manufacture of wearing apparel, manufacture of fabricated metal products, and manufacture of furniture. This industry group is selected as they together constitute more than 85 percent of the enterprises of the IMS of the state (NSSO 2007). Guwahati is considered as the main sampling area because of the rapid urbanisation and consequent migration of people to this area. Within the city the study is restricted to G.S. Road- the most 'happening corridor' of the city in terms of its rapid expansion in business activities, Six mile area- which is a newly emerging business area and Maligaon, Athgaon, Santipur, Bharalumukh, Kumarpara- the old business cum residential area. To get information on the textile industry the study area is extended to Sualkuchi¹. The survey was carried out

during July and August 2010. A dual criterion is used to label a unit as informal; those employing persons less than 10 and is not registered with district industrial centre (DIC). A simple questionnaire was used for the survey. It was so prepared keeping in view the apathy of the informal sector respondents to such kind of surveys. The questionnaire was intended to draw information on the pattern of linkage between the formal and the informal enterprises as well as the socio economic characteristics of these enterprises and the entrepreneurs. Total number of the enterprises interviewed was 116.

To determine the probability of the existence of a linkage between the formal and the informal sector a logistic regression model is used. A logit model is preferred over Linear Probability Model (LPM) because of the problems² such as i) non normality of the disturbance term ii) heteroscedasticity of the disturbance term iii) possibility of generating estimated Y outside the 0 -1 range iv) inapplicability of the usual test of significance because of the non normal distribution of the disturbance term v) questionable value of R^2 as a measure of goodness of fit. The preference of the logit regression model over the probit model is based on mathematical simplicity, as both the model gives identical results in case of the binary dependent variable (Arimah 2001). The binary dependent variable; linkage, is assumed to be affected by a number of independent variables. These are Registration of the enterprise (Regist), total investment made (Invest), income of the entrepreneur (Income), access to credit facility (Credit), number of workers (Workers) , type of training received by the workers (Train), future expansion plan (Expand), profitability of the enterprise (Profit), whether the enterprises operates on a full time basis (Ftime), whether rent is paid on the premise of operation (Rent) , whether the unit was established after 1991 i.e., after the introduction of NEP. Thus

$$L_i = f(\text{Regist, Invest, Income, Credit, Workers, Train, Expand, Profit, Ftime, Rent, NEP})$$

Where, L_i represents the backward or forward linkage between the formal and the informal sector.

Table 6.1 describes the variables used and their description while estimating the pattern of linkages between the formal sector and the informal manufacturing sector.

Table 6.1: Variables Used to Determine Linkage and their Description

Variable	Definition
Registration	=1 if enterprise is registered*
Investment	Total initial investment (in ₹)
Income	Income of an enterprise (in ₹)
Credit	= 1 if entrepreneur has access to any form of credit facility*
Workers	Total number of workers
Training	=1 if the entrepreneur received vocational or special training for running the enterprise*
Expansion	=1 if the future expansion of the unit is intended*
Profit	=1 if the profit of the unit is increasing in recent times*
Full time	=1 if the enterprise operates on full time basis*
Rent	=1 if the entrepreneur pays rent on business premise*
NEP	=1 if the enterprise was established after 1991*

*0 otherwise

The justification for the variable selected rests on the following reasons. The dependent variable (L_i) pertains to the probability that an informal sector enterprise has backward and forward linkages with the formal sector. The existence of a link takes a value “1” and its absence is coded with “0”.

Registration is a key variable affecting the formal - informal sector linkage. Registration provides some kind of legality and protection for the enterprise which is helpful in forming linkages with the formal units. Registration, thus, is assumed to affect the forward and backward linkage positively. The units which are registered are coded as “1” and absence of registration is coded as “0”.

The financial status of an informal sector unit can affect its links with the formal sector. Informal units with high investment and income help them to maintain linkage with the formal sector. Availability of credit is another important determinant of the probable linkages between the formal and the informal sector. Informal sector units can enhance their purchase from the formal sector if an easy credit base is ready for them. These variables v.i.z., investment, income and credit are assumed to affect the linkage between the formal and the informal sector positively. Investment and income are continuous variables and the credit is a binary variable with its presence coded as “1” and its absence coded as “0”

Number of workers affects the plausible interaction between the formal and the informal sector. The informal units with large number of workers are assumed to maintain better linkage with the formal sector as they are better organised than the units with smaller number of workers.

Trained entrepreneurs are assumed to establish better backward as well as forward linkage with the formal sector as training widens the scope of sale and purchase of these informal units. Enterprises run by the trained entrepreneurs are coded as “1” and those run by entrepreneurs without training are coded as “0”.

The anticipated growth of the enterprise is another important determinant of the probable linkage between the formal and the informal sector. This is measured by the intention for future expansion and their attitude towards profit. Those informal units which feel that their profit is increasing in recent times are more likely to procure raw materials/ intermediate goods from the formal sector to speed up the production (as informal sector is unable to supply in large scale). Such enterprise are coded as “1” as against those who do not feel so. Similarly those units which intend to expand in near

future are assumed to have positive impact on their linkage with the formal sector. Enterprises with the presence of such intention are coded as “1” and the absence of such intention are coded as “0”.

The new economic policy (NEP) introduced in 1991 have significantly opened the economy and this openness is assumed to promote the interaction between the formal and the informal sector. Thus enterprises established after 1991 are coded as “1” and those established before 1991 are coded as “0”.

The enterprises which operate on a full time basis are more likely to establish both backward and forward linkages with the formal sector. This is because the full time operation of the business earns name for the concerned business and the neighbouring formal units may like to indulge in sale and purchase relation with the former. Similarly, having permanent location, as measured by the variable rented premise, helps an informal unit to establish linkage with the formal sector.

The logistic regression model³ is given by

$$\begin{aligned}
 L_i &= \ln (P/1-P) \\
 &= Z_i \\
 &= \beta_1 + \beta_i X_i \dots\dots\dots (1)
 \end{aligned}$$

Solving for P

$$\begin{aligned}
 P/1-P &= e^{\beta_1 + \beta_i X_i} \\
 P &= (1-P) e^{\beta_1 + \beta_i X_i} \\
 P + P e^{\beta_1 + \beta_i X_i} &= e^{\beta_1 + \beta_i X_i} \\
 P (1 + e^{\beta_1 + \beta_i X_i}) &= e^{\beta_1 + \beta_i X_i} \\
 P &= e^{\beta_1 + \beta_i X_i} / 1 + e^{\beta_1 + \beta_i X_i} \\
 P &= 1 / 1 + e^{-\beta_1 + \beta_i X_i}
 \end{aligned}$$

$$P = 1 / (1 + e^{-Z_i}) \dots\dots\dots (2)$$

Where,

P = Probability of presence of linkage

1-P = Probability of the absence of linkage.

L_i = the log of the odds ratio

β_1 = the constant or the intercept

β_i = the parameters to be estimated

X_i = the values of the regressand

$$Z_i = \beta_1 + \beta_i X_i$$

Equation (1) is the cumulative logistic probability function. The estimates of the logit regressions are obtained through an iterative maximum likelihood procedure⁴. The maximum likelihood function in this case is given by

$$f(Y_1, Y_2, \dots, Y_n) = \prod f_i(Y_i) = \prod P_i^{Y_i} (1-P_i)^{1-Y_i} \dots\dots\dots (3)$$

Where Y_i is the observed categorical dependent variable

Taking the natural logarithm of equation (3) the log likelihood function is given by

$$\begin{aligned} \ln f(Y_1, Y_2, \dots, Y_n) &= \sum [Y_i \ln P_i + (1-Y_i) \ln (1-P_i)] \\ &= \sum [Y_i \ln P_i - Y_i \ln (1-P_i) + \ln (1-P_i)] \\ &= \sum [Y_i \ln (P_i / 1-P_i)] + \sum \ln (1-P_i) \end{aligned}$$

Using equation (1) the log likelihood function can be written as

$$\ln f(Y_1, Y_2, \dots, Y_n) = \sum [Y_i (\beta_1 + \beta_i X_i) - \sum \ln (1 + e^{(\beta_1 + \beta_i X_i)})] \dots\dots\dots (4)$$

Equation (4) will be maximised by differentiating it partially with respect to the unknown parameters and setting the resulting expression to zero and then solving the resulting expressions.

6.3 General Background of the Surveyed Entrepreneurs and the Enterprises

The number and percentage of the surveyed enterprises are given in table 6.2 and the descriptive statistics of the enterprise and the entrepreneur characteristics are discussed in table 6.3.

Table 6.2: Number and Percentages of the Sampling Unit in the Total

	Frequency	Percent
Food	30	25.9
Tailoring	19	16.4
Furniture	27	23.3
Steel fabrication	20	17.2
Textile	20	17.2
Total	116	100.0

Source: Field Survey

The highest number of sample units belongs to the category of food enterprises, next stands furniture. Steel fabrication, textile and tailoring industries share equal number of sample units. Around 62 percent of these enterprises are proprietorship business. A very high percentage (83.3%) of the enterprises is run by the male entrepreneurs. The mean age for the workers in the informal sector is found to be 41 years. The minimum entry age of an entrepreneur to the informal sector is found to be 23 years. Aged people above 60 (1.7%) years were also found to be running such units. The entrepreneurs operating in this part of the state were found to be hailing from the native districts, mostly from Kamrup (25%), Nalbari (23.3%) and Barpeta (19%). A very small number of such entrepreneurs are found to be from outside the state such as Bihar (5.2%), Rajasthan (0.9), U.P (0.9) and west Bengal (0.9). A sound literacy level is found among the entrepreneurs

Table 6.3: Frequency and the Descriptive Statistics of the Entrepreneur and Enterprise Characteristics

Variable		Frequency	Percentage	Mean	S.D
Gender	Male	97	83.3		
	Female	19	16.4		
Age	Minimum(23)	1	0.9	41.3	8.8
	Maximum(62)	2	1.7		
Marital Status	Married	87	75		
	Unmarried	26	22.4		
	Spouse died	3	2.6		
Education Qualification	Illiterate	5	4.3		
	Up to primary	14	12.1		
	Up to 10 th class	54	46.6		
	Up to 12 th class and above	42	36.2		
Size of the family	Minimum(2)	6	5.2	4	.99
	Maximum(7)	1	0.9		
No. of dependents	Minimum(0)	6	5.2	1.62	.83
	Maximum(5)	1	0.9		
No. of earning members in the family	Minimum (1)	67	57.8	1.44	.549
	Maximum (3)	3	2.6		
Nature of Business ownership	Family ownership	24	20.7		
	Partnership with others	19	16.4		
	Proprietorship	72	62.1		
Training for running the business	No	95	81.9		
	Yes	21	18.1		
Nature of operation	Part-time	26	22.4		
	Full time	90	77.6		
Registration status	Non registered	44	37.9		
	Registered	72	62.1		
Investment(in ₹)	Minimum (3500)	1	.9	76400	86450.72
	Maximum (400000)	2	1.7		
Income (in ₹)	Minimum (3000)	1	0.9	11720	6296
	Maximum(30000)	2	1.7		
Accessibility to credit	No	67	57.8		
	Yes	49	42.2		
Whether increasing profit	No	32	27.6		
	Yes	84	72.4		
Whether rented premise	No	34	29.3		
	Yes	82	70.7		
Year of establishment	Pre1991	5	4.3		
	Post 1991	111	95.7		
No. of workers	Minimum (0)	11	9.5	2.63	1.708
	Maximum(8)	2	1.7		
Job selection	Family tradition	8	6.9		
	Higher returns than others	20	17.2		
	Being unemployed	75	64.7		
	Others	12	10.3		
Encouraging children to join formal sector	No	40	34.5		
	Yes	42	36.2		
Willingness to join formal sector in future	No	66	56.9		
	Yes	41	35.3		

