

**PRICE BEHAVIOUR
OF WAGE GOODS AND ITS RELATIONSHIP
WITH THE COST OF LIVING OF UNSKILLED CASUAL WORKERS
IN SHILLONG**

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Declaration

I, Mr. J.W. Lyngskor, hereby declare that the subject matter of this thesis entitled “Price Behaviour of Wage Goods and its relationship with the Cost of Living of Casual Workers in Shillong” is the record of the work done by me, that the contents of the thesis did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other university/institution.

This is being submitted to the North-Eastern Hill University for the degree of Doctor of Philosophy in Economics.

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As this is my personal work based on the primary data, therefore any omission and commission committed in this thesis is fully borne by me.

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Dt. Shillong.
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CONTENTS

Chapter 1 : Introduction

1.1. An Introduction to the Present Study	1
1.2. Shillong : The Study Area	7
1.3. A Framework of Empirical Investigation	14
1.4. Organisation of the Work	20
1.5. Scope and Limitations of the Present Investigation	22

Chapter 2 : A Theoretical Framework for Empirical Study on Casual Labour Market

2.1. Introduction	24
2.2. A Brief Account of various Theories of Wages	25
2.3. State-managed Institutional arrangements for Wage Determination	44
2.4. The Most Plausible Theory/Theories of Wages in the Study Area	63
2.5. Some Important Empirical Studies on (Casual) Labour Market	71

Chapter 3 : Income of Casual Wage-Workers and the Casual Labour Market in Shillong

3.1. Introduction	101
3.2. The Data Base	101
3.3. On the Earnings of a Casual Wage Worker	112
3.4. Education level of the Worker's household and Wage earnings	118
3.5. Discrimination across Various Types of Casual Wage Workers	119
3.6. Time Trends in Wage rates	126
3.7. Determination of Wage Rates in the Casual Labour Market	129
3.8. Concluding Remarks	146

Chapter 4 : Patterns in Consumption
Expenditure of Casual Wage-Workers in Shillong

4.1. Introduction	149
4.2. The Data Base	154
4.3. Monthly Average Expenditure (per household) on Wage Goods	160
4.4. Consumption Function and Propensities to Consume	162

Chapter 5 : Trends in Wage Goods Prices and
Cost of Living Index of Casual Wage Workers in Shillong

5.1. Introduction	167
5.2. The Data Base	167
5.3. Analysis of Components of Movement in Prices	175
5.4. Trends in Cost of Living of Casual Wage Workers in Shillong	188

Chapter 6 : Conclusions and Prescriptions

6.1. Summary of the Present Investigation	199
6.3. Prescriptive Remarks	204

<u>Bibliography</u>	211
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LIST OF TABLES

Chapter 3

Table 3.2(i): Sex-wise Skill-wise Distribution of Wage workers	102
Table 3.2(ii): Frequency Distribution of Households Supported by Wage-Workers as Earners	102
Table 3.2(iii): Frequency Distribution of the No. of Family Members in the Wage Workers' Household	102
Table 3.2(iv): Regression Coefficients of Family Size on indicators of Education Status of the Casual Wage Worker Household	103
Table 3.2(v): Particulars Regarding Casual Wage Workers (Sample Households) in Shillong	104
Table 3.2(vi): Mean Daily Wage Rate, No. of Work-Days in a Month and Monthly Wage Earnings of Casual Wage-Workers	107
Table 3.2(vii): Supply of Labour, Earning per Worker and Monthly Wage Earning of Casual Wage-Workers in Shillong	110
Table 3.3(0) Symbols and mnemonics used for denoting variables	115
Table 3.3(i): Regression estimates for Total WD x WR regressed on Dummies of Types of Casual Wage Workers	116
Table 3.3(ii): Regression estimates for Total WR regressed on Dummies of Types of Casual Wage Workers	116
Table 3.3(iii): Regression estimates for Total WD regressed on Dummies of Types of Casual Wage Workers	116
Table 3.3(iv): Regression estimates for Total Wage Income regressed on Supply of Wage Labour days per Month	117
Table 3.3(v): Regression estimates for Wage Income regressed on Composite Wage rate per day	117
Table 3.3(vi): Wage Earning, Extra Earning and Income : Descriptive Statistics	118
Table 3.3(vii) Frequency Distribution of Casual Workers receiving Extra Earning over Daily Wages	118
Table 3.4(i): Education level and Wage Earnings of Casual Wage Workers	119
Table 3.4(ii): Education level and Income of Casual Wage Workers	119
Table 3.5(i-a): Wage Earning Determined by the Type of a Casual Wage worker	120
Table 3.5(i-b): Wage Earning Determined by the Type of a Casual Wage worker	120
Table 3.5(ii): Income Determined by the Type of a Casual Wage worker	120
Table 3.5(iii-a): Wage Earnings determined by Community Type	124
Table 3.5(iii-b): Wage Earnings determined by Community Type	124
Table 3.5(iii-c): Wage Earnings determined by Community Type	124
Table 3.5(iii-d): Wage Earnings determined by Community Type	124
Table 3.5(iii-e): Wage Earnings determined by Community Type	124
Table 3.5(iii-f): Wage Earnings determined by Community Type	125

Table 3.5(iv-a): Wage Earnings determined by Community Type	125
Table 3.5(iv-b): Income determined by Community Type	125
Table 3.5(v): Wage Earnings/Income determined by Community Type	125
Table 3.5(vi): Wage Earnings/Income determined by Community Type	126
Table 3.6(i): Trends in the Daily Wage Rate of Casual Wage Workers	126
Table 3.6(ii-a): Determinants of Trends in General Wage Rates of Casual Workers	126
Table 3.6(ii-b): Determinants of Trends in General Wage Rates of Casual Workers`	127
Table 3.6(iii): Determinants of Trends in Wage Rates of Skilled Casual Workers	127
Table 3.6(iv): Determinants of Trends in Wage Rates of Unskilled Casual Workers	127
Table 3.7(i-a): General Wage rate as related to specific Wage rates (Reduced Form Equation of General wage rate of Casual Wage workers)	132
Table 3.7(i-b): General Wage rate as related to specific Wage rates (Reduced Form Equation of General wage rate of Casual Wage workers)	132
Table 3.7(ii-a): Determinants of Demand for Casual Labour (Structural Equations of Demand for Casual Wage Workers)	133
Table 3.7(ii-b): Determinants of Demand for Casual Labour (Structural Equations of Demand for Casual Wage Workers)	133
Table 3.7(iii-a): Determinants of Supply of Casual Labour (Structural Equations of Supply of Casual Wage Workers)	133
Table 3.7(iii-b): Determinants of Supply of Casual Labour (Structural Equations of Supply of Casual Wage Workers)	133
Table 3.7(iv): Variables determining Demand, Supply and Wage rate of Casual Labour in Shillong : Model – I	134
Table 3.7(v): Variables determining Demand, Supply and Wage rate of Casual Labour in Shillong : Model – II	137
Table 3.7(vi): Supply of Casual Wage Worker days per month (by 140 Households)	140
Table 3.7(vii): Determinants of Wage rate of Unskilled Casual Workers (Reduced Form Equation of Wage Rate of Unskilled Casual Wage Workers)	142
Table 3.7(viii): Determinants of Demand for Unskilled Casual Workers (Structural Equation of Demand for Unskilled Casual Wage Workers)	142
Table 3.7(ix): Determinants of Supply of Unskilled Casual Workers (Structural Equation of Supply of Unskilled Casual Wage Worker)	142
Table 3.7(x): Variables determining Demand, Supply and Wage rate of Unskilled Casual Labour in Shillong : Model III	143

Chapter 4

Table 4.2(i-a): Monthly Expenditure on Various Wage Goods incurred by Casual Wage Workers in Shillong	155
Table 4.2(i-b): Monthly Expenditure on Various Wage Goods incurred by Casual Wage Workers in Shillong	158
Table 4.3(i). Mean Household Consumption Expenditure on Wage Goods Items (Incurred by a typical Average Casual Wage Worker Household)	161
Table 4.4(i): Regression coefficients of Foodcal on Income and Family Size	163
Table 4.4(ii): Regression coefficients of Stimulants on Income and Family Size	163
Table 4.4(iii): Regression coefficients of Other_Consumptions on Income and Family Size	164
Table 4.4(iv): Income and Family-size Elasticities	164
Table 4.4(v): Income and Family-size Elasticities	165

Chapter 5

Table 5.2(i). Dates of Data Collection Regarding Wage Goods Prices	168
Table 5.2(ii-a): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)	169
Table 5.2(ii-b): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)	170
Table 5.2(ii-c): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)	171
Table 5.2(ii-d): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)	172
Table 5.2(ii-e): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)	173
Table 5.2(ii-f): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)	174
Table 5.3(i). Pattern Matrix: Components	175
Table 5.3(ii): Component Score Coefficient Matrix	176
Table 5.3(iii): Component Inter-Correlation Matrix	176
Table 5.3(iv): Percentage Explanation of Variations in Prices by the Factors	177
Table 5.3(v): Factor Scores of Prices of Wage Goods	177
Table 5.3(vi-a): Linear Regression Analysis of Factors of Prices of Wage Goods	180
Table 5.3(vi-b): Lagged Regression Analysis of Factors of Prices of Wage Goods	180
Table 5.3(vii): Factor-I -Trends in Wage Goods Prices	181
Table 5.3(viii-a): Regression Analysis of Factors of Prices of Wage Goods	183
Table 5.3(viii-b): Regression Analysis of Factors of Prices of Wage Goods	184
Table 5.3(ix): Factor-II : Cycle-I (Low Amplitude) in Wage Goods Prices	184
Table 5.3(x-a): Regression Analysis of Factors of Prices of Wage Goods	185
Table 5.3(x-b): Regression Analysis of Factors of Prices of Wage Goods	186

Table 5.3(xi): Factor-III : Cycle-II (High Amplitude) in Wage Goods Prices	187
Table 5.4(i): The Parameters of Cost of Living Indices (Low Prices)	192
Table 5.4(ii): The Parameters of Cost of Living Indices (High Prices)	193
Table 5.4(iii): Lower, Higher and Average Cost of Living Indices in Shillong	193
Table 5.4(iv): Five-Months Moving Average Cost of Life Index of Casual Wage Workers in Shillong	194

Chapter 6

Table 6.2(i): Minimum Wages (Rs. per day) notified by the Government of Meghalaya	204
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LIST OF FIGURES

Chapter 1

Economic Justification of Efficiency Wages	5
Growth of Population in Shillong	13

Chapter 3

Monthly Wage Income of Casual Wage Workers in Shillong	103
Index of Wage Rates of Casual Workers in Shillong	127
Trends in the Wage Rate of Casual Workers	128
Determination of Wage rate of Casual Wage Workers – Model-I	140
Determination of Wage rate of Casual Wage Workers – Model-II	141
Determination of Wage rate of Unskilled Casual Wage Workers – Model-III	143

Chapter 5

Variations in Wage Goods Prices, Shillong	179
Variations in Wage Goods Prices, Shillong	179
Variations in Wage Goods Prices, Shillong	179
Trends in Wage Goods Prices (Low)	181
Trends in Wage Goods Prices (High)	181
Cycle-I in the Wage Goods Prices (Low)	183
Cycle-I in the Wage Goods Prices (High)	183
Cycle-II in the Wage Goods Prices (Low)	186
Cycle-II in the Wage Goods Prices (High)	186
Movements in Cost of Living Indices for Casual Wage Workers in Shillong	195
Trends in Cost of Living Indices for Casual Wage Workers in Shillong (Five-months Moving Average)	195
Index of Wage Rates of Casual Workers in Shillong	196

Chapter 1

INTRODUCTION

An Introduction to the Present Study

The present study aims at an investigation into the prices of wage goods and the cost of living of casual wageworkers in Shillong, the capital city of Meghalaya. Slightly indirectly though, it also aims at investigating the functioning of the casual labour market in Shillong. An economic conceptualization of market comprises demand and supply of a commodity and its price directly, and distribution as well as welfare implications of the functioning of the market slightly indirectly. The market can also be related with the issues of stability, expansion, growth and development. However, markets might fail or they may deliver that what is considered patently undesirable. Then, there is a need of social control of economic mechanism. That suggests planning, policies and prescriptions.

Labourers are defined as a collection of workers exchanging their labour power for material – usually monetary - rewards awarded by their employers, who use the labour power for productive activities or for final consumption. Casual labourers (casual workers or casual wageworkers) are those workers who work for a very short duration (for a few hours, a day or

at most a few days under a single contract) for an employer, and who are (usually) paid for their labour either at the end of the contract or at the end of a day. In the agriculture sector, casual labourers are employed at every stage – tilling and preparing the land for sowing to harvesting and marketing the products. In manufacturing sector, most of the factories employ skilled labourers or white-collar labourers. Intermediate goods that need application of unskilled menial or even semi-skilled labour are often entrusted to contractors who work for the factory. These contractors employ casual labourers at the jobs. In construction, transport, commerce and other service sectors also a large number of casual workers are employed.

Casual workers are often unskilled or semi-skilled; they usually do not own any other factors of production (such as land, capital or implements needed to perform the job) except their labour power; they earn their livelihood by selling their labour power and often regenerate their labour power by '*investing*', so to say, a very large part of their wage earning. In case of a casual labourer, the dichotomy of consumption and investment collapses into a single category. A casual worker's household does not usually store the kitchen goods or provisions, the wage earning of the day is spent on purchase of the provisions needed for the dinner and the next day. That gives the name '*wage goods*'.

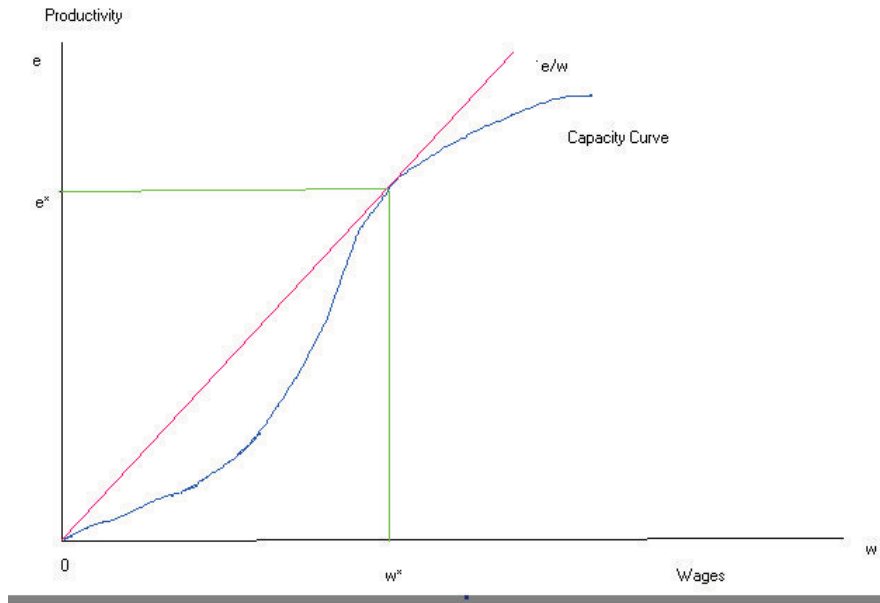
Due to low level of consumption, casual labourers are often poor performers – their efficiency is low. The market forces often impose on them the vicious circle of inefficiency – low wage rates – deficient consumption - inefficiency. **Myrdal** (1972, p. 64) wrote: *“In fact, low incomes probably hampers development more by keeping down consumption than by limiting savings, because inferior living conditions reduce labour efficiency. Strangely, this point is overlooked in most comments concerning the effect of low income levels in South Asia.”*

At low levels of income and hence nutrition, the effort that a labourer exerts may be so low that the employer’s expected utility will be increased if he pays more than the minimal utility level at which he can obtain workers. The worker’s capacity curve, shown in figure below, depicts the relationship between the total wage paid, w and his efficiency (or productivity), e . The capacity curve shows all the effort provided by the worker for a given wage. The employer’s objective is to achieve the lowest possible cost of obtaining a unit of effort. This cost per unit of effort (the piece rate), w/e , is represented by the inverse of the slope of the piece rate line, so the employer wants to maximize this slope subject to the constraint that the chosen (w,e) combination must be on the capacity curve. The point at which the two curves are tangent gives this constrained maximum. The optimal choice is

given by the wage productivity pair (w^*, e^*) . In this case, some workers will obtain employment, while some others, seemingly identical ones, will be unemployed. They cannot offer to undercut the wages of the employed because employer knows that his resulting output would be less. That would economically justify the efficiency wages (which, nevertheless will be associated with some unemployment caused due to efficiency wages being given to those who are employed).