Source: SPSS results of the field survey

46.6 percent of them have studied up to 10th standard and 36.2 percent have studied up to 12th standard and above. Average family size is found to be of consisting of 4 members with the average size of the dependents 1.62; whereas the number of earning members in the family is 1.44. A significantly large number (95.7%) of the informal units were found to be established after the economic reforms of 1991. Majority (77.6%) of these informal units operate on a full time⁵ basis. Nearly 70 percent of the enterprises carry their business on rented premise. Owner run enterprises or enterprises having no paid worker accounts for 9.5 percent of the total surveyed enterprises whereas OAMEs share is 14.7 percent. Heavy concentrations of enterprises (74%) are found in the category of the NDMEs. Nearly 82 percent of these enterprises are run by the entrepreneurs without any training. Regarding prior work experience, it is found that only 15 percent of the entrepreneurs were engaged in formal sector; the rest are found to be actors of the informal sector itself. Lack of job opportunities seems to be the most important factor for a worker to indulge in an informal sector activity, over other factors such as family tradition or higher returns than other economic engagement. Educational qualification of the workers do not seem to be an important factor for their employment as only 14 percent of the employers wanted their workers to know the minimum reading and writing skills. The owners of the rest of the units wanted their workers to know the basic skills required in the process of manufacturing the respective goods. 62 percent of the informal units were found to be registered under Guwahati Municipality Corporation (G.M.C). Investment made by these informal units varies from a minimum of ₹ 3500 to a maximum of ₹ 400000. Mean investment was found to be ₹ 86185. Relatively very small percentages of these enterprises fall in the very high and very low investment limit (0.9%

and 2.6% respectively). Steel fabrications and some of the wooden furniture units are found to have incurred high investment. 42 percent of the informal units have the accessibility to credit; of which 28 percent approach to the formal sector (banks etc.) and 14 percent takes informal source of credit financing (friends, relatives, past savings etc). Monthly income of the owners of these urban informal manufacturing units varies from a minimum of ₹ 3000 to a maximum of ₹ 30000, with a mean income of ₹ 11720. While enquiring whether their profit is increasing, 72 percent of the enterprises reported to have an increasing trend of profit, because of which intention for future expansion of the unit is high among the entrepreneurs.

6.4 Backward and Forward Production Linkage

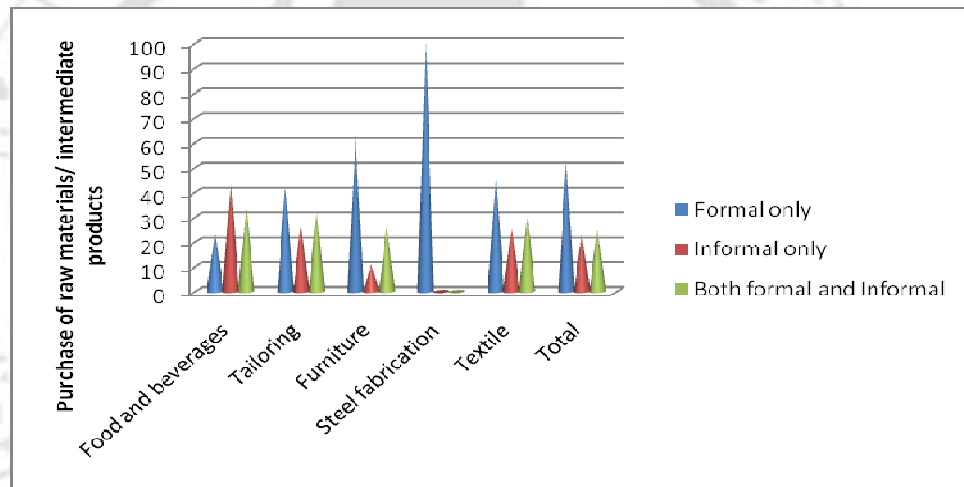
A little more than half of the informal units show existence of the backward linkage between the formal sector (formal manufacturing and formal trade sector) and the informal manufacturing sector of the state. As revealed by the field survey 52.6 percent of the surveyed enterprises do maintain direct backward linkage with the formal sector in terms of the supply of the raw materials, equipment/machinery and consumer goods from the formal sector to the informal sector. Direct backward linkage with the informal sector itself is observed in 22.4 percent enterprises and in 25 percent of the cases industries depend upon both on formal and Informal sources for the raw materials and intermediate goods (Table 6.4)

Table 6.4:
Distribution of Enterprises by Major Source of Purchase of Raw Materials/Intermediate Goods and Final Products from the Formal Sector (in %)

Industry	Formal only	Informal only	Both formal and Informal
Food and beverages	23.3	43.3	33.3
Tailoring	42.1	26.3	31.5
Furniture	62.9	11.1	25.9
Steel fabrication	100	0	0
Textile	45	25	30
Total	52.6	22.4	25

Source: Field survey

Figure 6.1: Distribution of Enterprises by Major Source of Purchase of Raw Materials/ Intermediate Goods and Final Products from the Formal Sector (%)



Source: Table 6.4

It is seen that the pattern of backward linkage vary across the industry groups. The steel fabrication and the wooden furniture industry show heavy dependence on the formal sector for its raw materials / intermediate goods; almost all steel fabrication units and a high 62.9 percent of the furniture units purchase their raw materials / intermediate goods entirely form the formal sector. For the rest of the industries informal sector is also found to be a major supplier of the raw materials/ intermediate goods.

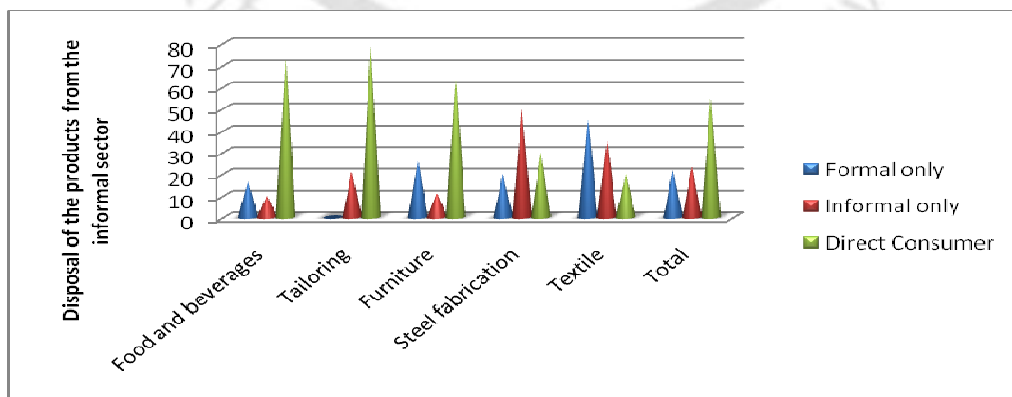
The forward linkage in terms of the sale of the final products by the informal manufacturing sector to the formal sector is found to be weak as only 21.5 percent of the sample enterprises are reported to sell their products directly to the formal sector. Direct forward linkage with the informal sector is maintained by 23.2 percent of the enterprises. Highest number of enterprises (55.1%) sells their products directly to the final consumers. Strong direct forward linkage with the final customers is observed in food and beverages (73.3%), tailoring (78.9%) and the furniture (62.9%) industries. The maximum forward linkage with the formal sector is observed in the case of the steel fabrication industries where 50 percent of the informal fabrication units sell their products to the formal units. Thus the informal manufacturing sector of the state is catering to the demand of the consumers to a large extent.

Table 6.5: Major Sources of Disposal of the Informal Sector Products (in %)

Industry	Formal only	Informal only	Direct Consumer
Food and beverages	16.6	10	73.3
Tailoring	0	21	78.9
Furniture	25.9	11.1	62.9
Steel fabrication	20	50	30
Textile	45	35	20
Total	21.5	23.2	55.1

Source: Field survey

Figure 6.2: Major Sources of Disposal of the Informal Sector Products



Source: Table 6.5

In view of the significant existence of the backward linkage between the formal and the informal manufacturing sector of the state, an attempt is made to estimate the probability of the existence of the backward linkage statistically. The following section discusses the results of the fitted regression model.

6.5 Discussion of the Regression Model

The overall fit of the logistic regression model is tested by ‘Omnibus test of the model coefficient’ and the ‘Likelihood ratio test’ as the Hosmer- Lemeshow test is inapplicable because of the small sample size⁶. The model is found to be a good fit when tested by the ‘omnibus tests of the model coefficient’ (Table 6.6), which predicts the joint capability of all the predictors in the model to predict the dependent variable i.e., backward linkage. The test confirms that one or more of the predictor variables included in the model are significantly related to the response variable.

Table 6.6: Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	108.141	11	.000
	Block	108.141	11	.000
	Model	108.141	11	.000

Source: SPSS result of the field data.

The likelihood ratio test also confirms the goodness of fit of the model as the prediction percentage of the full model⁷ increases from 52.6 percent to 87.9 percent as compared to the null model⁸ (Table 6.7 and Table 6.8). This implies the selected independent variables assume significant importance in influencing the dependent variable.

Table 6. 7: Classification Table of the Null Model ^a,

	Observed		Predicted		
			Backward Linkage		Percentage Correct
			Absence of backward linkage	Presence of backward linkage	
Step 0	Backward Linkage	Absence of backward linkage	0	55	.0
		Presence of backward linkage	0	61	100.0
	Overall Percentage				52.6

a. Constant is included in the model.

Source: SPSS result of the field data

Table 6.8: Classification Table for the Full Model

	Observed		Predicted		
			Backward Linkage		Percentage Correct
			Absence of backward linkage	Presence of backward linkage	
Step 1	Backward Linkage	Absence of backward linkage	48	7	87.3
		Presence of backward linkage	7	54	88.5
	Overall Percentage				87.9

Source: SPSS result of the field data

The fitted logistic regression model explains more than 80% of the variation in dependent binary (backward linkage) as explained by the Nagelkerke R square. (Table 6.9).

Table 6.9: Amount of Variation Explained by the Model

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	52.359 ^a	.606	.809

Source: SPSS result of the field data

The significance of the individual predictors is given by the score test or the Lagrange multiplier test which shows that except the variables training, expansion and NEP; all other predictors are expected to improve the fit of the model (Table 6.10). The

significance of the individual parameters is also tested by constructing correlation coefficient matrix which confirms the results of the score test.