However, casual labourers are seldom paid enough to keep up their efficiency. At low levels of income, in labour markets where unemployment exists due to efficiency wages, the nutritional status (e.g.. body mass) of labourers may be very sensitive to the wages paid. In particular, low wages paid today may severely undermine nutritional status in the future and reduce productivity. In casual labour markets, the probability of employing the same labourer again in the future may be quite low, so maintenance of the health and efficiency of casual labourers is not a concern or interest of the 'casual' employer. If all the employers do not take full account of the impact of their wages on nutritional status, a vicious circle of low nutritional status, low wages and low productivity may start and perpetuate. Actually, no employers will take full account of the impact of low wages on

nutritional status of casual labourers and the vicious circle of inefficiency would be the empirical reality.



Economic Justification of Efficiency Wages

Since this study aims at investigating into the ‘real’ wages of casual workers, we will investigate into the following questions regarding casual labourers (workers) in Shillong. First, we would inquire as to how and how much do the casual workers earn. How many days in a month does a casual labourer get a ‘job’ and at what wage rate ? What are his family size and dependency ratio ? How many members in a casual labourer’s household work ? Are they educated and does education matter ? How does the market discriminate between a skilled (usually semi-skilled) worker and an unskilled worker ? Is there any discrimination between genders ? Does the

market discriminate between communities from which casual workers hail ? What is the monthly income of a typical casual worker household ? and so on.

Next, we aim at studying the expenditure pattern of a casual worker household. We know from our day-to-day observation that a casual worker spends - nay, can afford to spend - just enough to keep his own and his family members' bodies and souls together. Extremely poor and unhygienic housing conditions, slum dwelling, reveal his standard of living. We want to see as to how much this commonplace observation and impression based thereupon bears the test of empirical scrutiny.

Prices of various consumption goods including the wage goods have been increasing over time. Inflationary rise in prices is anybody's experience. Workers in the organized sector are more or less compensated by regular increase in their wages/salaries on account of the changing rates of dearness allowances. However, casual workers depend solely on market forces. They belong to no labour union that fights for them and the government updates their (statutory) minimum wages at an interval of five years or so. Whether the statutory minimum wages are observed by the employers or not is a serious concern of none. Then, it is said that *wages*

always lag behind prices. Hence, casual workers' real wages suffer the inflationary pressure. We aim at investigating into this aspect.

Having studied the problems of casual workers in Shillong, we would make an attempt to visualize as to the remedial measures that may ameliorate their condition. Our study may suggest some such policy guidelines.

1.2. Shillong : The Study Area

Shillong is the Capital city of Meghalaya. It is a class-I town with a total population of 2.68 lakh persons (134416 M and 133465 F as in Census 2001). It is mainly a service town, rendering administrative, educational, transport, recreational and to some extent commercial services to the North Eastern Region. It is a hill town of tourists' interest well known for pleasant temperate climate and scenic beauty.

The original inhabitants of this place are the Khasis who are known for their cleanliness and simplicity. This town emerged out of the transfer of the British East India Company from Sohra (known as the wettest place on the earth) to the more centrally located place near the Shillong peak. This took place in 1866, during the British rule. It is important to note that the sustenance and growth of the urban economy of Shillong is not due to the presence of industrial houses, or as the centre of trade and commerce, but

from the fact that it is a state capital for more than a century and it is known in the North Eastern Region for its educational institutions. After the British had left, it was made the capital of Assam and since the birth of the state of Meghalaya on the 21st January, 1972, Shillong is the capital of Meghalaya. Shillong at present serves as the regional headquarters/headquarters of many central offices like NEC, ICAR, NEEPCO, Income Tax, etc. It is also the headquarters of the Airforce for the entire North Eastern Command. Besides, there are also quite a good number of other military base and paramilitary forces namely, Gurkha Training Centre, Assam Rifles, Border Security Force, etc.

Shillong has a very good road network within the city. It is also well connected to other places in Meghalaya as well as other states in the North Eastern Region. Meghalaya is a power surplus state and exports almost 36 percent of power generated by it. However, it has the least percentage of villages electrified (47.50%). In 1980, only 29 percent of its rural population was covered by electrification, which was only higher than Arunachal Pradesh (24.2 %) and Mizoram (22.7 %). On the other hand, per capita power consumption in Meghalaya is the highest (108 Kwh in 1992). It appears therefore that rural to urban disparity in power consumption is very

high in Meghalaya. That Meghalaya is a power surplus state is only due to unavailability of power to a great many people living in the rural areas.

As it has been mentioned above, Shillong is the centre of learning for the whole of North Eastern Region. Though it does not make any dent by housing the institutions offering professional courses such as management, engineering and medical sciences, yet it attracts a large number of students to study the general courses of Arts, Commerce, Sciences, Law, etc. in various, well known, colleges and a University. For school education, Shillong is the most sought after town in the North Eastern Region.

There are a number of reasons why many students from the northeast are concentrating in Shillong for their studies— the good climate of the place, the comparatively peaceful atmosphere, hospitability of the people, good standard of English teaching, the central location of the place and various other reasons. As a result, a wealth of millions of rupees is flowing into the urban economy of Shillong every month to cover the monthly expenses of the students coming from outside the state. This has a direct impact upon the economy of Shillong. Many people are employed directly or indirectly in various schools and colleges being set up every year. The house-owners are enjoying a regular demand for rooms at a high rental, the

transport operators, the food caterers, the boarding houses and many others are benefited.

Simultaneously, Shillong is also growing as an important commercial centre in the state. Interestingly, local traders and businessmen are only a few and far between. The non-locals such as the Marwaris, the Bengalies, etc. are handling most of the trade and business. This may be due to lack of the skill and expertise in trade and entrepreneurship or due to the lack of investible resources. At the same time we find that there is a shortage of supply of workers/coolie in risky areas like mining and construction, in dirty jobs as well as in those types of job that require heavy head-load. The local people do not take up these jobs, maybe due to their easy access to jobs, abundant land resources to support them and their being sparse in population in ratio to their land, or simply due to their habit of being averse to hard work.

Iewduh or Barrabazzar is the main centre of trade and business in Shillong. All the agricultural and the non-agricultural goods are brought from the rural areas to be traded in this biggest market of the state. Goods from other states also come here for redistribution to the different villages of the state. Meghalaya produces potato, tomato, betel nut, ginger, timber, tezpatta, turmeric, broomstick, etc. abundantly to be sold to other states.

Barrabazzar has the key role in this business. The state has to import almost all manufactured goods (save cement and perhaps coal) from outside. It imports fish and meat as well. Then these goods are distributed to various places in the state. Barrabazzar has a key role in this business as well. The state is rich in mineral resources and exports coal, limestone, etc. to Bangladesh and other places. It is important to note that among those who run trade and business in Shillong, there are many women, which reflects their matriarchal society.

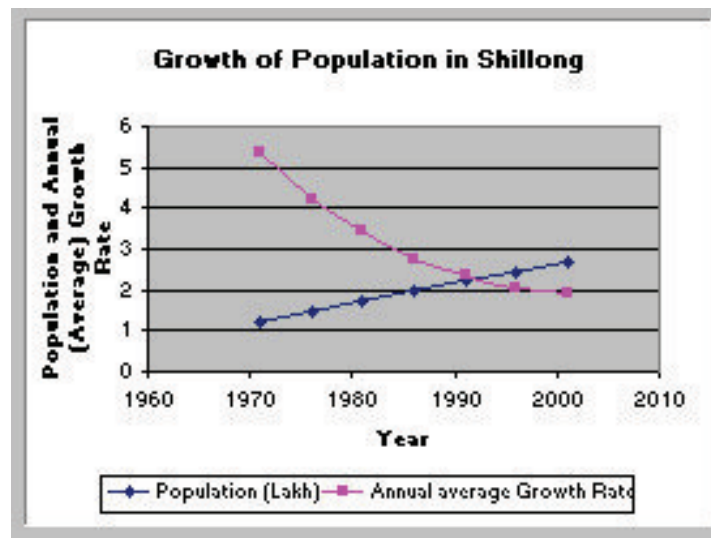
As mentioned earlier, there are no major industrial houses in and around the city, and therefore, it does not have any significant numbers of industrial workers. Yet, there are people working in small scale and cottage industries in and around the city. They are employed in the auto-servicing and repairing workshops, sawmills, steel-fabrication, printing press, furniture, body-building for trucks and buses, cement-block making, etc. Majority of these workers are employed in automobile workshops scattered all over the localities. Earlier there were also quite many sawmills the town, but now they suffer a setback because of the Supreme Court's ban on felling of timbers. Many sawmills have been closed down. As a result, a large number of people in the rural and urban areas are thrown out of employment. This has created immense hardship for the labourers who used

to earn their livelihood from the timber trade either directly or indirectly. Consequently, many labourers from rural areas have migrated to the city and other places in search of livelihood. For their survival, these ejected labourers are willing to do any kind of work available to them such as coolie in market place, serving as cobbler, cleaning jobs, working in mines, etc.

Shillong, being the State Capital, houses most of the administrative offices of the State as well as the Central government. The employees of these govt. organizations reside in Shillong. Then there are the people engaged in semi-govt. organizations and the private establishments, etc. There are self-employed people working either as taxi or bus operators or in small trades and petty businesses like shop keeping, food catering, hawkers, etc. The percentage of people working in transport services is quite large because of the high concentration of cars per population in the city. The remaining lot of workers are engaged as casual workers at construction sites, as salesmen and saleswomen, maid-servants, drivers and helpers, bus managers, carpenters, muster-roll, teer (arrow) gambling business, vendors, coolies, and so on.

Over the years, population of Shillong has been increasing. A year before the carving out of Meghalaya state from the then Assam, the population of Shillong was about 1.23 lakhs. After it became the State

capital of the newly born state of Meghalaya, it experienced a steep rise in population. The decadal growth rate of population during 1971-81 was 42.32 percent. This is the time when many people migrated into Shillong. In 1981, the population of Shillong was about 1.75 lakhs. It increased to 2.23 lakhs in 1991. At present, the annual average growth rate of population in Shillong is about 2 percent.



The literacy rate of the people of Shillong is 77.69% (M = 80.20% and F = 75.16% as reported in the Census, 2001). A few years ago, the number of educated people were not many and as such the scope of employment in govt. offices was high; but in recent years, due to an increase in the literacy rate, there are many educated unemployed in the town. There are meager opportunities of a job in the Govt offices. Therefore, many educated people, especially those who are not technically trained, are

unemployed or only partly employed. A great many of the educated youths join as teachers in the private schools/colleges either as part-time or as full-time workers. Every year new schools and colleges are being opened and they appear at every nook and corner of the city. Due to the surplus number of educated manpower in the city, these school and college teachers are paid at the minimal rate. They are exploited thoroughly by the commercial institutions, which on the other hand charge a very high admission and tuition fees from the students. Private schooling and college education is a roaring business in the city. It may be unbelievable that a teacher's pay in some private institutions is less than the wages of the daily labourers, but this is a gruesome fact.

1.3. A Framework of Empirical Investigation

Choice of the Constituents in the Category of Wage Goods: Our study concentrates around the workers of the lowest rung whose purchasing power is very limited. Their consumption is concentrated mostly on the basic necessities of life. Further, as the area that we are covering consists mostly of the tribal population who are meat eaters. We have included two types of their favourite meat namely, pork and beef in their consumption basket. The other important constituents of daily food are rice, dal, sugar, tea, potato, onion, mustard oil, atta, *biris*/cigarettes, fish, kwai (pan + betel nut) and

vegetables, and to cook food fuel is needed. An interesting point to note here is that in this particular area, the people are very fond of chewing kwai or pan and it is a part of their custom and tradition. Whenever their guests, friends or neighbours visit them, they welcome the guests by offering kwai. As a result, kwai claims a significant proportion of their expenditure.

Choice of the Markets of Wage Goods and the Casual Workers: We have chosen Barrabazzar market for collecting data on wage goods. This is the main market that supplies all types of goods and commodities. However, we have taken care to see that the prices of wage goods are collected only from the retail sellers within the same market. That is because the casual workers are retail buyers who buy the wage goods in the evening while they come back home from their work. We hold that wholesale prices are inappropriate for our purpose. To avoid (retail) price variation among different shops and among different qualities of goods, we have recorded both the lower side and the upper side quotations of prices of the goods. The average obtained from these (low and high) price quotations may give us a better picture.

Regarding the market of the casual workers, we have collected data from a number of localities of the Greater Shillong and its suburbs where we could find plenty of unskilled labourers. We have not surveyed the casual workers from the main city areas of Laitumkhrah, Mawkhrah, Jaiaw,

Lachumiere, Nongthymmai or Laban because they (casual workers) are few in numbers there and most of the inhabitants in these localities are in the govt. services. Majority of workers stay in the outskirts of the city since they pay a lower house rent there and in the backyards they can cultivate some vegetables in small gardens and also keep some chickens or cattle like pigs.

Choice of Periodicity in Data Collection: The price data have been collected twice a month (once in a fortnight) from the retail price shops in the Barrabazzar market. The price data were first recorded on November 15, 1996 and the last data were recorded on February 4, 2000 - during a span of over three years. Altogether 77 times/rounds of data are collected. As for the income (wage, employment, etc.) and expenditure data, the surveys have been conducted once every six months. On an average, it took two to three days to collect these data in one round of the survey. The data have been recorded in the month of December and January in winters and July-August during summers. The first set of data on income-expenditure was recorded in December 1996 and January 1997 and the last data were recorded in January 2000. Altogether there were seven rounds of survey that covers a period of a little over 3 years.

The Design of Survey: The source of data that we use in our study is based on the surveys and the data are related to time series of income, expenditure,

wages, prices and cost of living of casual workers during a period of three years. We framed our questionnaires in such a way that they match with our scheme of work.

We have designed two sets of questionnaires. The first is a simple chart or table where we recorded the prices of important wage goods by taking both the lower and the higher range at different dates, twice a month. The second set of questionnaires deals with income-expenditure of the casual workers. These data were collected twice a year, i.e. once every six months. On the income side, we have designed the questionnaires in such a way as to collect information about the various sources of income of the labourers, the types of labour, age, sex, educational qualification, no. of working days and the wage rate per day/month. Besides, we record the total no. of members in the family. We also enquired of their additional sources of income such as income from part time job, and the imputed income from cattle rearing, kitchen garden, etc.

On the expenditure side, we collected information regarding the expenditure of the household per week or per month on different wage goods including the house rent. Majority of the respondents report their expenditure per week, which is easier for them to remember and to calculate. To extract information about income is quite a sensitive issue. It is difficult

for the respondents to remember and calculate their weekly/monthly expenditure. To overcome these problems, we inquired of the minimum and maximum wage rate earned by the worker per day at different point of time. Then we multiplied the average wage rate by the average no. of working days to arrive at the total income per month. In case of expenditure if they could not tell proper amount of consumption we adopted the same method of taking an average consumption of a particular commodity in quantity either per week or per month and then multiply by the price (prevailing at the time and considered most appropriate) of respective commodities to arrive at the total expenditure per month. Some respondents, however, could give a proper account of their income and expenditure.

In order to identify the family/household of the labourers during the course of survey from different places, we have tried to judge from the condition of the house. We would enter into such houses which looked old and worn out or in those long houses in the slum areas where there were many tenant households staying in small rooms - usually two rooms to three rooms houses. In some cases, they stay in a single room houses. Another technique of identifying them was to go and find them in the outskirts of the town because in those places, the house rent is less and many of the casual labourers are found in such places. Only a few of the households have their

own houses. Our survey was also designed in such a way as to include various communities living in the town and its suburbs. We included labourers from Nepalese, Assamese, Bengali, Bihari, Bodo and Khasi communities, etc.

During the survey we have intentionally avoided those households who are having many members working as self-employed, govt. services, teachers, etc. though in one or two cases we have included even those households that have one or two members engaged in govt. services like peon or teachers in private institutions. Here and there, we have included one or two households whose members are running a small retail shop.

Altogether there were seven rounds of data collection for the income and expenditure of the labourers. Our aim was to collect 20 to 21 households per round of survey. However, it was found that out of 20 to 21 households some of them, occasionally, had to be rejected because the respondents could not provide proper information. Finally, we could collect expenditure data from 127 households.

It is important to note that those households that have been interviewed in those seven rounds are not the same people/households, as in each round new households were being taken. This practice gives us information that is more consistent and wide covering.

The types of labour that are included in our study are completely unskilled and semi-skilled ones. Although our main objective is to study the unskilled casual workers, we find that partly for contrast and partly for ambiguity of classification and difficulties in discriminating the unskilled workers from the semi-skilled ones, broadening of the scope of investigation is justifiable. Therefore, we included carpenters, mechanics, drivers, agricultural labourers, carriers, cleaners, house-maids, tea-sellers, bus conductors and helpers, sawmill workers, plumbers, coolie in market place, coolie in construction work, dhobi, muster roll, etc.

1.4. Organisation of the Work

This work is organized in six chapters. The first chapter introduces the subject matter of investigation and the study area, Shillong. It also introduces as to how data have been collected for the empirical study at hand and how the work has been organised.

Chapter-2 gives a theoretical framework for empirical study on casual labour market. It discusses various theories of wages as well as the institutional support that mitigates the conflicts between the employers and the wage earners and regulates the labour market. Additionally, it assesses the efficacy and applicability of different theories in explaining the empirically observed wages of casual workers in the study area. It also

presents the synopses/abstracts of some relevant empirical studies on (and related to) the subject matter of investigation at hand.

Although this investigation is directly related to an analysis of price behaviour of wage goods in relation to the cost of living (or real wages, so to say) of *unskilled* casual workers in Shillong, it necessitates studying expenditure on various consumption goods (especially the wage goods) as a prerequisite, since relative expenditure on various goods are used as weights in construction of the cost of living index. A study of consumption expenditure necessitates a study of income of the casual worker households. The organization of this work, therefore, has followed this logic.

Accordingly, the subject matter of Chapter-3 is a description of our findings on income of casual workers and the characteristics of casual labour market in Shillong. It also studies time trends in wage rates and determination of wage rates in the casual labour market.

In Chapter-4 we have presented our findings on the patterns in consumption expenditure of casual workers in the study area. Consumption function and propensities to consume also have been estimated.

The subject matter of Chapter-5 is the study of trends in wage goods prices and cost of living index of casual workers in Shillong. The increase in

the cost of living has also been compared with the increase in wage rates of casual workers during the study period of this investigation.

The sixth and last chapter presents a summary of findings of the investigation. It also proposes some policy guidelines that may be appropriate for ameliorating the conditions of the casual labourers in the study area.

1.5. Scope and Limitations of the Present Investigation

This study is based on the information collected by the investigator at an individual level and therefore it suffers from many problems accountable to the limitations of an individual. The sample size – the number of households surveyed for collecting information on household characteristics of casual workers providing information on wage earning as well as expenditure pattern of casual worker households – is quite small. The number of wage goods included for making cost of living index also is limited. The time span of the study is only three years, not a reasonably long time for assessing the trends in prices, cost of living, wage rates and earnings of casual labourers in the study area.

Although this investigation is directly related to an analysis of price behaviour of wage goods vis-à-vis the cost of living of *unskilled* casual workers in Shillong, it does, inter alia, study wage rates, household income

and demand for and supply of unskilled as well as semi-skilled/skilled casual workers in the market. Among the casual workers in our sample, the majority (about $\frac{3}{4}$) is purely unskilled, but the rest are semi-skilled – included for a contrast. We have used the term ‘skilled casual workers’ for such semi-skilled workers and it should be taken in that sense only. We must also note that there is a wide gray area around the line of demarcation between an unskilled and a semi-skilled (or skilled, as we address them) casual worker.

With all its limitations, this study hopefully provides some glimpses – a snapshot – of earning, spending, cost of living and toils of earning a livelihood and rearing a family that a casual wage earner experiences. Our study also provides some hints on the problems faced by the casual labourers and suggests some guidelines to ameliorate them.

Chapter 2

A THEORETICAL FRAMEWORK FOR EMPIRICAL STUDY ON CASUAL LABOUR MARKET

2.1. Introduction

This chapter is divided into four subsequent sections. The second section gives an introduction to various theories of wages propounded by different economists to explain how wages are determined and the third is concerned with the institutional arrangements backed up by the State (legal framework) that mitigate the conflicts between those who pay and those who receive wages – explaining how wages are determined in the state-monitored capitalism. The fourth section is concerned with the efficacy of different theories of wages in explaining the determination of wage rates of casual workers in the study area. It is to be noted that some of the theories of wages aim at explaining the wage rates in an organized sector where workers are united and thereby they collectively hold some bargaining power to reckon with. This is not the case with the casual workers. This fact provides a justification to assessment of different theories of wages for the purpose at hand. Lastly, the fifth section presents a synoptic view of some relevant empirical relations found by various researchers among the forces operating in labour market, especially, the casual labour market in India.

2.2. A Brief Account of various Theories of Wages

In this section we present a brief introduction to various theories of wages formulated or promulgated by various economists in the past. It should be borne in mind that each of these theories had strong empirical evidence behind it that induced its propounder to formulate and promulgate it. It might not have been ‘the explanation’ of the empirical facts, but was, certainly, one of the possible explanations that appeared to be satisfactory to many observers. It should further be remembered that any theory (that tries to explain a social reality) is almost always a product of the time as much as the reality that it purports to explain. In changed social circumstances, the nature of social reality changes and therefore a theory once so powerful at explaining the similar reality becomes obsolete and utterly incapable of explaining the similar, but new, reality. For example, in case of now developed economies, the subsistence theory of wages might not be a theory to explain the reality or the abstinence theory of interest might be an outdated stuff. But once upon a time when these developed economies were at lower ladders, these theories were formulated by some of the best minds of the time and these theories did indeed explain the social reality prevailing at that time. In India, which at present is at lower ladders of development

and wherein are the regions and sectors that bear the burden of dualistic (rather pluralistic) development, subsistence theory of wages and abstinence theory of interest are quite plausible theories to explain the prevailing social reality on many occasions. It is further to be noted that different theories do not contradict each other. For example, the '*subsistence theory of wages*' is rather a theory of the long run and sets the lower limit to wages determined by free market or state-managed institutional system explicable by the '*bargaining power theory of wages*'. On the other hand, the marginal productivity theory of wages (if the conditions of its applicability are met) provides the upper limit to the wages.

The Subsistence Theory of Wages: The *Subsistence Theory of Wages* existed during the Mercantilist period also where a group of nationalistic economists, who wrote in England and France between 1630 and 1675, propounded some opportunistically motivated notions about wages and economic policy. They believed that wages should be kept at the minimum necessary for physical subsistence of the workers and their families. They even maintained that the "*labourers of all countries and at all times would inevitably receive subsistence wages*". The almost universal agreement amongst the Mercantilist writers that cost of subsistence was the norm for wages was their closest approach to a theory of wages. The Mercantilist

believed that national well-being was founded on a country's export trade and a nation, like an individual merchant, became rich by acquiring money (gold and silver) through a "favourable" balance of trade. They argued that England's balance of trade suffered because competing countries, paying lower wages, could undersell England in foreign markets. The Mercantilists wanted to keep the labourers poor so that the nation might become rich through a favourable balance of trade. They frequently proposed that the real wages of the labouring class be reduced, for, if the price of labour is continually beaten down, it is greatly for the public good. They supported various policies which, it was thought, would depress the price of labour and reduce labour's share in the national income. They wanted to increase England's population because with many labourers, labour will be cheaper and therefore immigration was encouraged in various ways. The doctrine of the Mercantilists conformed to the preconceptions and supported the interests of the traders and merchant capitalists who were in a controlling position in England during that period. Their self-interest was put forward as the national good. The Mercantilist doctrine explained how national necessity required exploitation of their labouring countrymen.

We find that Adam Smith's *Wealth of Nations* contains elements of various wage theories including the subsistence, the wage fund, the

exploitation, the bargain and the productivity theories. With regards to subsistence, Smith wrote “*The wages paid to journeymen (workers) and servants of every kind must be such as may enable them, one with another, to continue the rate of journeymen and servants, according as the increasing diminishing, or, stationary demand of the society may happen to require*”. (Smith, p.72). Almost four decades later, this notion was expanded into a complete subsistence doctrine by Ricardo, who wrote: “*the natural price of labour is that price which is necessary to enable the labourers, one with another, to subsist and to perpetuate their race, without either increase or diminution*”. (Ricardo, p.90)

The wage doctrine of Smith and Ricardo, like those of economists in other periods, was the product of their times. In those days the mass of the workers were receiving wages that barely furnished subsistence, the rich and the employers were accustomed to look upon the working groups as one would look upon a slave or a draft-horse that their natural cost consists of the expenses for their upkeep. In short, Ricardo applied his cost of production theories to human beings as well as to goods when he contended that the normal price for labour was the minimum cost of producing men.

According to Ricardo, the market price for labour might vary from the “*natural price*” for but a short time, because economic forces would act to

restore the price (wages) to the “natural” level at subsistence. If the market price of labour exceeds its natural price, such high wages stimulate an increase of population according to the population doctrines of Malthus, and with such an increase in the supply of labourers wages again fall to their natural price, and indeed from a reaction sometimes fall below it, in which case the labour supply is reduced somewhat by increased mortality due to the lack of sufficient subsistence. Population adjusts so that the supply of labourers will always ultimately be in proportion to the means of supporting them.

Ricardo indicated that this “natural” or equilibrium level of wages was not absolutely fixed and constant, but might be increased slightly in time if custom and habit increased the quantity of food, necessities, and conveniences that seemed indispensable for the worker’s existence. However, Ricardo’s followers tended to disregard this qualification, though Ricardo himself held out little hope for any permanent advance in the condition of the labouring class since subsistence established by habit might be revised downwards as well as upwards. Ricardo’s “iron” or “brazen” law of wages, as it has frequently been called, was a comfort to the rich, for, by emphasizing that changes in the labour population brought wages back to

subsistence, it made the workers, as parents, themselves responsible for the condition of the working class.

The Wage-fund Theory of Wages: When Adam Smith discussed about wages, he mentioned of the funds destined for the payment of wages and for maintaining labourers. Such funds are derived from the surplus income of the landlords, the rich people and the entrepreneurs over and above what they needed to maintain their family and their trade. This fund is used to pay wages in advance of the sale of the product. Smith concluded that the demand for those who live by wages cannot increase but in proportion to the increase of the funds which are destined for the payment of wages. Similarly, Ricardo spoke of the quantity of necessities to be allotted to the labourers and maintained that the demand for labour increased in proportion to the increase in capital, which consists of food, clothing, tools, raw materials, machinery etc. necessary to give effect to labour. Other economists who accepted the theory are JS Mill, TR Malthus, N. Senior, etc. However part of the doctrine remained vague and ambiguous, for instance, though the fund was supposed to increase by savings and diminish with increased taxes on the rich or reductions in savings, it was considered to be a predetermined amount that at any particular time could not be changed. Influenced perhaps by the yearly period of production in

agriculture some of the economists gave the impression that the wage fund consisting mostly of food was fixed for a year at a time. The wages depend solely upon the relative amount of capital and population, and the level of wages is determined simply by dividing the wage fund (the demand) by the number of workers (the supply). Any successful effort to raise wages by legislative or trade union action would simply reduce the amount received by other wage earners without changing the general level of wages. Such wage increases were, it was assumed, at the expense of other workers and not at the expense of the capitalists- a comforting doctrine to the employer. The wage earners as a whole could only be harmed by actions, which reduced the wage fund, such as taxes on capitalists. Therefore it was considered of primary interest to workers that the income of the capitalists be increased and not decreased- also a comforting notion to the capitalists.

The wage fund theory was a rigid demand and supply explanation of wages, which assumed that the supply of labour at any time was fixed or absolutely inelastic, and that the demand for labour consisted of a fixed sum determined by the intentions of capitalistic employers. The main critics of this theory were **W.T.Thornton** and **F.A.Walker**, whose writing after 1865 could puncture the wage fund myth. These writers pointed out that the demand for labour arises not so much because the employer has to get rid of

a surplus fund but because consumers demand the product of industry. Furthermore, the demand for labour, by individual employers, does not always have unit elasticity so that the price of labour times the amount purchased will equal a constant (monetary) sum. The wage fund is really indeterminate since the demand for labour and the amount paid out for wages vary with the price of labour; no employer is bound to spend a fixed sum regardless of the wage rate. The total amount paid out in wages might increase with an increase in the efficiency (or the number) of workers even though there is no increase in capital funds. Therefore, both the demand for and supply of labour (in the sense of output) are not “independent variables” but may fluctuate with changes in the rate of wages. **Haney** says, “*in the long run and widespread sway of the wages-fund doctrine is to be seen the influence of class bias*”. (**Haney**, p.524).

The Exploitation Theory of Wages: Karl Marx is the main propounder of this theory. However, at the beginning of Adam Smith’s chapter on “the wages of labour” he suggests the basis for an exploitation theory of wages. Smith writes that in that original state of things, which precedes both the appropriation of land and the accumulation of stock, the whole produce of labour belongs to the labourer. He has neither landlord nor master to share with him. But this original state of things, in which the labourer enjoyed the

whole produce of his own labour, could not last beyond the first introduction of the appropriation of land and the accumulation of stock. As soon as land becomes private property, the landlord demands a share of almost all the produce that the labourer can either raise, or collect from it. His rent makes the first deduction, profit makes a second deduction. (**Smith**, pp.57-58).

It was such notions of Adam Smith's that Karl Marx used to develop his "exploitation" theory of wages. Marx, a contemporary of JS Mill drew more extensively, however, from the writings of Ricardo and his followers. From Ricardo he adopted such ideas as the labour theory of value, the Ricardian theory of Rent and the notion that wages and profits increase only at the expense of one another. Marx took the accepted doctrine of the Classical economists and derived from them his own "natural laws". Starting with Ricardo's notion that labour creates all value, Marx contended that profits, interest and rent are unwarranted deductions from the product that labour alone creates. Under capitalism, he explained that the exchange value of products is determined by the average amount of socially necessary labour time spent upon their production. In addition to the current labour time spent in producing an article, allowance is made for previous labour time embodied in any capital equipment used in producing the article. The wages that the workers receive are assumed to be only as much as is

necessary for their maintenance, the “*cost of reproducing the labour power*” used. According to Marx, the capitalist compels his employees to work for more hours a day than is necessary in order to produce their subsistence. The difference between the exchange value of the workers’ product and the subsistence wages they receive is the “surplus value” that is expropriated by the capitalists and distributed as profit, interest and rent. In short Marx assumes that labourers produce an “expropriated” amount in addition to their subsistence and that the capitalists, through superior bargaining power, can force the workers to perform that additional work. The capitalists enjoy superior bargaining power, because they own the means of production, without which it is impossible for workers to produce, and because there is a large “reserve army of unemployed” workers. Here Marx touches on the bargaining theory of wages, which is discussed in the next section.

Although Marx did not invent his theory of wages all out from his hat—empirical evidences found in England at that time, profusely cited by him in his “*Capital*”, suggested nothing otherwise perhaps - his wage theory is subject to a number of objections raised by other economists. The doctrine of “*surplus value*” assumes that the labour theory of value and the subsistence theory of wages are valid. The labour theory of value, by basing value on the labour time spent rather than the utility of the product,

obviously puts the cart before the horse. The subsistence theory of wages fails to make sufficient allowance for population trends, for increases in per capita productivity, or for the strength of competitive forces. Nevertheless, The theory of exploitation emphasises the monopolistic elements or imperfections in labour and commodity markets, which on most occasions is a reality. Like any theory, the exploitation theory has a great power to explain the empirical experiences.

The Residual Claimant Theory of Wages: As noted before, Adam Smith pointed out that rent and profit constitute the first and the second deductions from the produce of labour. It implies that the labour receives what is left after such deductions. There are, therefore, traces of a remainder or residual theory of wages in Smith's writings. However, **Francis Walker** explicitly worked out a residual theory of wages, which was based on a proposition that a worker was "*the residual claimant to the product of industry*". Rent he believed was fixed by the *differential principle* of the Ricardian rent theory, profits by the relative degree of skill of the entrepreneurs according to the same principle, and interest by the return necessary to induce saving for capital accumulation. Rent, profit and interest being independently determined and deducted from the product of industry, the whole remaining body of wealth, daily or annually created, is the property of the labouring

class, their wages, or the remuneration of their services. So far as, by their energy in work, their economy in the use of materials, or their care in dealing with the finished product, the value of that product is increased, that increase goes to them by purely natural laws, provided only competition be full and free. Walker optimistically believed that inventions and progress “immediately” accrued to the benefit of workers, because the reward for other factors was definitely limited, whereas the reward for labour was enhanced by every cause, which increases the product of industry.

F.W. Taussig’s theory of *discounted marginal productivity* is in a sense a residual theory for, like Walker, he explains that rent and interest, which are determined by independent principles, are subtracted first. “The product of labour is discounted (in advance) by the capitalist employers”. (**Taussig**, Vol.2, p.214). Other economic writers, like E.Vom Bawerk and CJ Bullock have maintained that wages cannot rise so high that they will tend to discourage entrepreneurs and capitalists by permanently reducing the proportion of the product paid out in profit and interest. However, the very fact that the residual claimant idea has been applied by economists to the other shares of distribution, especially profit, it is sufficient to cause one to question its validity as a theory of wages.