Table 6.10: Score Test

Variables	Score	df	Sig.
Registration	29.354	1	.000*
Investment	33.400	1	.000*
Income	39.576	1	.000*
Credit	32.883	1	.000*
Workers	55.828	1	.000*
Training	.214	1	.644
Expansion	3.013	1	.083
Profit	4.161	1	.010*
Fulltime	31.929	1	.000*
Rent	23.549	1	.000*
NEP	.332	1	.564

*Significant at 1% level of significance
Source: SPSS result of the field data

In Case of the binary regressand models, the expected signs of the regression coefficients and their statistical and/or practical significance are more important than the goodness of fit of the model (Gujarati and Sangeeta 2007). Each slope coefficient is a partial slope coefficient and measures the change in the estimated logit ($\ln P/1-P$), for a unit change in the value of the given regressor (holding other regressors constant). A more meaningful interpretation of the effect size is found in terms of the 'odds ratios' which is the ratio of the probability of the presence of the backward linkages to the probability of the absence of the backward linkage. It describes the effect of the independent variables on the binary dependent. Table 6.11 presents the slope coefficients and the odds ratio.

The estimated regression model (from table 6.11) can be written as

$$\text{Ln (odds backward linkage)} = -3.865 + 0.584 \text{ regist} + .00045 \text{ invest} + .00072 \text{ income} + 0.240 \text{ credit} + 1.167 \text{ workers} + (-1.143) \text{ tranin} + .686 \text{ expand} + .527 \text{ profit} + (-2.329) \text{ ftime} + (-1.211) \text{ rent} + (-10.714) \text{ NEP}.$$

The status of registration is found to be affecting the backward linkage positively and significantly as shown by the positive regist coefficient 0.584. The corresponding odds ratio is 1.794, which shows that registered units are 1.79 times more likely to have backward linkage with the formal units than the non registered units or in other words a registered unit has almost 80 percent more chances of having backward linkage with the formal sector as compared to the non registered units. This confirms the assumption that registration has a positive impact on backward linkage. The correlation between these two variables is also found to be positive and significant (Table 6.12).

It is found that the level of investment affects the backward linkage of an IMS to the formal sector positively and significantly. However the effect size is very small as shown by the odds ratio of just 1.00006. This implies ₹ 1 increase in investment by an informal unit increases the likelihood of having backward linkage with formal units by 1.0006 times as compared to those units which do not increase their investment. The same is the situation with the predictor variable income, where a positive relation is shown between the income and the probability of existence of backward linkage, but the magnitude of the relation is very small (1.00003). This implies high investment and high income have marginal impact on the existence of the backward linkage. Informal units irrespective of their level of investment and income do purchase raw material/ intermediate goods from the formal sector. A reason for the small magnitude change reflected by the model is that they are related to ₹ 1 change in investment and income

thus fail to capture the large changes. The correlation between backward linkage and the level of investment and the correlation between backward linkage and the average monthly income are found to be positive and significant (Table 6. 12).

Access to credit is found to have a positive effect on backward linkage as indicated by the positive credit coefficient 0.240. The odds ratio shows that informal units which have better access to credit are 1.27 times more likely to establish backward linkage than those who do not have such access. The correlation coefficient between the accessibility to credit and backward linkage is significant at 1 percent level of significant and thus confirms the initial assumption.

The model confirms the initial assumption of the positive relation between the number of workers and the existence of backward linkage. The coefficient for this variable is found to be positive and significant. This implies informal units with more hired workers are more likely to establish backward linkage with the formal units. The corresponding odds ratio shows that such units are 3.21 times more likely to have backward linkage when compared with the informal units with fewer hired workers. The correlation between these two is also found to be significant.

Contrary to the initial assumption that training helps in establishing backward linkage, it is found that it has a negative relation with the later. This is indicated by the negative coefficient -1.143 for this regressor. The effect factor as measured by the odds ratio shows that enterprises run by trained entrepreneurs are 0.319 times less likely to establish backward links with the formal units. However, the regression coefficient as well as the correlation coefficient between backward linkage and training are found to be non significant.

Table 6.11: Parameter Estimated and their Log Odds

Variables in the equation	B	Exp(B)
Registration(1)	0.584	1.794
Investment	.00045	1.00006
Income	.00072	1.00004
Credit(1)	.240	1.271
Workers	1.167	3.213
Training(1)	-1.143	.319
Expansion(1)	.686	1.986
Profit(1)	.527	1.693
Ftime(1)	-2.329	.097
Rent(1)	-1.211	.298
NEP(1)	-10.714	.000
Constant	-3.865	.021

Source: SPSS result of the field data

The positive coefficient associated with the variable expansion i.e. intention for future expansion for this variable shows that intention for future expansion affects the existence of backward linkage positively. It is found that those units which intend to expand in future are 1.98 times more likely to have backward linkage with the formal sector. This confirms the initial presumption of the positive association between the backward linkage and the intention for future expansion. However when tested by score test the parameter is found to be non significant. The correlation coefficient between the backward linkage and the intention for future expansion is also found to be non significant ⁹.

The effect of the variable profit contradicts the initial assertion that higher profits tend to improve the linkage. The coefficient for this variable is found to be negative - 0.673, showing that informal units with higher profit are less likely to establish backward links with the formal units. The informal units with higher profit are 0.510 times less

likely to purchase raw materials/ intermediate goods from the formal sector as compared to the informal units with low profit. The negative correlation coefficient between these two variables confirms this finding.

Full time operation of the informal unit is expected to improve its linkage with the formal sector. But contrary to the expectation, it is found that informal units which operate on a full time basis are less likely to purchase intermediate goods from the big formal sector units. The negative coefficient shows the existence of the inverse relation between the dependent and the independent variable. Informal units which operate on a full time basis are 0.158 times less likely to establish backward linkage with the formal sector as compared to the units which do not operate on a full time basis. The negative correlation between the variables is significant at 5 percent level of significance.

The variable rent is found to have negative impact on the existence of backward linkage between the formal and the informal sector as indicated by the negative coefficient -1.483 for this variable. Thus business run on rented premises are less likely to have backward linkage. Interpreting in terms of odds ratio it is found that informal units based on rented premises are 0.227 times less likely to purchase raw materials from the formal sector units, which contradicts the a priori assumption.

Table 6.12: Correlation Matrix of Interdependencies Among the Backward Linkage its Determinants.

	BKDL	REGIST	Invest	Income	Credit	Worker	Train	Expan	Profiit	Ftime	Rent	NEP
BKDL	1											
REGIT	.503**	1										
Invest	.554**	.517**	1									
Income	.584**	.624**	.868**	1								
credit	.532**	.489**	.702**	.659**	1							
Worker	.694**	.583**	.672**	.688**	.631**	1						
Train	.043	.045	-.076	-.100	-.085	-.089	1					
Expan	-.161	-.005	.107	.075	.059	-.197*	.040	1				
Profit	-.238	-.045	-.009**	-.134	-.111	-.268**	.065	.490**	1			
Ftime	.525**	.517**	.374**	.476**	.418**	.558**	.038	-.054	-.072	1		
Rent	.451**	.433**	.346**	.382**	.359**	.503**	-.091	-.016	-.109	.471**	1	
NEP	.053	-.078	-.145	-.003	-.076	-.132	.100	.059	-.025	-.012	-.137	1

** Correlation is significant at 1% level of significance.

*Correlation is significant at 0.05% level of significance.

The effect of new economic policies on enhancing the backward linkage is found to violate our initial assumption. The coefficient for this variable i.e. NEP is found to be negative implying a negative relation between the introduction of economic reforms and the existence of the backward linkages. However its impact effect on backward linkage is very small; only 0.010, which implies the informal units established after 1991 are 0.010 times less likely to have backward linkage than the units established before 1991. This implies the structural change brought about by the reforms of 1991 has failed to bring about any linkage between the formal and the informal sector of the state.

6.6 Chapter Summary

This chapter discusses the existence of linkage between the formal sector and the informal manufacturing of Assam and tries to identify the factors influencing this linkage. To meet the objective, primary data is used collected through a field survey. The surveyed enterprises have a mean income and investment of ₹ 11720 and ₹ 86185 respectively. A large number of these enterprises are NDMEs in nature where male dominate female over proprietorship. GMC seems to be the only registration agency for these enterprises from where they get trade license to continue their operation. Most of the entrepreneurs hailed from the native districts of Kamrup, Nalbari and Barpeta with a few number of entrepreneurs coming from other states like Bihar, Uttar Pradesh, West Bengal and Rajasthan. A sound literacy level is observed among the entrepreneurs. However the educational qualification does not seem to be an important factor for the appointment of the workers. While assessing the nature of linkage between the formal sector and the informal manufacturing sector it is found that the extent of forward linkage between the two sectors is very small. The UIMS units of the state sell a major portion of their final products directly to the final consumers. However, a little more than half of the surveyed enterprises show existence of the backward linkage with the formal sector in terms of the purchase of raw materials and the intermediate goods. The presence of backward linkage between the formal sector and the informal manufacturing sector is found to be affected positively by the status of registration, number of workers, level of investment and income, credit accessibility, intention for expansion and attitude towards profits. Whereas, contrary to prior expectations; training of the entrepreneurs, duration and location of operation and introduction of economic reform, are found to affect the

presence of backward linkage negatively. In other words these factors are likely to reduce the existence of the backward linkage between the formal and the informal sector.

NOTES:

1. Also known as the "Manchester of the East", Sualkuchi is a 'census town' in kamrup district. It is the textile centre of the state.
2. Details available in Gujarati, D.N. and Sangeetha (2007).
3. Details of the logistic regression model are available in Arimah (2001), Gujarati, D.N and Sangeetha (2007).
4. Maximum likelihood estimation method is used as the case of categorical dependent variables could not be solved by the usual OLS method.
5. If a unit operates for more than half of a year that unit is considered as a permanent unit.
6. Hosmer Lemeshow test is applicable for samples of 400 or more; details available in Hosmer & Lemeshow (2000) *Applied logistic regression* (2nd Edition).
7. The full model is the one which includes the selected independent variables.
8. The null model is the model with no independent variable.
9. If a parameter is found to be statistically non significant, it does not mean it has no effect, probably a large sample could have captured the effect (Davies 2009).

Chapter 7: Social Security and the Informal Sector in Assam

7.1 Introduction

Earlier discussion shows that the UIMS is growing in the state of Assam and correspondingly, the number of people depending on it is also showing an increasing trend. From the angle of productivity these workers are found to have major contribution to the value added of the UIMS. However, these are the segments of workers who are outside the social safety net and earn too little to accommodate the minimum living standard in an urban society. Literature also confirms that, though the social security system in India is very old, the security provisions for the informal sector workers is very poor; both in terms of coverage and implementation. The expansion of informal sector, in recent times, has adversely affected employment and income security for the large majority of the workforce, along with a marked reduction in the scale of social welfare/security programmes (Ramesh 2007). While increased returns to skill have been recorded during economic reforms and liberalisation (Rama 2003), the informal sector workers are one of the most severely affected owing to poor labor law protection cover. Providing adequate social safety nets and welfare measures to the growing segment of unorganised sector workers has become an important challenge for the globalised India. Accordingly, during the past decades, Government of India (both at the centre and state levels) have been striving towards designing and implementing more effective measures to strengthen and expand the social protection to the unorganised sector workers. With this background it is essential to study the level of social protection enjoyed by the informal sector

workers operating in the state. The present chapter discusses the social security initiatives for the informal workers in Assam vis-à-vis other Indian states and then an attempt is made to quantify the level of insecurities among the urban informal workers of the state through the construction of the Composite Labour Security Index (CLSI).