The Bargain Theory of Wages: Adam Smith's writings also contain traces of a bargaining theory of wages. He stated that the employers have the advantage in disputes over wage rates because they can combine much more easily (the law then prohibited combinations to raise wages but not those to lower the price of work), and because employers have more resources so that they can hold out much longer, thus forcing their workers into compliance with their terms. Employers, Smith believed, frequently make better bargains with their servants in dear than in cheap years, for in years of scarcity workers are more humble and dependent and many are willing to take employment upon lower terms than ordinary. Smith said that the price of labour cannot be ascertained very accurately anywhere - different prices being often paid at the same place and for the same sort of labour, not only according to the different abilities of the workmen, but according to the easiness or hardness of the masters. Various economists since Adam Smith have emphasized bargaining power as a factor in wage determination.

W.T.Thornton, attacking the wage fund theory, explained that the sellers of labour are at a disadvantage in bargaining with employers because they cannot store their labour, whereas the employers, having greater resources, can hold out longer, and, being only a few in number, can combine more readily to depress wages. Another discussion of the bargaining theory is

found in Maurice **Dobb** (1928) and **Dobb** (1973). Proponents of the bargaining theory of wages maintain that no single principle or economic force alone can determine wage rates. The various forces in the labour market act and react upon one another; a rise in wage rates may reduce the labour supply or increase the efficiency of the workers concerned. They explain that there usually is a whole range of possible wage rates between the “upper and lower limits,” between the highest wage the employer will pay and the lowest wage the workers will accept.

According to these theorists, the “upper limit” to wage rates depends upon a number of things, including the productivity of the workers, the investment of the employer in capital equipment, the cost of borrowing additional money for operations, the competition of other firms in the industry, and the possibility of substituting machinery or land for labour in production. Presumably, there is a wage limit beyond which the employer would simply refuse to hire a certain group of workers, and, if necessary, might prefer to close his plant. Workers on the other hand have a lower limit or “supply price” below which they may refuse to work. This lower wage limit is flexible and varies with circumstances. It is affected by the worker’s own self respect, the opinion of others, his knowledge of conditions elsewhere, trade union policies, labour legislation, etc. Where the actual

wage rate will fall between these two limits depends upon the bargaining strength of the sellers and the buyers.

Bargaining power is rather a vague term and is influenced by a variety of factors, some of which are non-economic, such as custom and public opinion. A worker's bargaining strength is weakened by any conditions that prevent him from holding out for a certain wage. Such conditions include lack of reserves, family responsibilities, and lack of opportunities for work elsewhere. Alternative opportunities serve as limits to unfavourable treatment by one's present employer. Bargaining theorists stress the fact that workers have few alternative ways of making a living today except by selling their labour, because it is becoming increasingly difficult for a worker to start in business for himself. These theorists also explain that the worker is handicapped by circumstances that decrease his mobility (such as home ownership, local ties, lack of fund for moving expenses, etc) and that thereby prevent threats to move as a means of safeguarding the worker's interests. Indeed the proponents of this theory point out that the wage earning class is so poor that any reductions in wages tend to produce the conditions (increase in the supply of labour hours offered for sale, willingness to offer labour services at a lower supply price, etc) which will perpetuate that lower wage rate. Thus *poverty breeds poverty*.

Bargaining power presumably can be strengthened by combination and collective bargaining through labour unions. No worker is indispensable to an employer; but the larger the group of workers, the more indispensable it will be. Labour unions also have reserve funds with which to support workers who are holding out for the union wage rate. The pressure of public opinion on the side of the workers may cause employers to pay higher wage rates to avoid social disapprobation. The example set by the govt. in hiring men may establish certain labour standards that will be followed by private industry. Labour legislation, such as minimum wage and unemployment-insurance laws may help to maintain the “lower limit” or the supply price of labour at a certain level. It is apparent that trade unionism is to some extent based on the bargaining theory of wages. United action through unionism helps to prevent any tendency by individual workers to underbid one another for employment and to reduce the “lower limit”. The union, by threatening the employer with various losses connected with a strike, may even raise his “upper limit”.

The Marginal Productivity Theory of Wages: Adam Smith started his chapter on “The wages of Labour” in the *Wealth of Nations* with the statement that “the produce of labour constitutes the material recompense or wages of labour”. Following this lead, a number of economists in the

nineteenth century pointed out that wage rates were related to “the productive power of labour”. In fact the German economist, T.H. von Thünen, summarized the modern theory of Marginal Productivity very well in 1826. Pointing out that, with a given quantity of capital, each increase in the number of workers lead to smaller and smaller additions to the total output, he concluded that the wage for all workers of equal skill and industry was determined by the addition to a firms output for which the last worker alone was responsible. “Since there cannot be unequal wages for equal services”, he said, the wages of any class of workers are “equal to the increased product which results from the last worker hired”. (**Lester**, p. 173). This part of von Thünen’s work was however ignored by other economists. The notion that wage rates are related to productivity began to be accepted in England during the 1850’s, when, to the astonishment of all, the Factory Acts and the Ten Hour Law, instead of ruining English industry as was expected, actually stimulated it. The increased efficiency that followed the extension of the Factory Acts from Textiles to other industries led to the downfall of the hitherto accepted doctrine of the economy of low wages.

American writers on economic subjects early emphasized that wages are dependent to some extent upon productivity of the workers. **Francis**

Walker declared in 1876 that wages are paid ultimately out of the product of industry and that it is production, which limits them. Towards the end of the nineteenth century a number of European and American economists, of whom J.B.Clark was the most influential, rediscovered the theory of diminishing productivity and the marginal productivity theory of wages. He came up with the idea of a “natural law of wages” which proved that labour’s product and its pay are identical.

The Marginal Productivity theory of wages explains that employers will continue to hire workers until the value of the product of the last worker hired in that classification is equal to the wages paid to that additional worker. So long as workers’ wages are less than the amount by which their services will increase the incomes of employers, it will pay employers to expand their employment and production. By hiring more workers, employers tend to make labour scarce and to bid up wage rates. At the same time the added output of the new workers hired tends to depress the selling prices of the articles that they help to produce. Competitive forces, therefore, cause the wage rates to approximate the exchange value or “productivity” attributable to the last worker hired (the marginal worker) in any homogenous group of workers. The wage rates for identical workers tend to be identical. In this way, the theory attempts to explain not only the general

level of wages but also the differentials in wages for various grades of labour. The Marginal Productivity theory explains not only the rate and amount of wages paid to labour but also the remuneration received by the other factors of productions, including capital equipment and business enterprise. The theory assumes that the employer will continue to hire each of the productive factors up to the point where the cost of the last additional unit (the marginal unit) of each factor equals the value to him of the additional product (the marginal net product) which he thinks that the marginal unit of the factor alone creates. The marginal productivity of a factor establishes the limit to the price that it is profitable for employers to pay for a certain quantity of that factor, and it is assumed that employers will distribute their business expenditures among the various factors of production on the basis of their marginal productivity.

The marginal productivity theory may seem very simple, but its simplicity is deceptive. As a demand theory of wages, the marginal productivity theory fails to make full allowance for the peculiar nature of supply curves for labour. It assumes the existence of perfect labour markets, perfect product market, and increasing costs for additional units of output. These conditions fail to prevail more than often. The theory also assumes that an employer can calculate the “net marginal product” for each factor of

production and for each class of workers. It is not always feasible to calculate the net marginal product of labour. It has also been pointed out that marginal productivity theory supports the 'product exhaustion theorem', which in turn supports the vested interests of a certain class to repudiate the exploitation theory of wages.

2.3. State-managed Institutional arrangements for Wage Determination

Determination of rewards to labourers is the most controversial issue in the whole economics of labour. It is the bone of contention between the employers and the workers - while the workers want to enjoy a better wage for a better life, the employers always try to reduce the wages wherever and whenever possible for their own betterment. The clash of interest between these two classes of society is obvious and it is a universal fact. Often there are claims and counter claims that each is trying to exploit the other. To avoid (or mitigate) these controversies between the employer and the workers every country adopts certain devices, in the form of State Regulation for solving the problem of wage determination that is acceptable to both sides, some of which are given below:

Compulsory Conciliation and Arbitration: The system of compulsory conciliation and arbitration originated in New Zealand in 1894 but in course

of time it was introduced in many countries of the world. In general, adjudication is resorted to only after the parties fail to reach an amicable settlement during conciliation proceedings. In many cases, the system also provides for compulsory enforcement of a collective agreement mutually arrived at between the parties by an award of the court of arbitration. The provisions of the laws in different countries vary in details but, in general, all the systems enumerated above are included under a single arrangement.

Compulsory Conciliation: The success of the scheme for compulsory application of an agreement entirely depends on the willingness of the parties to voluntarily enter into an agreement. In the event of their failure to decide the issue mutually, undesirable consequences may follow. In such a case, the coercive power of the State is exercised to induce them compulsorily to reach a settlement with the help of a Conciliator.

Under the Australian Commonwealth Conciliation and Arbitration Act (1904-1958), Commissioners are empowered to intervene if no agreement is reached between the parties themselves. The Act empowers the Commissioners to convene a Compulsory Conciliation Conference consisting of the representatives of employers and employees and presided over by a Commissioner or a Conciliator (on the Commissioner's authorisation). A memorandum of agreement arrived at in the conciliation

proceeding is, on the certification of the Commissioner, binding on the parties. If conciliation fails, the Commissioner settles the dispute by arbitration. However, the power to decide the question of basic wage for male or female workers vests in the commission in Presidential session.

Compulsory Arbitration: Compulsory arbitration as a method of resolving wage disputes has been widely adopted in several countries. Essentially, regulation of wages through compulsory arbitration is ancillary to the general provision for the prevention and settlement of industrial disputes. In many cases, the arrangements for giving a legally binding character to a collective agreement, compulsory conciliation and the constitution of tripartite wage boards from previous steps before compulsory arbitration is resorted to. In such cases, Conciliation Committees, Wages Boards or Boards of Industry, which function in direct conjunction with the court of arbitration, operate as subsidiary tribunals, the ultimate power to decide the issue being vested in the Arbitration Court. In some cases, Courts of Arbitration function without the assistance of any intermediary agencies. The system of compulsory arbitration was first adopted in Australia and the New Zealand but later many countries followed the suit. The theory of compulsory arbitration in Australia, as in many countries of the world, is based on the proposition that when agreement in an industrial dispute is not

reached through negotiation between employer or employees or their representatives or subsequently through conciliation by an independent public authority, then that public authority should arbitrate. Under the Commonwealth Conciliation and Arbitration Act, disputes regarding basic wages of male and female workers are decided by the Commonwealth Conciliation and Arbitration Commission in presidential session. There is no appeal from their decision on the question.

An Arbitration Court may consist of one person only or a few persons with one member acting as the Chairman. Usually, personnel of the Court are drawn from the judiciary. The qualifications and tenure of office, powers and functions of the adjudicators are, in general, prescribed under the law itself. Sometimes, representatives of employers and employees are also associated with the deliberations of the Court. The practices in different countries vary in detail, but in essence, the approaches are more or less uniform.

The powers of the Court of Arbitration depend mostly on the objective for which the Court is set up. In cases where such Courts have been set up exclusively for raising wages, their powers are narrow. Wherever the object of establishing them is to decide industrial disputes in general, the powers are usually wide.

In India, the first step in State intervention in the settlement of industrial disputes took place in 1919 and 1920 where the Madras Govt. set up non-statutory courts of inquiry in respect of disputes in three large establishments namely, the Madras Electric Tramway Ltd, the Buckingham and Carnatic Mills Ltd and the Oil companies in Madras. In all these cases the 'award' of the court was accepted by the parties. The second step of state intervention in India was the statutory state intervention e.g., the passing of the Trade Disputes Act of 1929, which provided for the setting up of courts of inquiry and of boards of conciliation, which contained special provisions regarding strikes in public utility services and general strikes affecting the community as a whole. The reports of settlement of disputes were not binding on the parties; their acceptance and implementation were left to the pressure of public opinion. The third step is the introduction of Compulsory Adjudication in wage determination. Compulsory arbitration of industrial disputes, the majority of which were in fact wage disputes, was introduced in the Bombay Industrial Disputes Act 1938, by an amendment enacted in 1941. Early in 1942, a new rule, Rule 81-A, was inserted in the Defence of India Rules, which conferred on the Central govt. wide powers, which were delegated to Provincial govt, to issue general or special orders for reference of industrial disputes to conciliation or adjudication, if necessary, for

securing the defence of British India, public safety, maintenance of public order, or efficient prosecution of war or for maintaining supplies and services essential to the life of the community. The rule also empowered the govt. to provide for the prohibition of strikes and lockouts in connection with such disputes and to enforce the awards of the adjudicators.

Wage Boards: The wage board system owes its origin to the Victorian minimum wage legislation of 1896, which provided for elective wage boards for the fixation of wages in certain sweated trades. The system is in operation in many countries of the world. A great deal of variations are noticed in respect of their kind, manner in which they are appointed, their constitution, powers and functions. In the paragraphs that follow an attempt has been made to review briefly some of the salient features of the system as it operates in Australia, U.K., U.S.A., etc.

Appointment of Wage Boards: In general, the ultimate power to appoint Wage Boards vests in a government authority specified under the relevant statute. A Wage Board may be established to operate for a specific trade, a branch of trade or a group of trades. In U.K., the Trade Boards Act, 1909 empowered the Board of Trade to appoint Trade Boards if it was satisfied that the rate of wages prevailing in any branch of trade was exceptionally low, as compared with in other employments, and that the other

circumstances of the trade were such as to render the application of the Act to such trade expedient. In U.S.A., a number of State minimum wages laws provide for the wage board system for the regulation of wages. In general, these laws confer the power of appointing Wage boards on the Commissioner of Labour, or other authority specially prescribed for the purpose.

Constitution: Wage Boards are tripartite bodies consisting of representatives of employers, workers and independent or impartial members. The representatives of employers and employees are equal in number, whereas there may be only one independent Chairman or a certain total number of independent members besides the Chairman. The total number of representatives or independent members varies from country to country. Thus in Victoria, a Wage Board consists of an independent Chairman and four to six representative members. The number of members can be increased to ten with the approval of Minister of Labour and Industry. “Nominations of the employers’ representatives may be made by individual employers, or a group of employers or by an employer association. Nomination of employee representatives may be made by six or more individual employees, a representative group or an organization of employees”. (Hince, p.165.)

Powers and Functions: The main task before the Wage Boards is determination of wage rates. In some cases, they are also required to deal with certain allied matters e.g. hours of work, holidays with pay, allowance to be given to handicapped workers, etc. In U.S.A., Wage Boards are merely recommendatory bodies and are entrusted with the task of making recommendations with respect to minimum rates of wages for specified occupations to the authority appointing them. The determination are enforced by the administering authority which is empowered to issue wage orders or decrees for the purpose. In the discharge of their responsibilities, the wage Boards are in general, empowered to summon witnesses, administer oaths and take testimony.

The most important function performed by a Wage Board in the U.S.A. is to make necessary findings and to recommend minimum rates of wages suitable for employees in the occupation concerned. In the determination of minimum rates of wages, the Wage Boards are, as a rule, required to adopt the principles laid down in the respective laws. The earlier laws generally emphasized the adoption of 'living wage' principle but during the course of time, the principle was increasingly replaced by 'fair wage' or 'reasonable value' principle to circumvent the repeated objections of the Supreme Court resulting from the adoption of 'living wage' principle

alone. In most of the states, Wage boards are authorized to recommend minimum rates of wages both for the time and piece-rated workers. In majority of the cases, they may also recommend rates for overtime and part-time work.

In India, after 1946-47 as the trade unions started to grow and as many workers were dissatisfied with the lengthy procedure of the courts with its inordinate delays and high expenses especially when appeals were made at the High Courts, most of them turn away from adjudication. Consequently, labour looked round for a method of wage determination in which they themselves might have an effective voice. The system of wage boards seemed to give them the opportunity they were looking for. The report of the Committee on Fair wages, which was published in 1949, had recommended the establishment of Wage Boards but it was the Second Five Year Plan that particularly emphasized the application of this technique as the most suitable method of wage regulation. Wage Boards are appointed by the Govt. of India (Ministry of Labour and Employment) purely on *ad hoc* basis and are usually composed of seven members: two representatives of the management, two of labour, two independent members and a Chairman. The usual practice in India is to take one of the independent members from the parliament and the other from amongst the rank of educationist particularly

teachers of Economics. Exceptionally, the govt. has appointed Chartered Accountant on some of the Wage Boards.

Central Wage Boards in India are purely recommendatory bodies. They are required to submit their reports to the Govt. of India that ultimately takes decision regarding the acceptance of the recommendations with or without modifications. It is up to the Government to decide the manner in which recommendations are to be enforced. In making their recommendations, the Wage Boards are required to confine the deliberations to such issues as are specifically included in their respective terms of reference. In general, they are required to determine the categories of employees to be brought within the scope of the proposed wage-fixation and to work out a wage structure for the industry as a whole. In addition to the common items mentioned above, some of the wage boards have to deal with the question of bonus, gratuity, demands in respect to payments other than wages, hours of work, interim relief, etc. Thus, the wage boards have to deal with a wide range of subjects of which the fixation of wage scales on an industry-wise basis apparently constitutes the biggest of all the issues before them. In working out the wage structure, all the wage boards are required to follow the principle of “fair wage” as set forth by the Committee on Fair Wage. The concept of “fair wage” as adopted by the committee is given as follows.

While the lower limit of the “fair wage” must obviously be the minimum wage, the upper limit is set by the capacity of industry to pay. Between these two limits the actual wages will depend on:

- (i) the productivity of labour
- (ii) the prevailing wage rate
- (iii) the level of the national income and its distribution and
- (iv) the place of the industry in the economy of the country

In addition to the principle of “fair wage”, the wage Boards are also required to consider (a) the needs of the industry in a developing economy, (b) the requirements of social justice, (c) the need for adjusting wage differentials in such a manner as to provide incentive to workmen for advancing their skill and (d) the desirability of extending the system of payment by results.

With respect to the fixation of minimum rates of wages, the Wage Boards have tried to concretize the ‘need-based’ formula adopted at the 15th Labour Conference held in Delhi on July 1957, which had agreed that the following basic needs should be satisfied by the minimum wage:

- (1) In calculating a minimum wage, the standard working class family should be taken to comprise three consumption units for one earner, the earnings of women, children and adolescents being disregarded.

- (2) Minimum food requirements should be calculated on the basis of the net intake of calories for an average Indian adult of moderate activities.
- (3) Clothing requirements should be estimated on the basis of per capita consumption of 18 yards per annum, which would give to an average worker's family of four members a total of 72 yards.
- (4) In respect of housing, the rent corresponding to the minimum area provided for under the Govt. Industrial Housing Scheme be taken into consideration
- (5) Fuel, lighting and other miscellaneous items of expenditure should constitute 20 per cent of the total minimum wage.

Collective Bargaining of Wages: The concept of collective bargaining finds its earliest treatment in the writings of **Webb, Sydney and Beatrice**, (*Industrial Democracy*, 1898). They described the process of collective bargaining as it was practiced then in Britain. Webbs thought that this system was one of the alternatives to the decision by the employer and explained that the method of collective bargaining - in short, trade unionism - is the settlement of the conditions of employment by a conference between the representatives of employers and the representatives of the organized workers, both sides, of course, acting through their expert salary officials.

International Labour Organisation (ILO) defines the term ‘collective bargaining’ as “negotiations about working conditions and terms of employment between an employer, a group of employers or one or more employers’ organization, on the one hand, and one or more representative worker’s organization on the other, with a view to reaching agreement. (*Collective bargaining – A worker’s Education Manual*, Geneva 1960, p.3).

There exists an apparent conflict between employers and employees that gives collective bargaining its fascination. But both parties have also a common interest in ensuring high level of output, as both profit and earnings of the workers depend on it. Higher production always requires peaceful and harmonious industrial relations. It is this common goal on which the definition of collective bargaining is based. These common interests provide a solid basis for cooperation and agreement between management and workers. Thus the entire philosophy of good bargaining particularly the factual method – is predicated upon honesty of both the parties in their mutual dealings.

The concept of collective bargaining itself explains that under this system, wages are determined by the relative bargaining strength of the two groups, which is mainly influenced by the features of unionism. The whole process of negotiation is in danger if one side is much weaker than the other.

Trade unions in India have nowhere achieved anything like the strength and status of the trade unions in developed countries. The weak and fragmented state of the labour movement is one major reason for the undeveloped condition of collective bargaining in India. (**Kennedy, V.D.**, p.76-77). The origin of trade union in India may be traced back to the movement in Ahmedabad in 1917 where the workers of a textile industry demanded a 50 percent increase in wages as D.A. in lieu of “plague bonus”. The employers were prepared to pay only 20 per cent increase in wages. Mahatma Gandhi suggested a compromise at 35 per cent. The matter was then referred to arbitration. The trade union movement started gaining strength after independence onwards where a number of national trade unions appeared on the scene. However, though there had been a phenomenal increase in membership figures, yet it has not been matched by a corresponding gain in strength. Their financial resources are inadequate and furthermore the increasing rivalry among unions has weakened the movement. A rival union has often rejected agreements entered into by a union. This has discouraged employers from earnestly pursuing the path of negotiation and bargaining. Moreover, the increasing tendency on the part of the Govt. to refer industrial disputes to tribunals for adjudication and the setting up wage boards has played down the role of collective bargaining.

From observations, it appears that collective bargaining of wage claims has a better chance of success when confined to an industry in a small area than when extended on a national scale.

Minimum Wage Legislation: The adoption by the ILO of the Minimum Wage Fixing Machinery Convention of 1928 aroused considerable interest in, and expectations of, a statutory system of minimum wage in many countries. In some countries it is known as the “fixed minimum wage” or the “flat-rate” system. Under this system, the legislature may or may not take the assistance of any agency in determining the wage rate to be prescribed. Wide variations are usually noted in the scope of laws in different countries. This method is used mostly in cases where the object of wage regulation is the prevention of sweating or restraining payment of unduly low wages and, more recently, also in cases where the primary aim is to eliminate unfair competition among employers.

In most of the Australian States and New Zealand, the Factories and Shops Acts prescribe minimum rates of wages in factories and shops, particularly for the minors, apprentices and women workers. In spite of variations with respect to the form, scope and contents of these laws as operated in different countries; they have fulfilled three common purposes.

Firstly, they prescribe the bottom limit below, which no workman under their respective coverage is to be allowed to fall. Secondly, they prepare the background for prescribing a national minimum wage in future. Thirdly, they afford protection to the weaker workers, particularly women and minors, against the payment of excessively low wages.

In India the Minimum Wage Act, as an instrument of wage regulation was passed in 1948. This Act provides for the fixing of minimum rates of wages in certain employments with the object of protecting minimum wages in the industries where workers' organizations are poorly developed and consequently their bargaining power is weak. It aims at the prevention of sweating or exploitation of labour in unorganized industries. (Govt. of India, *The gazette of India, Extraordinary*, N. Delhi, March 15, pp. 37-47). This legislation assumes particular significance for those regions or centres where unorganized industries are characterized by abundant labour supply and imperfections in the labour market. These industries include woolen carpet making, shawl weaving, rice mill, flour mill, plantations, tobacco including bidi making, oil mill, stone crushing, public motor transport, tanneries, road and building constructions, agriculture, etc. The Act empowers the govt. to appoint tripartite committees and sub-committees to hold enquiries and render advice with respect to fixation of wages. The Act also provides for

the constitution of a tripartite Advisory Board at the state and the central Advisory at the center. The Committees and Boards are purely recommendatory bodies whose main task is to advise the govt. on matters relating to fixation or revision of minimum rate of wages. The govt. is empowered to extend the operation of the Act to other employments also which are not specifically included in the schedule of the Act. The minimum Wages Act, 1948, does not contain any definite provisions defining the nature and content of the minimum wage and the factors that should be considered in determining it. So far as the rate of the minimum wage is concerned the Act provides for the fixation of (1) a minimum time rate, (2) a minimum piece rate, (3) a guaranteed time rate, and (4) over time rate appropriate to different occupations, localities or class of workers and for adults, adolescents, children, etc. No definite provision has been made under the Act for the fixation of dearness allowance. Section 4(1) of the Minimum Wage Act, merely prescribes that the minimum wage to be fixed or revised should consist of (1) a basic rate of wages and special allowance to be called cost of living allowance, or (2) a basic rate of wages with or without the cost of living allowance and the cash value of concessions in respect of supplies of essential commodities at concession rate, or (3) an all-inclusive rate of allowing for the basic rate, the cost of living allowance and the cash value of

concessions, if any. While the basic wage rate and the cost of living allowances have been fixed in a few cases, all-inclusive minimum wages have generally been prescribed. (**Labour Bureau**, p.83).

According to the Minimum Wages Advisory Committee held on 1957, the following criteria are considered for fixation or revision of minimum wages. The minimum wage is to be determined by a judicious balance of the different factors like the human needs of workers, earning strength of the average workers' family, the living cost in a locality and the prevailing wage levels for similar work. Care should be taken to ensure that the wage economy of the area is not upset by the rates recommended by the committee provided, however, that the minimum wage to be fixed should in no case fall short of the minima recommended by the central Advisory Board.

The Minimum Wage State Advisory Board of the Govt. of Meghalaya: The Minimum Wage Board is functioning in the state of Meghalaya. The Govt. of Meghalaya in collaboration with the State Labour Commission constitutes the Board. There are 20 members in this body whose tenures last for three years only. The Labour Commissioner is the Chairman of the Board, the Member Secretary is the Secretary of the Labour Commission and the Director of Economics and Statistics is the core Member. The

Representatives from the Employers and the Employees are 7 each. Besides, there are 3 Independent Members drawn from different fields. Majority of the Representatives are taken from the Public Sector Undertakings with one or two Representatives from the Private Sector Enterprises because there are very few big enterprises run by the Private entrepreneurs in the state. The function of this Board is to fix the minimum wage for the casual labourers once in five years. The Board does not prescribe any welfare measures for the labourers, the only relief they enjoy is that they are entitled to get one day rest in a week as paid holiday i.e. Sunday. Prior to 1996, there were only two categories of casual labourers, namely, skilled and unskilled but after the 1996 Govt. notification of wage revision No.LBG.21/93/229 dt.10/7/96 a new classification is introduced i.e., skilled, semi-skilled and unskilled labourers. The rate of wages per day was as follows:

1. Skilled = Rs.45/day
2. Semi-skilled = Rs.40
3. Unskilled = Rs.35

The last wage revision took place in 1999 vide govt. notification No.LBG.28/98/433 dt.27/10/99 with the following rates:

1. Skilled = Rs.62/day
2. Semi-skilled = Rs.54
3. Unskilled = Rs.50

The next wage revision is supposed to take effect by the end of AD2003 and the proposed rates are given below:

1. Skilled = Rs.85/day
2. Semi-skilled = Rs.75
3. Unskilled = Rs.70

The difference between the casual labourers of the govt. and the non-govt. is that those labourers in the govt. sectors are enjoying regular employment throughout the year though their wages are less than those who are employed in the non-govt. On the other hand, those labourers in the private sectors are enjoying higher wages, but they do not get regular employments.

2.4. The Most Plausible Theory/Theories of Wages in the Study Area

We begin with the **marginal productivity theory** of wages. It is tempting to cite a long passage from **Blaug** that says:

“Marginal productivity theory is often described as a theory of distribution, but that statement is misleading on two accounts. A theory of distribution might be expected to tell us something about personal income distribution, or at any rate the distribution of income between wages, profits and rents. But marginal productivity theory is a theory of factor pricing, not a theory of the distribution of relative shares: it is, as Cannan said long ago, a theory of pseudo-distribution. Moreover, it is not even a complete theory of factor pricing because it has nothing to say about the supply side of factor markets. Strictly speaking, it is only a theory of the demand for a factor. This is why Marshall objected to statements implying that the marginal productivity of a factor ‘determines’ its rate of reward. One might think that in the short run, it would be legitimate to assume that the supply of a productive agent was given. Surely, the supply of labour is fixed in the short run, and hence wages

are effectively governed by the demand price of labour? But if we define a unit of labour not as an individual worker but as an hour's work at the standard level of intensity, then the labour supply curve is by no means perfectly inelastic. If this is so, marginal productivity theory all alone is unable to specify the hourly rate of wages in the labour market. In the long run it is obvious, of course, that the rate of growth of the labour force is an independent element acting on wages. Indeed, in the extreme case of the subsistence theory of wages, the long run supply curve of labour is infinitely elastic and labour's marginal product has no influence whatever upon the rate of wages." (Mark Blaug, pp. 449-50).

Now, if we analyze the (rather long) excerpt from Mark Blaug, we find that having defined a unit of labour not as an individual worker but as a work per small unit of time (a day or an hour for that matter) at the standard level of intensity, **applicability of the marginal productivity theory as an explanatory theory of wages is inversely proportional to flexibility in the supply curve of labour**. A small urban center surrounded by a vast rural area with teeming mass of destitute people ready to work at any rate that will help their two ends meet, would certainly experience a very elastic supply of labour. At that, if in-migration is substantial, it makes the supply of labour further elastic. To add insult to the injury, casual nature of employment on day-to-day basis further augments the elasticity of labour supply. Every evening a casual waged worker is unemployed and the next morning he is in the queue to be picked up by a stranger employer, may be just for an hour or for a day. Under these conditions, it is natural that the supply curve of casual labour in a small urban center is almost perfectly elastic, even in the short

run. Therefore, inapplicability of marginal productivity theory of wages in ‘determining’ the daily wage rate of casual wagedworkers is more than evident.

Secondly, the contract between the (a-day or an-hour) employer and the casual worker is very much subject to what one calls ‘*the moral hazards*’ (**Luenberger**, pp. 432-436; **Byrns and Stone**, p. 435). In general, moral hazard represents a situation in which there is a difference of information after trading (or contract signing) but before the terms have been fulfilled. This contract with adverse selection has asymmetry of information before trading. The difference in information in a moral hazard problem is associated with control of the level of performance. In case of employment of a casual worker, the moral hazard arises because the reward of one party (employer of a casual worker) of a contract (verbal agreement to employ a casual worker for a day or an hour or on a specified job) depends on the performance of another party (the casual worker), and the contract cannot ordinarily be snapped at a poor performance nor it is a basis to extend the contract for a longer period than specified at the outset (the nature of the contract being its limited, very short, duration). Shirking (**de la Fuente**, pp. 644-48) is a frequent phenomenon. The employer, therefore presumes some productivity of the casual worker and in the end when he is in a position to

assess the productivity of the casual worker, the contract is over. This situation fails the marginal productivity theory of wages even in the short run because in case of a casual worker, the contract is too short to allow its applicability. Therefore, the employer of a casual labour underbids the wage to cover the risk of moral hazard and, his bargaining power often being stronger than that of the casual worker, wage rates are often substantially lower than the marginal productivity of the casual worker.

The **Wage Fund Doctrine** has been so frequently ridiculed that it is difficult now a days to appreciate its partial validity in explaining the wage rate prevailing in the labour market at the macro-level. We will not follow the suit hurriedly, but argue why, in determining the daily wage rate of casual wage workers in a small urban center, the doctrine will not be helpful. The wage fund doctrine, first of all, is a theory of demand for labour. Secondly, it is a theory intimately connected to the organized activities of production carried out by firms that supply their output to the market. These firms have a certain plan of turning out goods (or services) in some specified quantity (may be within a range) for which the demand for labour is estimated. To buy that much of labour from the market, an estimated corpus of capital is earmarked. This works as a wage fund that sets the demand for labour. In determining the wage rate of casual wage workers in a small

urban center, we will have to see as to who makes a demand for casual labour and for what purpose. The demand for casual workers' services originates from an unorganized, unspecified, heterogeneous collection of employers. So, there is no question of any specified fund set apart for employing the casual worker. That fails the wage fund theory as a theory of wages to determine wage rates of casual workers in a township like Shillong. The Residual Claimant theory may be a theory to explain the share of labour in an organized productive activities where the employer allocates resources on various factors of production partly according to their productivity and partly according to their scarcity backed up by bargaining power. However, unorganized, ubiquitous and heterogeneous employers of casual workers have nothing to do with imputations that would call for the theory to explain the wage rates of a casual worker. Additionally, it may be pointed out that depending on one's bias one may always claim that a particular factor of production is the claimant of only the residual because it does not have a bargaining power to reckon with. Those justifying profits forward the residual claimant theory of profits and those lamenting low wage rates may put up the residual claimant theory of wages. As a matter of fact, the residual theory of wages begs the question. It suggests that let there

be theories to determine rent, interest and profits and the wages would automatically be determined.

The **Exploitation theory** of wages may be considered as the Bargain theory of wages backed up by the Subsistence theory of wages (and the conditions for its full functioning) plus a little of sentiments. Viewed slightly differently, the subsistence theory of wages is the Bargain theory of wages under the condition that labourers, for whatever reason, have no bargaining power while the employers (and/or other factors of production) has all bargaining powers. Thus it is a special case (the limiting case) of the Bargain theory of wages. Thus seen, the exploitation theory of wages is the bargain theory under some specified conditions plus some sentiments.

Disregarding the sentiments, the applicability of exploitation theory would require us to look into the conditions that make the subsistence theory work in our study area to determine the wage rates of casual wagedworkers. Once that is established, one may add the sentiments back and the exploitation theory will apply in its full force. On the same ground, the Bargain theory also would apply because the Subsistence theory is only a limiting case of the Bargain theory.

It does not require much to conjecture that the **subsistence theory** is an appropriate theory to determine the wage rates of casual workers in our

study area. Daily wages varying around Rs. 50, four to five family members to support and precarious living and housing conditions – poverty aggressively shameless and nude - suggest even to a casual onlooker that casual workers may not earn more than the subsistence wage. That presumed, it would naturally entail poor or no bargaining power with the casual workers. Since they are not (or possibly they cannot be) unionized, they will hardly have any bargaining power. It may be found so after an empirical investigation. Consequently, the exploitation theory may always be invoked, if desired.