7.2 State level Initiatives¹

Besides the centre led schemes (as discussed in chapter 3) a number of social security initiatives have also been taken at the state level. The *Welfare Fund* model of Kerala introduced in 1969 showed considerable innovation in its design and organisation. There are almost 23 welfare boards functioning in Kerala for the informal workers which offer some form of social security at the end of the working life, social insurance in the event of sickness, accident and/or death and a measure of welfare arrangements in the form of assistance for housing, education of children and marriage of daughters. In certain cases where the welfare funds are not in a position to provide old age pension, the state came out directly to provide such pensions from the budgetary fund. This Model with suitable modifications can be replicated in other states of India, as well as in other countries, where there are no social security arrangements for informal sector workers (Kannan 2002, NCEUS 2006). The other southern states of Karnataka, Tamil Nadu and Andhra Pradesh also constitute labour Welfare board for the workers in the informal sector. In Tamil Nadu under the *Annapurna scheme* destitute and senior citizens are given 10 kg's of rice per month free of cost. However, Uttar Pradesh, the largest state of India, lacks specific social security schemes for the unorganised workers. A few social assistance schemes are available for the old aged and the physically handicapped. Punjab and Haryana share

a similar pattern of social security schemes which include old age pension, financial assistance to widows and destitute woman, orphans, victims of accidents and pension to the physically handicapped persons. Both the states are maintaining the labour Welfare Boards which are running various welfare programmes for the informal workers of the states including cash assistance for daughter's marriage, the scholarship for children of the industrial workers, reimbursement of computer education expenses etc. Government of Gujarat has been maintaining a *Rural Workers Welfare Board*, under which four insurance schemes are in operation which include group insurance for landless agricultural labourers, fisherman and forest workers and salt workers. Another *Shramik Suraksha Scheme* has been maintained by the government for the rural and the urban informal workers. The government of Maharashtra has constituted the *Mathadi Worker's Welfare Board* for providing social security measures for the workers engaged in loading and unloading of goods. This includes regulating the conditions of work, providing health care facility for the workers and their families, housing facility and promoting education among the mathadi workers families. Government of Madhya Pradesh has taken a systematic step for providing social security to the unorganised workers by constituting an *Unorganised Sector Workers Committee* in 2001 to study the working conditions and social security needs for the informal workers of the state and make recommendations for improving the same. On the basis of its recommendations two separate welfare boards for rural and urban unorganised workers are constituted in the state, which will administer two separate welfare funds. The benefits provided under the funds include old age, family and disability assistance, pension, house construction loans, education assistance, marriage assistance, funeral assistance, etc.

The social welfare department of Bihar is running various schemes for the interest of the old aged, women, children and destitute. Some of the schemes are *Mukhyamantri Kanya Suraksha Yojana, Lakshmi Bai Social Security Pension Scheme, Scholarship Scheme for the disabled, Bihar Social Security Pension, Bihar Disability Pension* etc². The effort of the left front government in providing social security to the informal workers is also commendable. The government of West Bengal, for the first time in the country, has introduced a provident fund scheme for the unorganised sector workers in the year 2000-01, on the basis of contribution from the workers at the rate of ₹ 20 per month and the equal amount from the state government. The state government has also introduced a health scheme for these unorganised workers under which money will be paid to the families of the worker who are bed ridden for more than 5 days. A lump sum of ₹ 5000 will be provided to the workers under this scheme for medical reasons. The welfare schemes for the beedi workers include financial assistance for house building and for electrification purposes. Under the schemes for the unorganised construction workers, a worker has to pay ₹ 20 per month and can avail various facilities under this scheme such as medical allowances, pension, accident benefits etc. Allowances are also paid for sending their children to the schools and colleges. Introduced in 2010, social security scheme for the transport workers offers it beneficiaries pension benefit, accident benefit, medical benefit for an annual fee of ₹ 30. Besides these schemes the government of West Bengal has been providing financial assistance for the workers of the closed factories since 1998. The allowance was ₹ 500 per month in 1998; which increased to ₹ 1500 in 2010. Besides this, monthly assistance of ₹ 1000 is provided to every workers during *puja* and *id* (NCEUS 2006). Very similar to the provident fund scheme of the West

Bengal, the government of Tripura has introduced an assisted scheme for unorganised workers (*Asanghatita Shramik Sahayika Prakalpa*) in 2001, which cover all wage and self employed workers between 21 to 55 years in the unorganised sector, whose family income is not more than ₹ 3500 per month.

7.3 Social Security Schemes in Assam

A number of schemes are operative in Assam which ensures the social security and welfare of the people of the state. In July 2005 Government of Assam has decided to implement the *Mukhyamantri Jibon Jyoti Bima Achoni*³, which is a combined health issuance and personal accident insurance for all the citizens of the state in the age group 03-80. The scheme was implemented with the partnership with ICICI Lombard General Insurance, the largest private sector general insurance company in India, and aims to provide health and accident risk insurance coverage at a premium of ₹ 525 crore. The sum assured is ₹ 50000 per person for accidental death and ₹ 25000 for other health related risks. Social Welfare Department was entrusted to implement this scheme. From August 2005 till July 2006 there have been approximately 4205 beneficiaries and ₹ 9 crore has been spent on compensation since the scheme was enforced (CHMI 2011). An amount of ₹ 500 lakh was provided during 2010-2011 for the continuation of the scheme. A new scheme namely *Mukhya Mantrir Mahila Samridhi Achoni* has been introduced by social welfare department for economic upliftment through building capacity of the women weavers of Assam. During the year 2008-09, an amount of ₹ 500 lakh was sanctioned for this purpose. A number of schemes have been in operation in the state for the physically handicapped, which includes special education to the deaf, dumb and blind students. These students are also offered a stipend of ₹ 200 per month along with free food and

textbooks. A health care scheme was introduced in the year 2004-05, with the primary objective of catering to the need of the people attaining 70 years. A onetime grant of ₹ 700 were given to the eligible aged during 2005-06, besides the provision of financial assistance for the purchase of medicine. Around 98, 000 aged were covered till 2007. The amount sanctioned for the scheme was ₹ 600 lakhs during 2010-11. Another scheme called *Sawayamsidha* is in operation since 2001 which mainly targeted for the social and economic empowerment of women through the formation of the self help groups (SHGs) (GOA 2011). During the year 2008-09, around 6000 women are benefitted through 2400 SHGs under this scheme. Under *Swarna Jayanti Sahari Rozgar Yojana*, ₹ 843.27 lakh released to the town committees for generating employment opportunities in town areas .A few new initiatives of the government of Assam includes setting up of a ‘Terrorist Victims Welfare Board’ to look after the family of victims of terrorist violence, particularly widows and children on a sustainable basis and raising the pension of the freedom fighters from ₹ 2500 per month to ₹ 3000 per month (GOA 2007).These are the general welfare schemes maintained by the government of Assam for the weaker and deprived sections of the society. However, no specific schemes for the unorganised sector are available, which is a pointer to the fact that the informal sector workers in the state suffers from social insecurity.

Despite several legislative and programme oriented measures are undertaken to address problems of the workers in the informal sector, the measures have not succeeded in achieving the desired objective partly on account of the ignorance, illiteracy and lack of unionization of the workers on the one hand and the resource constraints of the state on the other (Planning Commission 2001) . The poor coverage

of the prevailing social security schemes along with the limited reach of the benefits of the schemes to the informal workers is a matter of great concern (Asher and Bali 2010). The absence of a direct link between the beneficiaries and the implementing agency has been a major drawback of these schemes. This results in the prevalence of the insecurities among these workers. For the formulation of a proper policy prescription it is necessary to know the intensity of social insecurities. The technique of CLSI is used for this purpose.

7.4 Composite Labour Security Index

CLSI attempts to measure quantitatively the extent of insecurities among the informal sector workers. This index is used by Standing (1999, 2004) to measure the labour security among the organised sector workers in the context of the developed countries. Sen and Dasgupta (2009) have adapted the index to deal with the labour security issues of the workers engaged in the organised sector. Here, the technique is used to quantify the social insecurities among the informal workers of the UIMS of the state.

7.4.1 Methodology and Data Source

The CLSI is constructed for a group of informal workers engaged in industries such as furniture, food and beverages, steel fabrication, textiles and wearing apparels. As per NSSO (2007) report these industry group covers nearly 85 percent of the total informal manufacturing enterprises in Assam and thus assumed to have high concentration of workers in these industries. Besides these industries, while carrying out the field survey mushrooming growth of garages, cycle repairing shops, and electrical equipment manufacturing shops were observed and are included in the study as the miscellaneous enterprise category. A total of 160 informal workers are

interviewed. As the study intends to discuss labour security for the urban informal workers, city of Guwahati is taken as the main area of sampling, which is the most urbanised area not only within Assam but also in the entire north eastern region and as such exposed to a number of informal activities practiced by the migrants to the city from all over the country.

CLSI is calculated as the arithmetic mean of 8 different security indices, by assigning equal weights to each of them. The component security indices are income security, financial security, voice representation security, family support security, work security, job security, education and skill reproduction security and employment security. Each of the security indices are calculated in the same way as the aggregate CLSI is calculated.

1. *Income security:* The welfare of a worker is affected heavily by the income security, which not only implies the adequacy but also the regularity of income. It ensures the current economic status of a labour. The following aspects are considered important while assessing the income security.

- i. ***The minimum wage:*** Whether the worker is getting wages at least equal to the institutionally fixed minimum wage in the country. A worker who earns less than the minimum wage lives in a situation of much stress and strain and deprived of the basic social securities.
- ii. ***Periodicity of wage payment:*** Receipt of wages/salary at short duration (daily/weekly) increases the income security of an informal worker rather than to wait for a longer duration (a month or so), as these employments do not follow any strict employer employee relation and thus the workers can easily be exploited.

- iii. **Regularity of wage:** Regularity in wage affects income security. Irregularity of wages; whether paid daily, weekly or monthly increases income insecurities, whereas regular receipt of wages increase the same.
- iv. **Wage revision:** Wage revision in the recent past can also be used as an indicator of the income security. Wage revisions are considered helpful in maintaining real wages of the workers over time. It also indicates the presence of the collective voice representation rights of the workers.

2. **Employment security:** Employment security has different meaning according to the employment laws of each country ⁴. According to the most commonly used definition, “Employment security means that workers have protection against arbitrary and short notice dismissal from employment, as well as having long-term contracts of employment and having employment relations that avoid casualisation” (Dasgupta 2001). The concept is partly subjective as it depends on the worker’s perception regarding fear of the dismissal from the job, chances of having an alternative employment etc. The following aspects are taken into consideration while measuring employment security

- i. **Whether permanent worker:** A permanent worker has lesser chance of dismissal as compared to the casual labourers.
- ii. **Any other economic engagement:** Workers having other economic engagement are less prone to employment insecurities.
- iii. **Work experience:** An experienced worker has lesser chance of being dismissed for the job as compared to an inexperienced one.
- iv. **Chance of alternative employment:** Chance of alternative employment also reduces employment insecurity for a worker.

3. **Financial security:** As distinct from income security financial security can be used as a safety- nets at times of distress and old age and is measured in terms of

- i. **Savings:** Saving allows families to plan for the future, prepare for the retirement and face the unexpected financial setbacks such as job loss. Saving in the form of purchase of assets provide financial stability to the families.
- ii. **Possession of bank account:** Maintaining a bank account is seen as a form of financial security in the event of financial crisis.

4. **Voice representation security:** It refers to workers ability to express their protest as a collective voice through trade unions. The following aspects are taken into consideration for measuring voice representation security

- i. **Trade union membership:** Having trade union membership, whether inside or outside of the unit, increases the chances of the members to place their say in a way that owners will take note of.
- ii. **Presence of trade union in the unit:** Presence of a trade union inside the unit increases to a greater extent the job security as the union is able to voice its concern regarding matters such as better pay, health and safety rules and regulations etc.
- iii. **Necessity of a labour union:** The necessity a labour union reflects the insecurities and exploitation faced by the labourers in the unit.

5. **Family support security:** Family plays a big role in protecting its members from the uncertainties; especially when they are a part of the informal sector. For a major part of the informal workers, the earning is substantially low to support a big family. Contributions of the family members in the earning process substantially increase the

social security. The following dimensions are considered important to measure the family support security

- i. Whether wife is working
- ii. Whether children are working
- iii. Any other earning member

6. **Work security:** Work security denotes work related security in the organizations that promote workers well being. It includes protection against occupational hazards, diseases, injuries, work related accidents and also protection against work beyond the normal working hours. The following factors are considered important for measuring work security

- i. **Length of the working hours:** Workers working regularly for longer hours, especially in unhealthy conditions, significantly increases the chances of being attacked by various kinds of heart diseases, stress, respiratory problems etc. which severely reduces work security.
- ii. **Bonus for the extra work:** If workers are made to work for longer hours, then they should be well remunerated. Absence of proper remuneration reduces the work security of the workers.
- iii. **Medical allowances:** Provision of allowances for health related problems have positive effects on security status of the workers.

7. **Job security:** Distinct from the employment security, job security indicates the level of an individual's mobility within the job. It indicates the opportunity for a worker to pursue a 'career' (Standing 2004). Whereas employment security refers to the opportunity of a worker to continue in the same. It is calculated by considering

- i. ***Relationship of the employee with the employer:*** A healthy employer employee relationship is the prerequisite for job security
 - ii. ***Chances of promotion in the current job:*** Prospects of promotion enhances the job security of the workers.
8. ***Education and skill reproduction security:*** This is a situation where there is a wide range of opportunities for training, apprenticeship and education to acquire and refine knowledge and competencies. It enables people to develop their capacities and acquire the qualifications needed to exercise socially and economically valuable occupation⁵. The following information are used to evaluate it
- i. **Educational qualification**
 - ii. **Special training**
 - iii. **Whether the parent firm provides special training.**

Each of the security indices are calculated in the same way as the aggregate CLSI is calculated.

$$CLSI = 1/8 \sum I_i, \text{ where } I_i \text{ represents the 8 component security indices.}$$

A description of the variables used is given in the table 7.1 and 7.2

Table 7.1: Variable Used to Discuss the Personal Profile of the Workers Engaged in the UIMS along with their Description

Variable	Description
Personal Profile	
Gender	=1 if male; 2 if female
Age	In years
Native Place (District, Town, Village, State)	
Marital Status	=1 if married; 2 if unmarried and 3 if spouse dead
Number of Children	In numbers
Family Size	In numbers
Status of Residence	=1 if owned; 0 if rented.
Type of Dwelling	=1 if pucca; 0 if kuccha
Number of rooms	In numbers
Electricity connection	= 1if yes; 0 otherwise
Source of drinking water	



Table 7.2: Variables and their description for the calculation of CLSI

Income security	
Above minimum wage	=1 if above 100; 0 otherwise
Duration of wage/Salary payment	= 1, if received daily/weekly, 0 otherwise
Regularity of Payment	= 1 if wage is received regularly; 0 otherwise
Wage revision	= 1 if wage is revised regularly; 0 otherwise
Employment security	
Permanent worker	= 1 if yes; 0 otherwise
Any other economic engagement	= 1 if yes; 0 otherwise
Work experience	=1 if more than 5 years; 0 otherwise
Chances of alternative employment	=1 if yes; 0 otherwise
Job security	
Good relation with the supervisor	=1 if yes; 0 otherwise
Chances of promotion	=1 if yes; 0 otherwise
Education and Skill reproduction security	
Minimum educational Qualification	= 1 if 4 th standard and above, 0 otherwise.
Whether acquired Special training	=1 if yes; 0 otherwise
Whether the parent firm provide special training	=1 if yes; 0 otherwise
Work Security	
Length of the working hours	=1 if ≤ 8 hours; 0 otherwise
Bonus for extra work	=1 if yes; 0 otherwise
Medical allowances	=1 if yes; 0 otherwise
Voice Representation Security	
Union membership	=1 if yes; 0 otherwise
Labour union in the unit	=1 if yes; 0 otherwise
Is unions are necessary	=1 if yes; 0 otherwise
Financial Security	
Bank Account	=1 if yes; 0 otherwise
Savings	=1 if yes; 0 otherwise
Family Support Security	
Wife working	=1 if yes; 0 otherwise
Children working	=1 if yes; 0 otherwise
Any other working member in the family	=1 if yes; 0 otherwise

An attempt is made to look into the security status of the female respondents. The variables used along with the description are given in table 7.3. The questions are

answerable in yes/ No format and are used to form a CLSI only for the female workers surveyed.

Table 7.3: Variables and their Description for the Construction of CLSI for the Women Workers

Variable	Description
Safety in working place	=1 if yes; 0 otherwise
Provision of toilet	=1 if yes; 0 otherwise
Provision for Crèches	=1 if yes; 0 otherwise
Provision for child bearing women	=1 if yes; 0 otherwise
Provision of maternity leave	=1 if yes; 0 otherwise
Equal remuneration with the male worker	=1 if yes; 0 otherwise
Domestic helper	=1 if yes; 0 otherwise

The CLSI range is defined as follows

1. 0.00-0.25; Worst
2. 0.25-0.50; Critical
3. 0.50-0.75; Just above the average
4. 0.75-1.00; very high

7.4.2 Results from the field survey

7.4.2.1 General Profile: An analysis of the sex composition of the sample respondents shows that percentage of female workers (25%) involved in different types of informal manufacturing activities are much lower than the male workers (75%) (Table 7.4). Heavy concentrations of female workers are found in textile industry where almost 70 percent of the workers engaged are female, followed by the wearing apparel industry (22.5%) and food industry (7.5%). In terms of the age composition small percentages of workers fall in the age group of below 18 (1.8%) and above 60 (2.5%). Almost 73 percent of the workers fall in the age group 25 to 45

years. The aged who were found to be working above 60 years are basically because of the poor financial support from the family members. The main reasons for the female working in the informal sector were found to be the death of the prime breadwinner of the family and the insufficient or inadequate income of the family as a whole.

Table 7.4: Frequencies and the descriptive statistics of the workers engaged in UIMS of Assam

Variable		Frequency	Percentage	Mean	S.D
Gender	Male	120	75		
	Female	40	25		
Age	Below18	3	1.87	36.46	10.551
	18-24	15	9.37		
	25-45	118	73.75		
	46-60	20	12.5		
	Above 60	4	2.5		
Literacy	12 th standard and above	4	2.5		
	Up to 10 th standard	32	20		
	Primary	90	56.2		
	Illiterate	34	21		
Marital status	Married	107	66.9		
	Unmarried	45	28.1		
	Spouse dead	8	5		
Number of children	0	47	29.4	1.04	.827
	1	63	39.4		
	2	46	28.8		
	3	4	2.5		
Size of the family	2	17	10.6	3.33	.732
	3	82	51.3		
	4	53	33.1		
	5	8	5		
Status of residence	Rented	114	71.3		
	Owned	46	28.8		
Type of residence	Kuchha	8	5		
	Pucca	152	95		
Number of rooms	2	147	91.9	2.08	.274
	3	13	8.1		
Electricity connection	Yes	154	96.3		
	No	6	3.8		

Source: SPSS results of the field survey

The workers are found to have maintained sound literacy level as 78 percent of the workers are literate; of which 56 percent have studied up to primary level, 20 percent up to 10th standard and 2 percent have studied up to 12th standard. It is encouraging to note that a very high percentage (68%) of the respondents reported to follow the small family norm of having 1 to 2 children. An analysis of the living condition of the workers reveals that almost 72 percent of the workers live in the rented houses, 95 percent resides in *pucca* houses. 92 percent of the workers live in a 2 room house. Electricity connection was found to be available in 97 percent of the houses.

7.4.2. Results from the field survey

Income security: The fixation of the minimum wages is one of the fundamental premises of decent work. In India, the Minimum Wages Act, 1948 provides for fixation and enforcement of minimum wages. The act aims to prevent sweating or exploitation of labour, especially those in the unorganised sector, who are vulnerable to such risks in view of poor skill and low bargaining power. The national floor level of minimum wage has been fixed at ₹ 100 per day w.e.f. November 2009⁶. A very high percentage (81.2%) of the workers reported to have received wages equal to or above the minimum wages. In 77 percent of the cases payments were made on daily/weekly basis, which is an indication of income security, as most of the workers in the informal sector are poor and cannot wait for long to receive wages as they have to meet their daily expenses from their daily income. 94 percent of the workers reported to have maintained regularity of income. However, only 3 percent of the workers enjoy wage revision. The income security index calculated by incorporating all these dimensions was worked out to be 0.71.

Employment security: Employment security has been a crucial challenge in the rapidly changing labour market in the context of a globalised economy. While carrying out the field trip, 67 percent of the sample workers were found to be permanent in nature. Permanency in employment increases the employment security as a very small proportion of workers (29%) were indulged in other economic activities. 61 percent of the workers are experienced workers (having work experience of more than 5 years). When they were asked whether they have got any chances of alternative employment 67 percent of them answered affirmatively⁷. Employment security index calculated from these dimensions of security worked out to be 0.45.

Job security: An analysis of the various aspects of the job security reveals that a very high proportion (90%) of the sampled workers maintained good relation with the supervisor. A very small proportion of the workers (16%) had the chances of promotion within the same job. The job security index scored at 0.53.