There could be a theoretical explanation of very low or subsistence wages of casual workers in a city like Shillong. At low levels of income, in labour markets where unemployment exists due to efficiency wages, the nutritional status (e.g.. body mass) of workers may be very sensitive to the wages paid. In particular, low wages paid today may severely undermine nutritional status in the future and reduce productivity. In casual labour markets, the probability of employing the same worker again in the future may be quite low, so maintenance of the health and efficiency of casual workers is not a concern or interest of the casual employer. If all the employers do not take full account of the impact of their wages on nutritional status, a vicious circle of low nutritional status, low wages and

low productivity may start and perpetuate. This may be illustrated by a simple example. Suppose workers have a reservation wage of Rs. 25 per day (that is, they will refuse to work if paid below that). Suppose the minimum wage to maintain their nutritional status is Rs. 35. The current value of their work effort is Rs. 50. However, if they are paid less than Rs. 35 then their nutritional status will deteriorate, and in the future their productivity will fall to Rs. 35. Suppose there are two employers (E_1 and E_2) and that there is a random matching of workers with employers. This means that tomorrow they will hire one of the workers that they hire today with probability 0.5. The employers effectively choose whether to pay the low wage of 25 (which is just enough to hire the worker), or the high wages of Rs. 35 which will maintain their nutritional status. Consider the two-period pay off to E_1 :

If E_1 pays $w = \text{Rs. } 35$, he earns a surplus of $50-35 = \text{Rs. } 15$ today,
 plus $50-25 = \text{Rs. } 25$ tomorrow, total for today and tomorrow = **Rs. 40**, if E_2 pays the high wage
 or $50/2 + 35/2 - 25 = \text{Rs. } 17.50$, total for today and tomorrow = **Rs. 32.50**, if E_2 pays the low wage.
 If E_1 pays $w = \text{Rs. } 25$, he gets $50-25 = \text{Rs. } 25$ today,
 plus $50/2 + 35/2 - 25 = \text{Rs. } 17.50$ tomorrow, total for today and tomorrow = **Rs. 42.50**, if E_2 pays the high wage,
 or $35-25 = \text{Rs. } 10$, total for today and tomorrow = **Rs. 35**, if E_2 pays the low wage.

Both the employers are absolutely free to decide their action irrespective of what the other chooses to do. The pay-off matrix for this game is, therefore, given by:

The Pay-off Matrix of Employers of Casual workers

	E2		
		W = 35	W = 25
	E1		
	W = 35	40,40	32.50,42.50
	W = 25	42.50,32.50	35,35

This is a classic Prisoner's dilemma (or free rider problem). The *Nash equilibrium* is for both employers to pay the low wage because neither has an incentive to increase their wage if the other does not. The superior outcome (both in terms of wages and their own overall profits) is to pay the high wage. However, each employer always wants to deviate by paying the lower wage if he knows that the other is paying the high wage. If this situation is repeated over time continuous degradation of nutritional status would occur with both employers and workers ending up worse off. With an increase in the number of employers, the equilibrium will become stronger. This illustration explains not only the low wage rates of the casual workers but also the usual dissatisfaction of the employers over the efficiency of casual workers and underbidding their wages whenever possible.

2.5. Some Important Empirical Studies on (Casual) Labour Market

In this section we present some important empirical findings describing the labour market of our interest. Although our study is directly related to casual workers in an informal sector in an urban area, studies on

casual labour market in the rural area/agricultural sector may be of a great value. There is a great deal of communality among the various types (rural/urban and agricultural/industrial/tertiary sector) of casual labour markets, supply of casual labour in these markets and the economic conditions of casual labourers of various types.

ILO (1996) in the report entitled “*Wage workers in agriculture: Conditions of employment and work*” - prepared for discussion at the Tripartite Meeting on improving the conditions of employment and work of agricultural wagedworkers in the context of economic restructuring, held in September, 1996 - noted that there were approximately 1.1 billion workers active in agricultural production worldwide, out of which nearly half were in wage labour. Many millions of these workers earned wages that placed them on the bottom rung of the rural poverty ladder and even below the minimum subsistence level - in spite of rising agricultural trade and labour productivity worldwide. In addition to a high incidence of poverty, the working lives of agricultural wage earners have been characterised by casual forms of labour, precarious working conditions and little or no social protection. Transport conditions for workers to and from the fields are often appalling. Significantly, the share of women in agricultural employment has been increasing, with women accounting for 20-30 per cent of total agricultural

wage employment. Child labour has been pervasive, amounting in some developing countries to as much as 30 per cent of the workforce.

The report pointed out that while international trade in agricultural commodities expanded by roughly 3 per cent annually throughout the 1980's and the mid 1990's, agricultural wagedworkers shared unevenly in the growth. A sample survey of 45 countries from all regions showed that real wages declined for agricultural workers over the last decade in 18 of the countries, with no real-wage changes in 8 others. Moreover, the declines outnumbered the increases: only six of the 45 countries (Argentina, Colombia, Cameroon, Nigeria, Philippines and Sweden) showed strong real wage increases of 30 per cent or more, whereas 13 countries showed a drop of 30 per cent or more. Among the major elements affecting real wage levels in agriculture, agricultural growth, labour force supply, non-farm employment, minimum wages (when they exist) and food prices were found accountable.

Agricultural wagedworkers, the report indicated, spent as much as 70 per cent of their incomes for food. A subsistence wage, defined as an hourly wage sufficient to buy 1 kilogram of the lowest-priced staple cereal, was found lacking in 40 per cent of sample countries. This means, in effect, that

the working time required to obtain this kilogram of cereal "ranged from less than 5 minutes (in Sweden) to over six hours (in Central African Republic), with the median working time being 37 minutes, which corresponds to the position of India. In five countries, mostly in Asia and Africa, the working time was over 3 hours.

A separate survey, based on data from 12 developing countries with large rural populations, showed that in only three countries (Egypt, Morocco and Pakistan) did poverty affect less than 25 per cent of the rural population. In five countries (Brazil, Guatemala, Honduras, Philippines and Zambia) over 50 per cent of all rural workers were below the poverty line. However, in all cases, the incidence of poverty among agricultural wage labour was higher than overall rural poverty.

Indonesia and the Philippines saw a decline in the incidence of rural poverty and poverty among wage labourers. However, the decline of poverty among wage labourers in both countries was less than for the rural population as a whole. Of the 12 countries half displayed an incidence rate above 49 per cent, suggesting that on average close to one in two wage labourers in agriculture is in poverty. In addition to receiving low wages, agricultural labourers were frequently underemployed, working only an

average of 175 days annually (about 15 days per month on an average), leaving them idle approximately one-third of the work year, with little income to sustain them between seasons. While in employment, hours of work tended to be long, often over 45 hours weekly, and dangerous. Agricultural labourers suffer markedly higher rates of accident and fatal injury than workers in other sectors, with very little recourse to compensation. Fewer than 20 per cent of the world's agricultural wage earners were found to be covered by one or more of the nine contingencies of the ILO's Social Security (Minimum Standards) Convention, 1952 (namely medical care, sickness and maternity benefits, family benefits, unemployment benefits, employment injury, invalidity and survivors' benefits, and old-age benefits).

The report highlighted the difficult conditions of work; notably in terms of transport to and from the fields, a problem that is particularly acute due to the migratory, seasonal nature of much agricultural work: In many countries workers in agriculture were transported over long distances from their living quarters to places of work. Conditions were inhuman when large number of workers are packed in open trucks and vehicles never intended for the use of human passengers. Weight limitations were found to be often disregarded and safety considerations ignored. The ILO report cited more

humane and safer conditions of transport as being in the interest of all parties and recommended better equipped vehicles to reduce worker stress and fatigue and hence improve the quality and productivity of work. The report also underlined the need for precise legislation setting out the safety and technical specifications for the transport of workers. as well as stricter observance of collective bargaining agreements on transport.

The report proposed a strategy to build on its previous work in addressing problems in the sector, which, if adopted comprehensively, could help to improve employment prospects, working conditions and income levels for two-fifths of the world's labour force.

The recommendations of the report include:

- (1) Strong labour-intensive growth in agriculture stimulated by investments in infrastructure to generate more employment in and around agriculture;
- (2) major drive in support of more and broader collective bargaining;
- (3) a sustained effort to improve working conditions, from transport to occupational safety and health, including a much reduced incidence of child labour;
- (4) an employment guarantee scheme of, for example, 80 to 100 days of employment per year during the low season;
- (5) effective application of basic labour standards; and
- (6) Extension of basic social security benefits to agricultural wage workers.

ILO finds that the regional distribution of the economically active population in agriculture is dominated by Asia, which accounts for almost

80 per cent of the world's total, followed by Africa (14.3 per cent), Latin America (3.6 per cent) and the rest of the world (3.7 per cent). Two countries alone, China and India, account for over 60 per cent of the world's agricultural labour force, and 78 per cent of the total for Asia. Nigeria has the largest agricultural labour force in Africa, equal to 17.5 per cent of the region's total and 2.5 per cent of the world total.

Though the workforce in agriculture is forecast to grow over the next decade, only three regions of the world - sub-Saharan Africa, South Asia and the Middle East/North Africa - are expected to see increases in their agricultural workforces beyond 2010 by, respectively, 47 per cent, 33 per cent and 14 per cent. The reduced agricultural growth and subsequent decline of the agricultural labour force in East Asia, particularly in China, will decisively influence the world trend, mentions the Report.

The nations of Eastern Europe and the former Soviet Union are forecast to see a particularly large decrease in agricultural wage employment, with the percentage of the agricultural workforce dropping from nearly 18 per cent of the active population in 1990 to approximately 9 per cent by 2010. In Western Europe the agricultural workforce is expected to shrink to less than 3 per cent of the total workforce by 2010, and in North America to just over 1 per cent.

The ILO highlighted the fact that a strong agricultural sector is often a linchpin in the development process. Agriculture is an engine of growth in the early stages of economic development. Although the agricultural sector gives way to higher productivity sectors, the successful transition to higher levels of development is heavily dependent on how the agricultural transition is managed. A strong agricultural sector feeds into strong industrial development, notably via foreign exchange earnings, domestic income redistribution via wages and increased food supplies, which releases workers from agricultural to industry.

Arawal (1990) studied conditions of casual labour of Jaipur and found that in his sample (of 204 workers drawn from a population of some 15000 workers) 59% were illiterate and 66 percent were unskilled; their daily wages varied from Rs. 40 to 60 for skilled and Rs. 25 to 30 for unskilled workers. Unskilled women worked for wages lying between Rs. 20 to 25. In general, they worked for 20 days a month and did not know of any Minimum Wage Act. They generally had migrated from rural areas, resided in Jhuggis and suffered from chronic illness. Of them, 11% consumed liquor, 50% were unable to save, and 39% did not send their children to schools. They were not unionized either because of lack of knowledge about any union or fear of dismissal.

Mishra (1984) found that in Sahabad and Darbhanga districts of (the erstwhile) Bihar, the average real wage rate of agricultural workers declined over time (during 1962-72), since wage rates increased less than the prices of basic commodities making up wage goods. **Mishra & Gaikwad** (1979) found decreasing real wage rates of agricultural labourers (mostly casual workers) in Madhya Pradesh.

Van Hear (1984) observes that the development of agrarian capitalism in Africa has accelerated in recent years and is taking several forms. In some areas, peasant labour is managed by state and International agencies and exploited on Irrigation and settlement schemes; multinational agribusiness is frequently involved. Elsewhere private entrepreneurship by Africans, often subsidised by the state, is prominent, and the hire of wage labour by such entrepreneurs is widespread and expanding. It is with the latter form of capitalist agriculture that this paper is concerned. In many parts of Africa the development of capitalist agriculture has led to impoverishment of rural people and increased their exploitation. But this has not always been the case and it is not inevitable. In northern Ghana the rural population has not succumbed to the all-powerful, rampant capitalism of the orthodox Marxist model. The real activity of rural labour has constrained the emergence of capitalist rice farming from the late 1960s. Through their

struggles, labourers have done relatively well. This paper examines how capitalist farmers attempted to mobilise labour, to induce workers' commitment to capitalist production and how exploitation is carried on. All three processes involve struggles between capital and labour which have shaped agricultural development in the north.

Rodger (2001) finds that the proportion of Australian workers who are employed on either a part-time or a casual basis has been increasing for the past several decades. By the beginning of the 21st century, 30 percent of employment is of this type. The common perception seems to be that part-time and casual jobs are undesirable. The Committee for Economic Development, Australia, asserted, "60% of all casual workers require more hours to ensure a living wage". However, economic status depends not only upon the worker's own earnings but also on his or her living arrangements and the earnings of other members of his or her family. Rodger uses unit-record data from the ABS' latest Income and Housing Cost Survey and Forms of Employment Survey to compare the poverty rates of part-time and casual workers with those of full-time workers, permanent workers, the unemployed and people not in the labour force.

Pal (2002) offers an explanation of labour tying commonly observed in agricultural economies. Employers may either hire regular labourers in the

slack season to satisfy all or most of the labour demand in the high season but have underutilised labour in the low-demand season or rely on casual labourers only. Thus farmers hiring regular labour may also hire some casual labour as and when needed to minimise the hoarding costs of regular labour. Secondly, daily regular wages are usually lower than daily casual wages, but regular labourers usually get some wage-advance as well. Thus asset-poor workers have incentives to choose regular labour with interest-free wage advance because they face high marginal costs of credit in the segmented credit markets. The optimum hoarding costs decrease with increase in farm size, but increase with increase in spot market wages. However with improved availability of alternative employment opportunities and/or cheaper credit facilities to the asset-poor labourers, the supply of regular labour is likely to decline. Empirical evidence from the ICRISAT villages in south India seems to be consistent with the primary propositions of the model.

Rogaly (1998) considers seasonal migration in different regions of India and argues the need for a better understanding of social and economic relations and the circumstances under which migration can affect these to the benefit of poor migrant workers.

In a penetrating anthropological study of the working poor in India, **Jan Breman** (2001) examines the lives of those who, pushed out of the agrarian labour market, depend on casual work. Beginning his local-level research in two villages in south Gujarat, the author discusses the mobilisation of casual labour, which is hired and fired according to the need of the moment, and transferred for the duration of the job to destinations far away from the home area. His case study reveals that the circulation of labour is indicative of an employment pattern which dominates both the rural and urban economy of large parts of South Asia. Elaborating on the social profile of the work migrants, the author argues that both class and caste shape relations their identity and, despite action by state agencies, nothing of significance has been achieved to improve their quality of life.

Reddy (2002) observes that attached labour, one of the institutions of labour market in rural areas, has been on the decline in Andhra Pradesh. On the other hand, the casual labour institution is on the rise, according to a Baseline survey in sustainable livelihood framework, conducted by the Centre for Economic and Social Studies (CESS) in the districts of Adilabad, Anantapur and Srikakulam.

While the attached labour institution, despite its exploitative nature, provides continuous employment, cyclical credit and psychological support,

the casual labour situation cannot ensure any such benefits, states the survey report prepared by the CESS. The report says casual labour *per se* is not an undesirable institution provided continuous employment with higher wage rate is available to ensure decent standard of living. This is possible only when the growth rate of the economy is high. But the economy in the project area is at a low level of growth. As a result, the poor resort to migration, which has a negative impact on well being in terms of discontinuity in children's education and less access to health facilities despite higher wages in urban areas.

The survey was conducted for the Society for Elimination of Rural Poverty as a part of an attempt to evaluate the impact of the Andhra Pradesh District Poverty Initiative Project (APDPIP), which is being implemented in six districts of the State. APDPIP aims to alleviate poverty in all its forms, including child labour, through establishing strong and vibrant poor people's institutions. It also supports demand-driven economic projects to increase and consolidate economic gains on sustainable basis.

The survey reveals that formal institutions do not provide access to credit for the poor. Hence, the poor secure credit from informal institutions at higher interest rates.

The costly credit cuts largely into profits from any economic activity undertaken by the poor. Moreover, their credit needs are larger than their savings. Consequently, savings-linked credit may not enable the poor to opt for any viable livelihood strategy.

The poor are spending a larger proportion of their amounts on cereals among food items. Thus, their nutritional needs are not taken care of. They are also spending lower amounts on health and education. This has led to low level of human capital resulting in low labour productivity and thereby, low income. The strategy of depending more on wage employment and migration has not reduced poverty, the report points out.

Gothoskar (2000) observes that casualisation of labour is becoming a common experience not just in India, but in most other countries as well. "We've been working in this company as daily-wage workers for almost a decade now. We gave our best years here. We thought we would be made permanent and would be able to enjoy at least some form of post-retirement benefits. But with the present situation being what it is, when even permanent workers are being pressurized to leave, there is little hope for us," says Nirmala Bai who works in a light engineering medium-scale company in an industrial estate in Mumbai.

The process of casualisation is being documented at the macro and the micro level in the last few years. According to NSS data, those classified as casual labour increased from 23 per cent in 1972-73 to 32 per cent in 1993-94. This has been true for both men (20 to 30 per cent) and for women (31 to 37 per cent), though the process has been faster for men than for women. However, women have a higher level of casual employment than men do. This process has occurred in both rural and urban areas, leading to a decline in the shares of both self-employed and 'regular' employees. It has also been argued that the extent of casualisation is hardly an underestimation because a variety of 'self employed' are in fact casual labourers. From the point of view of women, this process of casualisation has a different significance. Women's employment has largely been in the primary sector, which declined only marginally from 84 per cent in 1972-73 to 78 percent in 1993-94. Their share in the secondary sector increased marginally from 9.6 to 11 per cent and in the tertiary sector from 7.5 to 11 per cent. Outside agriculture, the tertiary sector has been expanding fast and its contribution to the National Domestic Product (NDA) has become twice as important since 1951. But its share in the workforce has not been growing at the same rate. Between 1977-78 and 1983, the sector had absorbed about 27 per cent of the additional labour. In the period between 1987- 88 and 1993-94, this

proportion had remained almost unchanged. The bulk of the additional employment opportunities created in the tertiary sector were in trade and transport and most of this growth was in rural areas. In this expansion too, men were the chief gainers. Women's employment in the tertiary sector expanded in urban areas between 1983 and 1993 which in turn increased their share of regular service employment. Here too, the increase was also mainly in domestic service jobs. Notably, 95 per cent of the women are in the unorganised sector. The labour market in India has always been dominated by the unorganised sector. Some sectors like agriculture and construction, employing the largest section of the workforce, have always had a majority of the workers in casualised employment.

The proponents of the casualisation process, mainly employers and their representatives, advance variants of the following argument: 'In the present scenario of globalisation and competition, employers need operational flexibility in order to respond quickly to changes in the market, to innovate technologically and to deal efficiently with ups and downs in the flow of work..' This is achieved by employing a 'core' of secure, permanent, multiskilled, full-time employees and a 'periphery' of marginal, generally single-skilled workers who may be part-time or temporary, casual or on contract, directly or indirectly employed in a variety of 'new' ways'. This was

put forward as the most and only efficient way of conducting business by Dais, the management lawyer of several employers at a recent workshop organised by the CEC.

Such arrangements are often prescribed as a means of transforming fixed costs - the regular wage bill and associated costs of employing permanent workers like postretirement benefits, medical expenses and office/factory overheads - into variable costs, which are incurred only for the duration of particular projects and imply no long-term commitments by employers.

It is also argued in many circles that 'increasingly workers and employees too prefer this mode of employment as it takes care of their autonomy and freedom in terms of time allocation'. These arguments have been immensely popular, especially in the mainstream media and need to be critically examined.

However, there is nothing new in casualised employment, either in India or elsewhere. Casual employment, which has always existed in various forms, may be viewed against what is termed as permanent or secure employment.

A casual worker is expected to be available when required but is guaranteed no work and towards whom the employer has no responsibility other than to pay for the work actually carried out. 'Casual workers' is in a sense a broad term that may encompass disparate groups of workers who have little in common other than being regarded by their employers as a pool of labour to be drawn on when required and dispensed with, when not.

There have been casual workers since the beginning of industrialization. One such section were the 'badli' workers in the textile mills in the 1930s and later. Several large establishments including the Indian railways have had casual workers for several decades now.

The book edited by **Parry, Bremen and Kapadia** (1999) is a collection of articles, which analyses a wide spectrum of employer-labour relations that have resulted from intricate and diverse sociological processes generated by industrial relations in the post-colonial history of India. The attempt is ambitious, given the intricacy of interdisciplinary forces at play, and the wide range of socio-cultural relations that have been studied.

In the introductory chapter, **Johnathan Parry** clearly explains the relevance of this study. He expresses regret and concern over the myopic vision of contemporary research on Indian industrial labour, which focuses,

on one extreme, on the theoretical economics of industrialization, or, on the other extreme on the anthropological details of sociology. With the exception of a few heroic attempts, this unfortunate gap between the economic and sociological foci of labour research has, by and large, remained unbridged. Valuable knowledge has been lost. Parry accuses this journal, (i.e., *Contributions to Indian Sociology*) of getting bogged down with studies concerning anthropological intricacies and persistently neglecting the more contemporarily relevant field of industrial sociology and labour.

The most powerful message of this volume is the heterogeneity of labour behaviour in Indian industry and the folly of making any sweeping generalization in this regard. Taking a bird's eye view of the constituent articles one can conclude that in each industry, labour has a very strong local character shaped by a specific interplay of economic, social, historical and anthropological factors. It is inappropriate to go by theoretical assumptions and conclusions of Western Economic Models that treat labour as a homogenous entity. In India, it is impossible to make the blanket assumption that industrial labour is only surplus labour from agriculture. Marginal productivity/cost considerations constitute only one of the myriads of factors governing the decision to employ every additional unit of labour. It is of

fundamental importance to understand the social relations among labourers on the industrial shop floor, as to study the relations between capital and labour.

Though the traditions set by Marx, Weber and Polanyi prompt us to associate industrial capitalism with free labour, studies in this volume draw attention to various kinds of bonded labour in the Indian industrial milieu. Surprisingly none of this bondage is any legacy of colonial or feudal history. It is a reflection of new forms of bondage emerging from industrial capitalism, current market conditions and the more recent phenomenon of widespread casualization of labour.

The studies have revealed the great importance of caste, gender and kinship equations in labour-employer relationships and in the relations between the labourers themselves. In some cases both employers and workers are victims to these equations and in some other cases the employer uses them to his advantage to bind casual labour. In yet other cases the industrial scene serves as a melting pot where differences in caste, creed and kinship are transcended to pave the way for workers' solidarity. Then there are cases where industry is an escape from the exploitation net of caste hierarchies.

The first article by **Jan Breman** gives us an introductory review on post-colonial industrial labour in India in the formal sector. Industrial labour was visualized largely as agricultural labour that had drifted away from villages and moved into small or medium towns. It was supposed that in spite of rapid urbanisation, the mental frame of the workers was still grounded in traditional agriculture and therefore they were less amenable to discipline and work ethics required by modern industry. It reminds us of the observations made by **Morishima** (pp. 124-26). Even so, skills were formed, and so was solidarity. Trade Unions did a great deal to improve their lot. But all this pertained only to a small fraction of the Indian industrial labour force.

The second article by **Dilip Simeon** "Work and resistance in the Jharia Coalfields" serves as a starting point for understanding miners' struggles in modern India. The history of the coal mining industry is sketched from the pre-colonial period. Labour struggles in this area have their root in the tribal movement of the hinterland. Working conditions and safety standards were deplorable. Poverty and displacement made workers vulnerable. Even so, recalcitrance was determined. Determination in the face of repeated and crushing struggles have made Indian colliery labour a force to reckon with.

Christopher Pinney in his chapter "On living in Kalyug: Notes from Nagda in Madhya Pradesh", reveals a dichotomy of attitudes towards industrialization, between the local affluent high castes and the poverty stricken low castes. Nagda, in Madhya Pradesh, is the site of a large viscose rayon factory employing significant number of workers from surrounding villages. Pollution, health and safety conditions are as bad as employment conditions. The local high castes portray a negative picture of the age of machines which they identify with "Kalyug" - the age of evil by religious dictum. They do whatever they can to scare workers away from the industry. The poverty-stricken low castes however take a positive view of the industry which from their perspective is a refuge for escape from the net of the traditional caste hierarchy where they are endlessly exploited.

J. Parry reviews labour relations in a public sector industry in his article "Lords of Labour: Working and Shirking in Bhillai". He deals with workers who have permanent jobs. The industrial milieu has served as a melting pot where workers have transcended primordial hierarchies and attained a common identity. Their resistance to employers' domination have come in the form of blatant absenteeism, relaxed time-keeping, and less consciousness than is fair to expect from them, given their circumstances. Their solidarity has gone a long way in easing communal tensions inherent

in the region. Private industries in the area show a continuation of primordial hierarchies within their labour force and therefore less solidarity.

Historical memory is tempered by present circumstances. This theme is central to the chapter by **Haynes**, concerning the textile industries of Surat and Bhiwandi. Employers employed the same people over and over again. So the production unit resembled an extended family. There was little or no acrimony in employer-labour relations. Therefore, they were resistant to labour organisation and proper class-consciousness had failed to develop.

Chitra Joshi's article on the textile workers of Kanpur also shows how history is perceived through present conditions. 1937-38 was a time of militant working class struggle when workers had felt empowered to challenge their employers and control their destiny. At that time workers had felt that it was a period of glory. But in the 1990s workers of the same place are vulnerable and fragmented in the face of industrial recession. They now see neither merit nor glory of united rebellion or struggle.

R. Chandravarkar studies the emergence of class-consciousness during the general strikes for Bombay, 1928-29. He concluded that class-consciousness among workers does not come naturally, and is not an irreversible change. It is created through political struggle and dialogue, and dissipates when these forces fail to persist. **Samita Sen's** study on the

Bengal jute industry shows how patriarchal society and capitalist industry have gone hand in hand in marginalising and victimizing women workers. Women did informal and unskilled jobs. Capitalist employers ensured complete control over them through the men folk who had better and more secure jobs. As these men moved up the economic ladder, they forcibly domesticated their womenfolk.

De Haan in his study of the "badli" system of recruitment in jute mills around Calcutta, counters Sen's point by asserting that existing gender and other hierarchies in the industry were not contrived or fuelled by employers but resulted from the complex behaviour of the labourers themselves. The latter was determined by complex socio-cultural factors. The employers however did use the situation to their advantage. In the "badli" system a pool of casual (often women) labourers were maintained to tide employers over migration of workers, even those holding more secure jobs.

Peter Knorringa's study of artisan labour in the Agra footwear industry portrays the systematic victimization and marginalization of the untouchable Jatav caste by the proliferation of the footwear industry. Earlier this industry was handicraft based and the Jatav community played an important role by virtue of their traditionally acquired skills. Investment of

capital ushered in mechanization. Labour could be hired from unskilled touchable castes and the Jatavs could be done away with.

In **Kapadia's** study of rural industrial classes in South India there is a hint that class interest of capital mediate labour relations. When Rangoon Diamonds were handcrafted, there was a premium on skill, which was sought to be retained within the caste whose loyalty could be taken for granted and exploited. To exercise tighter control, employers preferred to employ wives of workers. When the American diamond industry got going skill was no longer important. Every attempt was now made to make labour as flexible as possible. Now, young unmarried middle class women were preferred for their intrinsic submissiveness and docility.

Miranda Engelshoven studies the diamond industry of Surat run by the Patels. This industry is characterized by harsh living condition and use of violence and torture by employers. Yet there has been little or no resistance. This is because employers and employees belong to the same caste whose cohesion and loyalty are beyond question.

Geert De Neve conducts a study of the Tamil Nadu powerloom industry, where employers try to bind workers by paying them advances called "baki". Workers would be obliged to work for the same employers till his debt is repaid. The employer hereby hopes to obtain some stability of

control over his workers. Many workers escape to other employers; sometimes to other towns.

The series of articles in this volume clearly show that informal and fragmented labour is far more subject to local conditions (shaped by social, cultural and historical factors), than industrial labour in the organized sector. Thus informal labour apart from falling outside the protection of labour laws, is not amenable to efforts of forming trade unions. They are very vulnerable to their employers. Therefore, as far as World Bank prompted policies of industrial liberalization have led to widespread proliferation of private sector industry, which in turn has casualised labour, they can be said to have been regrettably insensitive to the welfare of industrial labour. In every fragment of Indian industry, employers have been able to use local preconditions to their advantage and push their labourers into further dependence.

Upreti (2002) observes that Indo-Nepal migration though an international migration has certain peculiarities due to geographical, socio-cultural and political factors. The geographical continuity between the two countries, socio-cultural similarities and inter-linkages, the 1950 Treaty of Peace and Friendship and an open border has made migration between the countries a regular and an easy task. The migration of people from the far

western hill region of Nepal to the neighbouring Indian city of Pithoragarh is a typical case of migration under marginality conditions. These Nepali emigrants involved in casual labour works and as porters are constrained to migrate for a certain period of time in a year due to subsistence agriculture and non-availability of other means of livelihood. Pithoragarh region provides an opportunity to them to find out alternative means of livelihood and also gives an opportunity to them for cash earnings. These cash earnings are necessary in order to meet basic needs of their family.

Ghose (2003) critically examines the present policy of the Govt. of India especially on problems of unemployment, labour and job creation. She observes that the 55th round of the NSS, held in 1999-2000, indicates a dramatic decline in the rate of employment generation in the latest period. The rate of growth of employment, defined in terms of the current daily status (which is a flow measure of the extent of jobs available) declined from 2.7 per cent per year in 1983-94 to 1.07 per cent per year in 1994-2000 for India as a whole. For rural areas, the decline was even sharper, from 2.4 per cent in the previous period to less than 0.67 per cent over 1994-2000. This was well below the rate of growth of population. In both rural and urban areas, the absolute number of unemployed increased substantially, and the rate of unemployment went up as well. But in addition to this, there was a

sharp decline in the rate of growth of labour force. More people declared themselves to be not in the labour force, possibly driven to this state by the shortage of jobs. A significant part of the collapse in employment occurred in agriculture, where the employment elasticity of output growth (the extent to which additional output creates additional demand for jobs) declined from 0.7 in 1983-94 to only 0.01 in 1994-2000. Aggregate employment elasticity of output fell from 0.52 to 0.16 over the same two periods. Organised employment also has been extremely sluggish. Ghose observes that if the Central government was really serious about increasing employment and encouraging greater access to and better quality of our public services, it would have pushed for an expansion of public employment, especially in crucial areas such as infrastructure building and repair, health, sanitation, education, and so on. Instead, the government has ignored the problem altogether.

Pushpangadan (1992) provides information on how casual labourers working in the agriculture sector of Kerala cope up with the problems of shaky employment opportunities and low wage rates. **Olsen** (1999) analyses the interrelations among social forces and institutions structure of casual labour market in India.

Ilkaracan & Selim (2002) present an empirical estimation of the correlation between wages and regional unemployment rates in Turkey, more specifically it explores the role of regional unemployment rates in wage determination. The analysis builds upon a series of recent empirical studies on the wage-unemployment relationship, now commonly known as “the wage curve,” a downward sloping curve in wage-unemployment space. The existing studies are for most part in advanced market economies, while this paper presents one of the few attempts at a wage curve analysis within the context of a developing market economy. A cross-sectional estimation of micro level individual wage data for the Turkish labor market in 1994, suggest a statistically significant negative correlation between wages and regional unemployment rates. Separate regressions for men and women, however, show a wage curve to exist only in the male labor market. The study also presents the results on other variables of wage determination such as returns to schooling, returns to age, job tenure, and gender, industrial and occupational affiliation of the worker, economic sector and union status.

The paper by **Pylkkanen** (2001). Consists of two parts. In the first part it introduces a wage model and in the second part we construct a household labor supply model. Both models are intended to be a part of the dynamic micro simulation model, Sesim, developed by the Ministry of

Finance, Sweden. Hourly wage rates are explained by a random coefficient panel data model. To avoid the sample-selection problem a model explaining the probability of observing a wage rate is suggested. Labor supply of single- and two-adult households are modeled as a discrete choice problem. The household labor supply model is estimated assuming that preference for leisure and consumption can be described by a direct translog utility function. When constructing the households' budget sets the complete taxation scheme and the main social benefit programs are taken into account. The wage elasticities are estimated to about 0.3 for both females and males, irrespective of the household type. However, the responses to simulated tax reforms differ between sexes and household types.

Visaria (1998) discusses the problems related with youth employment in great details. Youth unemployment and teeming number of jobseekers in the urban informal sector have some common facets and the problems of casual labour market are closely related to them.

As we shall see, the research works outlined above have direct or indirect bearing on the work at hand. They provide a reference point to our analysis. Our analyses may corroborate some of them while the others may prove to be the points of departure.

Chapter 3

INCOME OF CASUAL WORKERS AND THE CASUAL LABOUR MARKET IN SHILLONG

3.1. Introduction

The objective of this chapter is to investigate into the labour market of casual wageworkers in Shillong, especially from the viewpoint of supply of labour originating from the worker households. In this investigation, characteristics of the worker household, nominal wage rates prevailing in the market and wage earnings of the worker household are the major variables to be studied and correlated with each other.