Education and skill reproduction security: The index calculated under this worked out as 0.35, which is very low. The component indices are formed by considering the level and access to education and skill. Primary school level education is considered as the minimum educational qualification for the construction of the security index. Almost 78 percent of the workers were found to meet this criterion; of which 6 percent were found to be diploma or degree holder and 18 percent were found to complete their higher secondary level exams. Majority of the workers (86%) were found to be working without undergoing any special training. The workers have found to learn the working skill on the working spot itself. The master craftsman or the master trainer was reported as the source of training for those workers. The

situation is even more distressing when it was found that the firms do not show any interest in imparting skills to their workers. Only in 4 percent of the units the workers were provided with special training by making them to attend workshops related to their industry and this is seen in the textile industry.

Work security: The work security index was found to be as low as 0.32. If a worker remain absent from his work for a few days, he is either driven away or wages for those days were cut, which is really pathetic; especially when a worker gets ill. Further the provision of any kind of medical allowances among the sample respondents was also found to be absent. 66 percent of the workers were reported to work (in normal circumstances) for more than 8 hours a day. They also confirmed that the length of the working hours vary directly to the amount of workload (e.g. during the festive season tailoring and food businesses are on full swing). In 65 percent of the cases the extra work performed by them is well paid in the form of bonus wages.

Voice Representation security: Voice representation security is about having bargaining power of the workers in various spheres of the work such as wage negotiation, negotiation over various benefits and working conditions etc. This is also essential to stop the exploitation that the informal workers are to face because of the casual nature of the work. The voice representation security among the sampled respondents was found to be very poor (0.02). None of the workers interviewed have union membership; but a majority (63%) of them feel the necessity to have such a union in the unit.

Financial security: It is a form of economic security which implies condition of having the resources to support a standard of living now and in the near future. In

terms of the financial security the informal workers were found to be well secured. A very high percentages of workers reported to have bank account (83%) and maintain saving (72%) for the period of contingency. The calculated security index is 0.78.

Family support security: Family and family networks have always been an important source of social security. This is particularly important for that segment of the workers whose income is either irregular or not sufficient enough to provide the needs and wants of the family members. The dimensions selected for its calculation include working wife, working children and any other working member of the family. In 23 percent of the cases the wives of the male workers were found to be economically engaged and in 16 percent of the cases the children of the workers were found to have supported the family incomes. 45 percent of the respondents reported to have been enjoying the income the other family members. When asked the type of the work performed by the family members it was found that most of them were also involved in the informal sector itself. The calculated family support security index was 0.28.

Incorporating all the above indices to form a composite Labour Security index as described earlier results in an index of 0.43, which implies the workers in the urban informal sector of the state are in a critical situation. The informal sector workers need urgent attention in view of the widespread insecurities.

Table 7.5: CLSI and its component Indices.

Security Indices		Values	
Income Security	Income greater than ₹100	0.71	0.81
	Daily/ Weekly Income		0.77
	Regular Salary		0.94
	Wage Revision		0.33
Employment Security	Permanent worker	0.45	0.67
	Other economic engagement		0.29
	Work experience of more than 5 years		0.61
	Chances of alternative employment		0.67
Job Security	Good relation with the supervisor	0.53	0.9
	Chances of promotion		0.16
Education and Skill Reproduction Security	Educational qualification	0.35	0.78
	Special training		0.24
	Accessibility to special training		0.04
Work Security	Length of working hours	0.32	0.33
	Bonus for extra work		0.65
	Medical allowances		0
Voice Representation security	Union membership	0.02	0
	Presence of the labour union in the unit		0.056
	Necessity for a union in the unit		0.631
Financial Security	Bank Account	0.78	0.83
	Maintain saving		0.72
Family Support Security	Whether working wife	0.28	0.23
	Whether working children		0.16
	Any other working member in the family		0.45
CLSI		0.43	

Source: Author's calculation based on field survey

An attempt is made to look into the social security status of the female workers involved in the UIMS of the state and it is found that the security index for the female workers is marginally higher than the workers as a whole. A look into the

component security indices shows that except the family support security all other security indices are higher for the female workers as compared to the total informal sector workforce (including both male and female). This is an indication to the fact that female workers do get involved in the informal sector activities as a last resort for earning the livelihood, in the absence of adequate financial support from the family.

Table 7.6: CLSI for female workers and its component Indices.

Security Indices		Values	
Income Security	Income greater than ₹100	0.743	0.925
	Daily/ Weekly Income		0.75
	Regular Salary		0.925
	Wage Revision		0.375
Employment Security	Permanent worker	0.531	0.55
	Other economic engagement		0.35
	Work experience of more than 5 years		0.45
	Chances of alternative employment		0.77
Job Security	Good relation with the supervisor	0.575	0.975
	Chances of promotion		0.175
Education and Skill Reproduction Security	Educational qualification	0.358	0.85
	Special training		0.1
	Accessibility to special training		0.125
Work Security	Length of working hours	0.38	0.425
	Bonus for extra work		0.725
	Medical allowances		0
Voice Representation security	Union membership	0.08	0
	Presence of the labour union in the unit		0.175
	Necessity of a labour union in the unit		0.425
Financial Security	Bank Account	0.862	0.9
	Maintain saving		0.825
Family Support Security	Whether working children	0.05	0.025
	Any other working member in the family		0.075
CLSI for the Female workers		0.44	

Source: Author's calculation based on field survey

Another index aiming at measuring the safety of the female workers of the UIMS is calculated by taking into account the following factors

- I. Safety in the working place
- II. Provision of crèche
- III. Provision for child bearing women
- IV. Provision of toilet
- V. Equal remuneration with the male counterpart
- VI. Domestic helper.

The calculated CLSI along with the values for their component indices are given below

Table 7.7: Safety Index for the Female Workers of the UIMS of Assam

Component	Values
Safe working place	0.82
Provision of crèche	0
Provision for the child bearing women	0
Provision of toilet	1
Equal remuneration with the male workers	1
Domestic helper	0.17
CLSI	0.5

Source: Author's calculation based on field survey

The index corresponding to the work place safeness is found to be very high 0.82. All the female workers are reported to get equal remuneration with their male coworkers. The toilet facility at the workplace, which is essential for females, is also found to be present in almost all the sampled enterprises. The corresponding security indices on these two dimensions are found to be 1 each. However, none of the informal units are found to provide any facilities for the child bearing women such as maternity leave or casual leave etc. whenever any such emergency arise the concerned female

has to either continue anyway or has to leave the job. None of the units are found to have any provision of crèche, where the working mothers can keep their children while at work. The indices on these counts are found to be 0. These workers are also not able to keep domestic helper because of their high service cost. Only 17 percent of these workers can avail the help from a domestic helper. In the absence of such helper they have to manage both household work as well as the professional work. At the same time, nearly 48 percent of the females were found to carry drinking water from the public tube wells, which are located in a distance of nearly ½ to 1 k.m from their home. This put extra workload on them and severely affects their health. The women engaged in the informal sector are found to manage both the household task and the work outside; which can have harmful impact on their health. The aggregate CLSI work out as 0.5.

7.5 Chapter Summary

Thus it is found that various state governments are making different types of efforts in providing social security to the informal workers of their respective provinces. Especially the welfare fund model of Kerala and the pension scheme of west Bengal can really be considered as the role models for the other Indian states. However the informal workers of Assam are found to face apathy of the state government in getting the desired social security benefits. Not very special initiative could be seen on the part of the state government in providing social security to its informal workers. A number of welfare schemes are, however operational in the state which cater to the welfare needs of the deprived sections of the society including the unemployed, women, children etc. An analysis of the general profile of the workers shows that more males than females are engaged in the UIMS of the state. More than

70 per cent of the workers belong to the age of 25 to 45 years. The workers aged over 60 years are found to be working due to the lack of the financial support from the family. Insufficient family income and the death of the prime breadwinner of the family are the main reasons for the females to get involved in the UIMS. The social security status of the informal workers of the state is found to be in a critical state as indicated by the low CLSI (0.43). However the income and financial security of these workers are found to be well protected as indicated by the corresponding indices of 0.71 and 0.78 respectively. The CLSI for the female workers of the state UIMS works out to be 0.44, which is marginally higher than the total workers (including male and the female) and thus found to have marginally better protection. The safety index for the female workers is found to be 0.5. Female workers in the UIMS of Assam get equal remuneration with the male counterpart and they feel safe at the work place. However they suffer from the inadequate provisions in the stage of child bearing and rearing.

NOTES:

1. Details are available in NCEUS (2006).
2. Details available at social welfare department Bihar <http://socialwelfare.bih.nic.in/>.
3. Achoni meaning scheme.
4. Details available in Sen and Dasgupta(2009).
5. From <http://www.ilo.org/dyn/sesame/SESHHELP.NoteSSI>.
6. Recently w.e.f April 1, 2011, the minimum wage has been raised to ₹ 115 per day. Since the field work was carried out during august-October 2010, ₹ 100 is considered as the minimum wage for the survey.
7. Permanent here imply a worker who works for the majority of the time when the unit is under operation.



Chapter 8: Summary and Conclusions

The study is motivated by the debate, discussions and controversy around the concept of informal sector, especially in the context of the developing countries; in view of the rapid urbanisation of their economies. The sector has proved itself to be an active and integral part of the economies of these countries where a large majority of the workers are getting economic engagement. Research describing the functioning of this sector would provide an important framework for the future investigation of the magnitude and consequences of their expansionary moves. For a better understanding of the informal sector in a country, region specific studies assume their importance as the growth of the sector vary from one region to the other depending upon the factors such as levels of industrialisation, unemployment situation, speed of urbanisation etc. The present study can be considered as a fresh attempt to explore the hidden potentialities of the urban informal manufacturing sector in the industrially poor state of Assam.

8.1 Summary of the Major Findings

Principal findings from the assessment of the growth dynamics of the informal manufacturing sector of Assam vis-à-vis India are listed below

- The urban informal manufacturing sector of Assam is showing the signs of rapid growth, especially in the later reform period (2000-01 to 2005-06).
- Highest numbers of enterprises are found in the category of OAMEs followed by NDMEs and DMEs. However the growth of OAMEs and NDMEs has slowed

down in the later reform period, whereas the state DMEs showed spectacular growth during that period.

- The growth of state DMEs (8.44%) in the later reform period is significantly higher than the growth of the DMEs (0.64%) at the national level. The marginal growth of state NDMEs too (0.44%) is found to be higher than the negative growth (-1.08%) of the of the NDMEs at the national level.
- A comparison of the shares of the individual UIMS segments in the total UIMS enterprises of the state and the country revealed that OAMEs and DMEs of the state have consistently lower share than their national counterpart. The share of the NDMEs in the UIMS of the state is found to be higher than the share of the NDMEs in the UIMS of India.
- Calculated location quotients show that UIMS of the state is experiencing higher concentration of informal enterprises, especially the NDMEs, during the study period than the enterprise concentration of the all India UIMS.
- The share of the UIMS enterprises of the state in the UIMS enterprises of India shows a marginal fall from 0.8 percent to 0.76 percent during the period under study. Highest fall in share is experienced by OAMEs followed by NDMEs. Contrary to this the DMEs of the state experienced remarkably high share in the UIMS of the country.
- NDMEs are the major provider of informal employment followed by the OAMEs. DMEs are found to provide least employment.
- However over the years a changing employment pattern is observed where growth of employment decrease in OAMEs and NDMEs and that in DMEs increase significantly.

- Growth of employment in the UIMS of the country is found to be slower than the employment growth in the UIMS of the state.
- The employment share of the UIMS of the state in the UIMS of the country is found to have increased during the study period (from 0.70 percent to 0.74 percent). This increased share is mainly due to the increasing employment opportunities in the state DMEs.
- A significantly large number of male compared to female are employed in the informal sector of the state and the country as well. However over the study period a positive growth in the share of female employment is observed along with a falling share of male employment.
- Though a lesser percentage of female are employed in the state UIMS compared to all India UIMS, their growth is found to be higher for the informal sector of the state.
- The shift share analysis shows that the relative competitiveness of the state UIMS has increased in the later reform period which has resulted in coming up of more NDMEs and DME resulting in greater employment opportunities.

The above findings satisfy the objective of assessing the growth dynamics of the urban informal manufacturing sector in Assam vis-à-vis India.

Productivity analysis which is an extension of the study of growth dynamics gives the following findings

- While analysing the productivity performance of the UIMS, it is found that the UIMS of the state and the nation is showing positive productivity growth. This growth is mainly triggered by the productivity growth in the later reform period.
- The state UIMS is ahead of the UIMS of the nation in terms of the growth of per enterprise productivity, labour productivity and capital intensity. However growth of capital productivity in the state UIMS is lagging behind the UIMS of all India level both in the early and later reform period.
- Labour productivity has been the driving force for the positive per enterprise growth of the UIMS of Assam and India, which in turn is much influenced by high capital intensity growth.
- Capital intensity growth failed to bring about growth in capital productivity. In fact those IMS segments using capital intensively are found to show poor growth in capital productivity.
- Though labour productivity is growing positively for the entire period under analysis, it was found to be used inefficiently as revealed by the labour efficiency indices which measure the gap between the actual and expected growth in labour productivity. A comparison of the labour efficiency indices of the state and the country shows that efficiency in labour utilisation is higher in case of the UIMS of the state than the UIMS of the country.
- Technological progress as measured by the total factor productivity growth is found to be a passive factor in influencing the productivity performances of the UIMS of the country and the state.

These finding fulfills the objective of assessing the productive performance of the urban informal manufacturing sector of Assam vis-à-vis India.

- The field survey conducted to access the linkage pattern revealed that most of the urban informal manufacturing enterprises are NDME in nature with a large number of enterprises under male proprietorship. These enterprises obtain trade license from the G.M.C to carry their business. Though concentration of the local entrepreneurs (entrepreneurs from within the state) is found to be heavy, a few entrepreneurs from outside the state are also found to be operating in the urban informal sector of the state. The entrepreneurs operating in the informal sector of the state are found to maintain a healthy literacy level. However the level of educational attainment of a worker is not considered as important for his appointment in to the informal unit. These units are found to earn on an average ₹ 11720 per month, with a large variation between the low and high levels of income.
- The backward linkage of these informal enterprises is found to be stronger over forward linkage as more than half of them purchase raw materials and other intermediate goods from the formal sector. Strong forward linkage is observed with the final consumers to whom the informal enterprises sell their products directly.
- Backward linkage between the formal sector and the informal manufacturing sector is found to be affected positively by the status of registration, number of workers, level of investment and income, credit accessibility, intention for expansion and attitude towards profits. Whereas contrary to prior expectations,

training of the entrepreneurs, duration and location of operation and introduction of economic reform, are found to affect the presence of backward linkage negatively.

These findings fulfill the objective of studying the nature of the production linkages between the formal and the informal manufacturing sectors. The corresponding hypothesis that there is linkage between the formal sector and the urban informal manufacturing sector gets only partial acceptance as only backward linkage is found to exist between the two. The backward linkage is found to be affected statistically significantly by the status of registration, level of investment, income, availability of credit, number of workers, intention for future expansion and attitude towards profit. Forward linkage is found to be strong between the urban informal manufacturing sector and the final consumers.

Following major conclusions can be drawn from the assessment of the social security status of the informal workers of the urban informal manufacturing sector of the state

- The social security provision for the workers in the unorganised sector in Assam is lagging behind the other Indian states.
- Higher share of male workers in UIMS than the female workers.
- Almost 75 percent of the workers are engaged in the urban informal manufacturing sector of the state fall in the age group 25 to 45 years. Due to

poor financial support from family people above age 60 are also found to be working in the UIMS of the state.

- The income and financial security among the workers of UIMS are found to be high as indicated by the respective indices of 0.71 and 0.78. This indicates the UIMS workers of the state are enjoying income security in terms of getting equal to or above the minimum wage, getting regular income and getting income at short duration. This helps them to maintain saving for the unforeseen contingencies.
- Though more than 65 percent of the informal workers are permanent in nature, they suffer from inadequate employment security as only 29 percent have a second earning source.
- Almost 90 percent of the workers reported to have maintained good relation with the supervisor. However poor chances of promotion reduce the job security of these workers.
- Despite of maintaining a healthy literacy level, the workers of the UIMS of the state suffer from poor education and skill reproduction security (0.35) which is caused by lack of accessibility to special training.
- The workers are worst sufferers in terms of voice representation security (0.02). The units neither have any trade unions nor are the workers have membership of any other trade unions. But the workers strongly feel the necessity of trade union in the units.
- The security index for the female workers (0.44) is marginally higher than the male workers indicating marginal better protection for the female workers.

- The female safety index (0.5) falls in the range of just above average. This indicates female workers in the urban informal sector of the state enjoy average level of safety and protection.

The above discussion fulfills the objective of examining the social security status of the urban informal workers of the state. The discussion points towards the inadequate social security provisioning for the informal workers. The corresponding hypothesis that the social security of the workers in the informal sector of urban Assam is inadequate is accepted as the calculated composite labour security index falls below the prescribed range.

8.2 Conclusions

Thus it can be concluded that the urban informal manufacturing sector of Assam is showing signs of dynamism compared to the all India average, especially in the later reform period, where the growth in the units under NDMEs and DMEs have paved the way for more and more employment generation in the informal sector of the state. This trend of informal industrialisation is a positive sign for the development of the informal sector of Assam. A sound productive performance is observed in the urban informal manufacturing sector of the state, especially in terms of productivity of the enterprise and labour productivity. This may be caused by the intense use of capital, which may not be sustainable in the long run. Labour was also found to be used more efficiently compared to the all India average. Capital productivity, however, is found to be growing slower than the national average. However the growing urban informal manufacturing sector of the state in the post reform period has failed to establish sufficient forward

linkage with the formal sector. The forward linkage is more prominent with the final consumers. This implies that the demand for the products of the urban informal manufacturing sector arises mainly from the final consumers rather than the formal sector. Backward linkage in terms of purchase of raw materials and other intermediate goods is found to be maintained by a little over half of the informal units. Despite of its growing dimensions, the sector in the state is suffering from lack of proper social security arrangement as indicated by the computed CLSI value of 0.43. At the same time the female workers are found to be marginally better protected as indicated by the CLSI of 0.44. The safety index for females is worked out as 0.5; which indicate that the female workers in the informal sector are safe while at work.

8.3 Policy Suggestions

With the growth of the urban centers in the developing countries of the world, the importance of the informal sectors is sure to grow in the coming days. But without proper protection and legalization of this sector (Heinonen 2008), the actors of this sector will continue to swell the poverty tank of these economies, which will definitely put a question mark on policy of the sustainable development. A few policy suggestions to strengthen the operation of the informal sector are listed below

- ✓ Need more surveys and studies at the government and also at the research level, related to informal sector, which will be helpful for understanding the practical problems facing the sector.
- ✓ Create good quality jobs and improve productivity.

- ✓ More Studies on the constraints faced by the informal economy and initiate policy programmes.
- ✓ Provide training to improve the quality of the informal workers.
- ✓ Adequate provision for female workers who are in the stage of child bearing and rearing.
- ✓ Availability of easy and cheap credit.
- ✓ Enhance legislation and enact the social insurance schemes from lessons learned in other successful states/countries.
- ✓ Improve voice representation with prospect to different roles of unions, governments and employees organisation.

8.4 Limitations of the Research

Some of the limitations of the study, as observed by the researches, are mentioned below

- The study has taken into account only three rounds of NSSO to assess the informal manufacturing sector in the post reform period. Inclusion of a few more rounds definitely would have shown a better trend of growth pattern. However in the absence of relevant information from 66th round carried out during 2009-2010, the study has to rely on the previous NSSO rounds on informal manufacturing sector.
- During the primary data collection through the interview method, it was found that the entrepreneurs were sensitive to the questions pertaining to income and investment, as the reported figures were at variance with the nature and type of the enterprise. With no other options for generating the

required information, the study has to rely on these field generated data. This is the major limitation that may have an implication on the results.

8.5 Further Research Issues

The thesis has shown the hidden potentialities of the informal manufacturing sector of Assam in terms of generating income and employment to the workers of the state. However due to limited scope of the study and constraints regarding time and cost, a full detail field survey could not be carried out. The links between the better labour productivity and the inadequate social security of the workers can be explored in great details. The study has taken the UIMS as a whole and has not taken into account the heterogeneity in them. Whereas consideration of this heterogeneity, may show enlarged scope for some of the UIMS in the state.

In view of the limitations and scope for the further research, whatever conclusions have been drawn at every stage of the study, are subject to criticism and are not all inclusive. This can be considered merely as an exercise to fulfill the objective selected for the study.



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Appendix

Questionnaire 1

Formal Informal Sector Linkages

Name of the Study: Urban Informal Manufacturing Sector in Assam

Area: Nalbari

Date:

Industry: Food

Code:

Name of the Firm:

A. General Profile:

1. Name of the proprietor:
2. Sex: (Male -1 /Female-2)
3. Age:
4. Marital Status: (Married-1/ Unmarried-2/ Spouse died-3/ Separated-4)
5. Number of children:, son.....
Daughter.....
6. Native: District Town
Village..... State.....
7. Educational Qualification: (Illiterate-0/ up to primary -1/ up to class 10th -2/ Class 12th and above-3)
8. Family size (in numbers) :
9. Number of dependent person in the family: Adults..... (Above 60)
Children.....((Below 15)
10. Number of earning member in the family

B. Business Profile:

11. When the business unit was started (pre 1991-0/post 1991-1)
12. What type of product do you manufacture?
.....
13. Whether the unit is (Mobile -0/ Permanently located -1)
14. Type of ownership of the business unit (Family partnership- 1/ Partnership with others- 2/ Proprietorship- 3)

15. How many paid workers are there in the unit?
16. Is there any criteria regarding the educational qualification of an employee? (Yes-1/No -0)
17. If yes; what is it? (Primary education-1 / above primary education-2/Specify-3)

18. Where did you worked prior to the establishment of the unit? (Formal unit -1/ Otherwise-0)
19. Any benefit from this change? (Yes -1/ No-2)
20. If yes, specify the nature of the benefit

21. Have you undergone any kind of training for running this business? (Yes- 1/No- 0)
22. Have you registered your business? (Yes -1/No-0)
23. If yes, Name of the registration authority (s)

C. Financial

24. What is the amount of investment made till date? (in Rs.)
25. Amount of sales per month (in Rs.)
26. Amount of expenses per month (in Rs.)
27. Net earnings per month (in Rs)
28. Do you feel your profit has been increasing in recent times? (Yes-1/No-0)
30. Do you have access to any kind of credit facility? (Yes- 1/No -0)
 If yes, whether it is [(Formal-1/ Informal-2/ both formal and informal-3/ any other (specify)-4)]

31. Do you pay rent on the premise that you have occupied? (Yes-1/No-0)
32. Do you have any plan for the future expansion of the unit? (Yes-1/No-0)

D. Purchase and Sell

33. Who is your principal supplier (From where do you mainly buy the inputs?)

[Households and individuals-1/Formal sector only-2 /Informal sector Only-3/ both formal and informal sector-4]

34. From where do you obtain machinery and other equipments for production?

[Formal enterprises only-1/ Informal enterprises Only- 2/ both formal and informal -3]

35. Who is you principal customer (To whom do you mainly sell the output?)

[Households and individuals-1/Formal sector only-2/ Informal sector only-3/ both formal and informal-4]

E. Subcontracting

36. In the last couple of month, did some of your customer enterprise give you raw materials to transform for them? (Yes-1/ No-0)

If yes, what type of customer is the most important one for you?

[Formal only-1/ Informal Only-2/ both formal and informal-3/ Others (Specify)-4]

37. What is the nature of the product being contracted?

[Intermediate product-1/Final product-2/ A part of the final product-3/ All of the above-4/ Others (specify)-5]

38. Do you feel the process of subcontracting is profitable for your business? [Yes-1/ No-0]

If yes why?

If no why?

F. Others

39. Why did you select this job?

[Family tradition-1/ Higher returns than others-2/ being unemployed-3/ others (Specify)-4]

40. Do you encourage your children into this field? [Yes-1/No-0]

If yes, why

If no why

41. Are you willing to join formal sector in future? [Yes-1/No-0]

If yes, why

If no why

Any other information the respondent may like to add.....

Questionnaire 2

Social Security

Name of the Study: Urban Informal Manufacturing Sector in Assam

Area:

Date:

Industry:

Code:

Name of the Firm:

General:

29. Name of the respondent:
30. Gender: (Male -1 /Female-2)
31. Age:
32. Native: District Town
Village..... State.....
33. Marital Status: (Married-1/ Unmarried- 2/ Spouse died- 3/Separated- 4)
34. Number of children:, son.....
Daughter.....
35. Do your children go to school? (Yes- 1 , No- 0)
36. Family size: (In nos.)
37. What is the Status of your residence (Own-1/ Rented-0)
38. Type of the dwelling (pucca-1/ Kuccha-0)
39. How many rooms are there in the house?
40. Do you have electricity connection at your place? (Yes-1/ No-0)
41. From where do you collect the drinking water?

Social Security Measures:

A. Income Security

1. Whether your income is above Rs. 100/ per day? (Yes-1/No-0)
2. Whether your income is on (Daily basis – 0 / Monthly basis -1/ weekly basis-2)
3. Do you get your wage/salary regularly? (Yes-1/No-0)
4. Have you experienced any kind of wage/salary revision in the recent past?(Yes-1/No-0)
5. Do you have any of the following?
[PF (Provident Fund)- 1/ ESI (Employees State Insurance)- 2/ Gratuity- 3/ None- 0]

B. Employment security

1. Are you a permanent worker in this business unit? (Yes-1/No-0)
2. Any other economic engagement? (Yes-1/ No-0)

3. How long have you been working in the unit? (More than 5 years-1, less than 5 years -0)
4. Do you think you have chances of alternative employment? (Yes-1/No-0)
5. Given the alternative opportunities do you wish to leave the present occupation? (Yes-1, No-2)
6. If yes, reasons thereof

7. C. Job security

1. Whether you maintain good relationship with the supervisor? (Yes-1/No-0)
2. Do you have any chances for promotion? (Yes-1/No-0)
3. How were you recruited to the firm? (Direct recruitment - 0 /Through intermediaries-1)
If through intermediaries specify the nature of the intermediaries

D. Education and Skill reproduction security

1. What is your educational qualification? (Illiterate-0, up to primary -1/ up to class 10th - 2/ Class 12th and above-3)
2. Have you undergone any kind of special training? (Yes-1/No-0)
If Yes, how did you acquired the skill (On the job experience-1, Special training -2)
3. If skill was acquired through special training ,what was the nature of the institute { Government institute-1/ Private institute-2/ others (Specify)-3}
4. Does your firm provide any special training? (Yes-1/No-0)

E. Work Security

1. How long is your daily working hour?(Below 8 hrs-1/ Above 8 hrs- 0)
2. Is there any bonus for extra work? (Yes-1, No-0)
3. Do you get any medical allowances? (Yes-1, No-0)
4. If you could not attend your job for a few days, what is the action taken by the owner? (No action-0/ Salary deduction-1/Overtime work-2/ Fire from work-3)

F. Voice Representation Security

5. Do you have any kind of Union membership? (Yes- 1/No- 0)
6. Do you have a labour union in the unit? (Yes- 1/No- 0)
7. Do you feel the necessity for workers union? (Yes- 0/No- 1)
8. Are you aware of the existence of any such union? (Yes- 0/No- 1)

G.Financial Security

1. Do you have any bank account? (Yes-1/No-0)
2. Do you maintain saving? (Yes-1/ No-0)
If yes, in what form?

H. Family Support Security

1. Is your wife working? (Yes- **1**/No- **0**)
 If yes, where.....
 When did she start working
 Income (Approx)
2. Are your children working? (Yes- **1** / No - **0**)
 If yes, what is the type of job?
 How long do they work in a day?
 Do they find time for study? (Yes- **1**/No -**0**)
 If no, have they left school? (Yes- **1**/ No -**0**)
 How much do they earn in a month (approx) _____
3. No. of dependent members in the family (in nos.)
4. Any other earning member in the family? (Yes -**1**/ No -**0**)
 If yes (Specify) Parents Brothers Sisters others
5. Type of work they do

Nos.	Type of work	Job status	Income per month (approx)
1			
2			
3			
4			
5			

For female respondents only

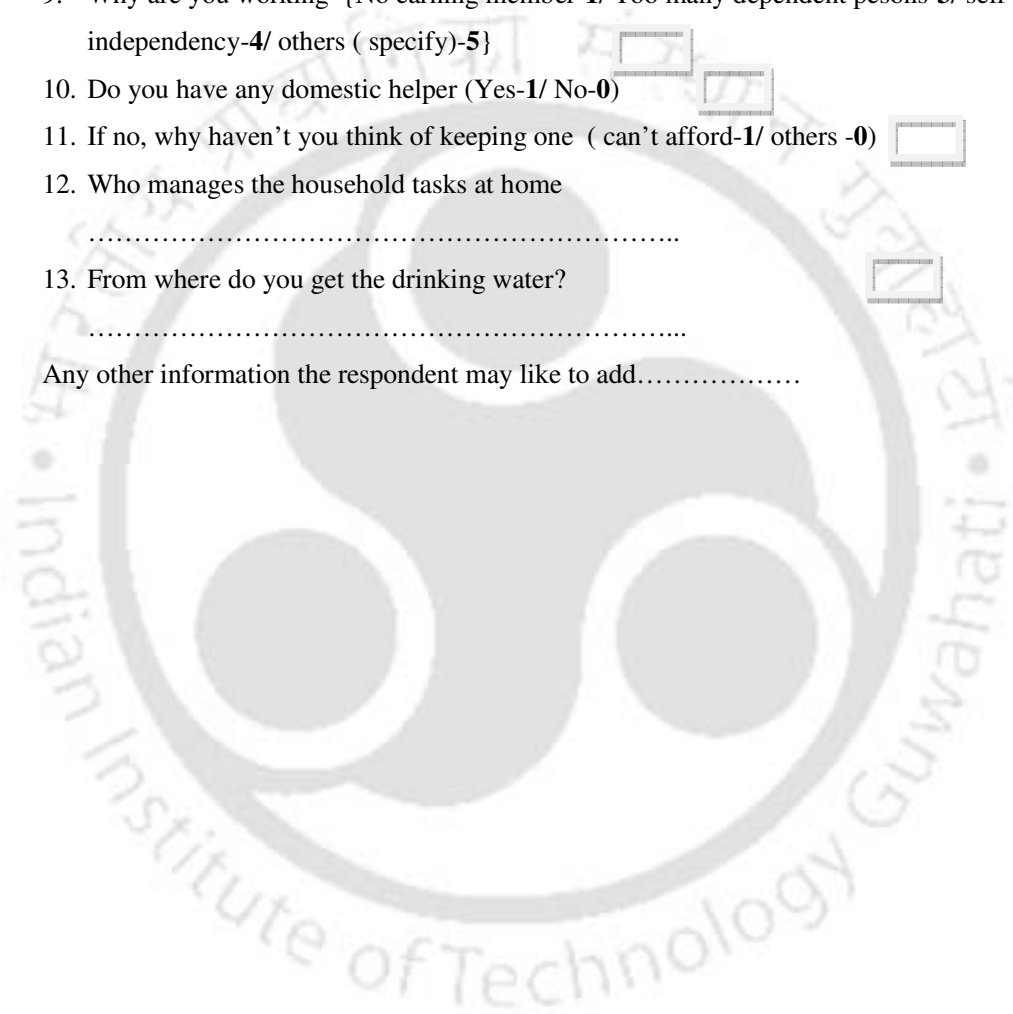
1. Do you feel safe at your workplace (Yes-**1**/ No-**0**)
 If no, Why?
 If yes, Why?
2. Where do you keep your children when you are at work?

3. Is there provision for crèche at the worksite? (Yes-**1**/ No-**0**)

4. Do you have the provision of any kind facility for child bearing workers?(Yes-1/ No-0)
 If yes, what is the nature of the benefit?
 If no, how do you manage your job during that period?.....
 5. Do you have the facility for maternity leave? (Yes-1/ No-0)
 6. Is there any provision of toilet in the worksite (Yes-1/ No-0)
 7. Are you equally remunerated as your male counterpart (Yes-1/ No-0)
 8. If no, what is the approximate difference (in Rs.).....
 9. Why are you working {No earning member-1/ Too many dependent persons-3/ self
 independency-4/ others (specify)-5}
 10. Do you have any domestic helper (Yes-1/ No-0)
 11. If no, why haven't you think of keeping one (can't afford-1/ others -0)
 12. Who manages the household tasks at home

 13. From where do you get the drinking water?

- Any other information the respondent may like to add.....





Publication from the Present Work

1. Majumdar, A., Borbora, S. (2011). Shift Share Analysis and the Urban Informal Manufacturing Sector in Assam. *Economic Growth eJournal*, 3 (71).
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