3.2. The Data Base

Tables 3.2(v) through 3.2(vii) contain the relevant data collected from the sample households of wageworkers during December 1996-January 1997 to January 2000. The number of households in the sample is 140. The total number of casual workers from these households is 266. About 68 percent of the total casual wage-workers (in the sample) are male. About 77 percent of the total casual wage workers (in the sample) are purely unskilled, and the rest are semi-skilled (*though we have used the word 'skilled' for them, and it should not be taken literally or in a technical sense*). About a half of the total number of 140 households have only one earning member

(who is a casual wage worker) while about $\frac{3}{4}$ of the total 140 households have at most two earning members (casual wage workers).

Table 3.2(i): Sex-wise Skill-wise Distribution of Wage workers

	Male	Female	Total
Skilled	59 (22.18)	3 (1.13)	62 (23.31)
Un-skilled	123 (46.24)	81 (30.45)	204 (76.69)
Total	182 (68.42)	84 (31.58)	266 (100.00)

Figures in the parentheses are percent to total.

Table 3.2(ii): Frequency Distribution of Households Supported by Wageworkers as Earners

	Number of Wage Earners who support the Household				
No. of Wage-Earners	One	Two	Three	Four	Five
Frequency	69	38	17	10	6
Cumulative frequency	69	107	124	134	140
Percentage	49.3	27.1	12.1	7.1	4.3
Cumulative percentage	49.3	76.4	88.6	95.7	100.0

Table 3.2(iii): Frequency Distribution of the No. of Family Members in the Wage Workers' Household

	No. of Family Members in the Household of the Casual Wage Worker (inclusive)										
NF	1	2	3	4	5	6	7	8	9	10	>10
Frq	4	8	13	28	27	20	14	14	5	2	5
%	2.9	5.7	9.3	20.0	19.3	14.3	10.0	10.0	3.6	1.4	3.5
C%	2.9	8.6	17.9	37.9	57.1	71.4	81.4	91.4	95.0	96.4	100.0

NF = No. of Family Members; Frq = Frequency of the household; % = Percentage to total (140) and C% = Cumulative Frequency.

On an average, the size of the wageworkers' household is 5.4 members (including the wage worker). About 43 percent of households have at least five members and about 19 percent of the households have at least 7 members in the family. Over three percent of the households are quite large with ten or more family members. Literacy of the wageworker has hardly been effective in reducing the size of the family since the households of

literate wageworkers are not smaller. In fact, when family size is regressed on education of the wageworker, we get positive (significant) regression coefficients (table 3.2(iv): in EDN_{0F} etc. 0 = uneducated, 1=can read and write, 2=below matriculation and 3=matriculate; M=male, F= female).

Table 3.2(iv): Regression Coefficients of Family Size on Indicators of Education Status of the Casual Wage Worker Household

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.019	.371		10.838	.000
	EDN0F	1.547	.380	.319	4.076	.000
	EDN0M	-.476	.674	-.056	-.706	.481
	EDN1F	1.012	.304	.261	3.325	.001
	EDN1M	.873	.234	.302	3.729	.000
	EDN2F	-.379	.621	-.050	-.610	.543
	EDN2M	.711	.416	.148	1.708	.090
	EDN3F	1.451	1.141	.102	1.272	.206
	EDN3M	-.719E-03	.791	-.001	-.009	.993

Monthly Wage Income of Casual Wage Workers in Shillong

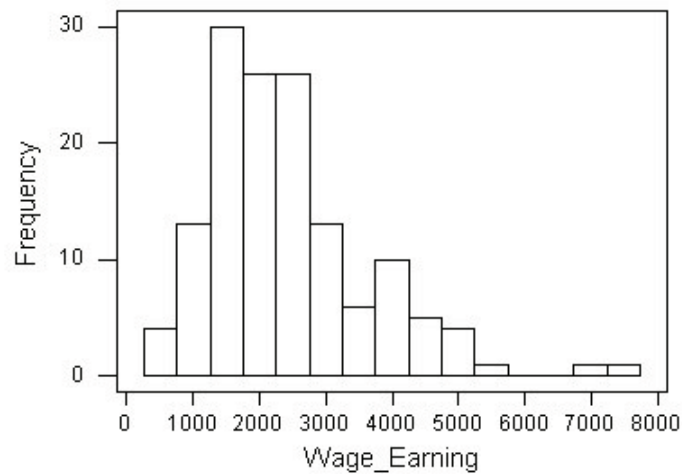


Table 3.2(v): Particulars Regarding Casual Wage Workers (Sample Households) in Shillong

Hh No	No. of Wrkrs In Hh		Particulars regarding Skilled Workers																Particulars regarding Un-skilled Workers							
			Skilled Male Workers in Hhold				Skilled Female Workers in Hhold				Un-skilled Male Workers in Hhold				Un-skilled Female Workers in Hhold											
	M	F	N	WL	WH	WD	N	WL	WH	WD	N	WL	WH	WD	N	WL	WH	WD								
1	4	0	0	0	0	0	0	0	0	0	4	60	60	22	0	0	0	0								
2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	20	20	30								
3	1	0	1	50	50	30	0	0	0	0	0	0	0	0	0	0	0	0								
4	1	0	0	0	0	0	0	0	0	0	1	50	100	24	0	0	0	0								
5	1	0	0	0	0	0	0	0	0	0	1	100	200	22	0	0	0	0								
6	1	1	0	0	0	0	0	0	0	0	1	60	250	24	1	10	10	30								
7	2	0	1	90	100	22	0	0	0	0	1	50	60	17	0	0	0	0								
8	1	1	0	0	0	0	0	0	0	0	1	80	80	25	0	0	0	0								
9	1	0	0	0	0	0	0	0	0	0	1	50	50	30	1	20	20	30								
10	1	2	0	0	0	0	1	30	50	25	1	40	40	30	1	8	8	25								
11	2	1	1	60	100	18	1	30	50	20	1	60	60	30	0	0	0	0								
12	1	1	1	80	90	22	0	0	0	0	0	0	0	0	1	30	30	30								
13	2	2	0	0	0	0	0	0	0	0	2	50	50	14	2	23	23	18								
14	3	2	0	0	0	0	0	0	0	0	3	40	80	18	2	32	32	25								
15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	30	30	20								
16	1	0	0	0	0	0	0	0	0	0	1	64	64	25	0	0	0	0								
17	1	0	0	0	0	0	0	0	0	0	1	45	45	25	0	0	0	0								
18	1	0	1	50	50	30	0	0	0	0	0	0	0	0	0	0	0	0								
19	2	0	0	0	0	0	0	0	0	0	2	50	60	25	0	0	0	0								
20	1	0	0	0	0	0	0	0	0	0	1	50	120	24	0	0	0	0								
21	1	0	0	0	0	0	0	0	0	0	1	50	50	24	0	0	0	0								
22	1	1	0	0	0	0	0	0	0	0	1	65	65	25	1	50	50	18								
23	1	0	0	0	0	0	0	0	0	0	1	60	60	22	0	0	0	0								
24	1	1	0	0	0	0	0	0	0	0	1	50	80	21	1	20	20	30								
25	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	10	100	24								
26	1	0	0	0	0	0	0	0	0	0	1	50	60	24	0	0	0	0								
27	1	0	0	0	0	0	0	0	0	0	1	60	70	23	0	0	0	0								
28	1	1	0	0	0	0	0	0	0	0	1	60	60	20	1	25	25	10								
29	1	1	0	0	0	0	0	0	0	0	1	50	80	22	1	20	20	24								
30	1	0	0	0	0	0	0	0	0	0	1	50	100	22	0	0	0	0								
31	1	1	0	0	0	0	0	0	0	0	1	50	60	21	1	28	28	25								
32	1	0	0	0	0	0	0	0	0	0	1	50	80	23	0	0	0	0								
33	2	1	1	80	120	21	0	0	0	0	1	40	40	30	1	28	28	20								
34	1	0	1	80	80	22	0	0	0	0	0	0	0	0	0	0	0	0								
35	4	1	0	0	0	0	0	0	0	0	4	15	50	25	1	20	20	30								
36	1	0	0	0	0	0	0	0	0	0	1	50	60	24	0	0	0	0								
37	1	2	0	0	0	0	0	0	0	0	1	60	60	24	0	0	0	0								
38	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	30	35	14								
39	2	0	1	80	80	25	0	0	0	0	1	20	20	25	0	0	0	0								
40	1	0	0	0	0	0	0	0	0	0	1	50	60	15	0	0	0	0								
41	1	0	0	0	0	0	0	0	0	0	1	50	70	24	0	0	0	0								
42	1	0	0	0	0	0	0	0	0	0	1	60	60	22	0	0	0	0								
43	1	0	1	50	50	30	0	0	0	0	0	0	0	0	0	0	0	0								

44	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	50	60	23
45	3	0	1	80	80	22	0	0	0	0	2	50	60	21	0	0	0	0
46	1	0	1	40	40	25	0	0	0	0	0	0	0	0	0	0	0	0
47	1	1	1	50	100	24	0	0	0	0	0	0	0	0	1	30	30	24
48	1	1	1	50	120	22	0	0	0	0	0	0	0	0	1	20	20	25
49	1	1	1	60	120	23	0	0	0	0	0	0	0	0	1	25	25	2
50	1	0	1	80	80	18	0	0	0	0	0	0	0	0	0	0	0	0
51	1	0	0	0	0	0	0	0	0	0	1	30	90	24	0	0	0	0
52	2	0	2	36	110	24	0	0	0	0	0	0	0	0	0	0	0	0
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84	1	0	0	0	0	0	0	0	0	0	1	70	70	20	0	0	0	0
85	1	1	0	0	0	0	0	0	0	0	1	80	120	24	1	16	16	25
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88	1	1	1	40	40	30	0	0	0	0	0	0	0	0	1	35	35	21
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98	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	35	35	30
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100	4	1	0	0	0	0	0	0	0	0	4	45	80	20	1	100	100	24
101	1	1	0	0	0	0	0	0	0	0	1	70	70	20	1	16	16	25
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103	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	20	20	25
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112	1	0	1	100	100	25	0	0	0	0	0	0	0	0	0	0	0	0
113	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	13	45	23
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115	2	0	0	0	0	0	0	0	0	0	2	50	60	19	0	0	0	0
116	3	2	0	0	0	0	0	0	0	0	3	30	60	25	2	15	63	20
117	1	0	1	90	90	24	0	0	0	0	0	0	0	0	0	0	0	0
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120	2	0	1	50	50	30	0	0	0	0	1	40	40	25	0	0	0	0
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122	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	40	40	25
123	3	1	0	0	0	0	0	0	0	0	3	40	60	21	1	30	30	24
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125	1	0	0	0	0	0	0	0	0	0	1	60	60	24	0	0	0	0
126	1	0	1	100	100	24	0	0	0	0	0	0	0	0	0	0	0	0
127	1	0	0	0	0	0	0	0	0	0	1	60	60	24	0	0	0	0
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133	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	32	32	25
134	1	0	1	50	50	30	0	0	0	0	0	0	0	0	0	0	0	0
135	1	0	0	0	0	0	0	0	0	0	1	70	70	22	0	0	0	0
136	1	0	0	0	0	0	0	0	0	0	1	55	55	24	0	0	0	0
137	1	2	0	0	0	0	0	0	0	0	1	80	80	22	2	16	20	30
138	1	2	1	120	120	22	0	0	0	0	0	0	0	0	2	20	20	30
139	1	0	1	80	100	23	0	0	0	0	0	0	0	0	0	0	0	0
140	2	1	0	0	0	0	0	0	0	0	2	60	70	23	1	5	5	30

Note: Hh = Household; M = Male Worker ; F = Female Worker ; N = No. of Workers of a specified type;
 WL = Lower Wage rate; WH = Higher Wage Rate; WD = No. of Work-Days engaged during a Month.

**Table 3.2(vi): Mean Daily Wage Rate, No. of Work-Days
In a Month and Monthly Wage Earnings of Casual Wage-Workers**

[illegible]

47	75	24	1	1800	0	0	0	0	0	0	0	0	30	24	1	720
48	85	22	1	1870	0	0	0	0	0	0	0	0	20	25	1	500
49	90	23	1	2070	0	0	0	0	0	0	0	0	25	2	1	50
50	80	18	1	1440	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	60	24	1	1440	0	0	0	0
52	73	24	2	3504	0	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	60	23	1	1380	0	0	0	0
54	100	23	1	2300	0	0	0	0	0	0	0	0	45	20	1	900
55	0	0	0	0	0	0	0	0	35	30	1	1050	0	0	0	0
56	0	0	0	0	0	0	0	0	75	23	1	1725	0	0	0	0
57	0	0	0	0	0	0	0	0	65	23	1	1495	25	20	1	500
58	0	0	0	0	0	0	0	0	35	30	1	1050	0	0	0	0
59	0	0	0	0	0	0	0	0	65	21	2	2730	0	0	0	0
60	0	0	0	0	0	0	0	0	65	24	1	1560	10	30	1	300
61	0	0	0	0	0	0	0	0	45	20	1	900	35	24	4	3360
62	0	0	0	0	0	0	0	0	100	24	1	2400	0	0	0	0
63	90	19	1	1710	0	0	0	0	0	0	0	0	20	25	1	500
64	0	0	0	0	0	0	0	0	0	0	0	0	75	30	1	2250
65	105	21	1	2205	0	0	0	0	0	0	0	0	0	0	0	0
66	125	20	1	2500	0	0	0	0	0	0	0	0	0	0	0	0
67	40	25	1	1000	0	0	0	0	35	24	2	1680	0	0	0	0
68	0	0	0	0	0	0	0	0	50	24	1	1200	25	21	2	1050
69	90	20	1	1800	0	0	0	0	0	0	0	0	0	0	0	0
70	95	21	1	1995	0	0	0	0	65	21	2	2730	0	0	0	0
71	0	0	0	0	0	0	0	0	50	30	1	1500	0	0	0	0
72	0	0	0	0	0	0	0	0	80	22	1	1760	0	0	0	0
73	0	0	0	0	0	0	0	0	38	25	4	3800	0	0	0	0
74	40	25	1	1000	0	0	0	0	50	30	2	3000	20	20	1	400
75	0	0	0	0	0	0	0	0	32	25	1	800	0	0	0	0
76	0	0	0	0	0	0	0	0	70	22	1	1540	32	25	1	800
77	80	25	1	2000	0	0	0	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0	0	0	0	28	25	1	700
79	90	21	1	1890	0	0	0	0	0	0	0	0	0	0	0	0
80	100	22	1	2200	0	0	0	0	65	18	1	1170	30	30	1	900
81	0	0	0	0	0	0	0	0	55	20	1	1100	20	30	1	600
82	0	0	0	0	0	0	0	0	75	25	1	1875	22	25	1	550
83	40	25	1	1000	28	25	1	700	32	25	1	800	0	0	0	0
84	0	0	0	0	0	0	0	0	70	20	1	1400	0	0	0	0
85	0	0	0	0	0	0	0	0	100	24	1	2400	16	25	1	400
86	0	0	0	0	0	0	0	0	70	22	1	1540	30	25	3	2250
87	40	25	2	2000	0	0	0	0	0	0	0	0	16	25	1	400
88	40	30	1	1200	0	0	0	0	0	0	0	0	35	21	1	735
89	0	0	0	0	0	0	0	0	55	21	2	2310	15	30	1	450
90	120	26	1	3120	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	100	25	1	2500	0	0	0	0
92	100	25	1	2500	0	0	0	0	0	0	0	0	0	0	0	0
93	100	22	1	2200	0	0	0	0	0	0	0	0	22	25	1	550
94	85	25	1	2125	0	0	0	0	0	0	0	0	0	0	0	0
95	100	23	1	2300	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	50	22	3	3300	28	25	1	700
97	0	0	0	0	0	0	0	0	70	18	2	2520	25	20	2	1000
98	0	0	0	0	0	0	0	0	0	0	0	0	35	30	1	1050
99	80	25	1	2000	0	0	0	0	0	0	0	0	20	25	1	500

100	0	0	0	0	0	0	0	0	62.5	20	4	5000	100	24	1	2400
101	0	0	0	0	0	0	0	0	70	20	1	1400	16	25	1	400
102	0	0	0	0	0	0	0	0	0	0	0	0	25	30	2	1500
103	0	0	0	0	0	0	0	0	0	0	0	0	20	25	2	1000
104	50	30	1	1500	0	0	0	0	0	0	0	0	0	0	0	0
105	150	23	1	3450	0	0	0	0	0	0	0	0	0	0	0	0
106	85	23	1	1955	0	0	0	0	72.5	21	2	3045	0	0	0	0
107	100	30	1	3000	0	0	0	0	20	25	1	500	0	0	0	0
108	80	25	1	2000	0	0	0	0	0	0	0	0	0	0	0	0
109	140	21	1	2940	0	0	0	0	0	0	0	0	0	0	0	0
110	50	30	1	1500	0	0	0	0	0	0	0	0	26	20	1	520
111	100	25	1	2500	0	0	0	0	0	0	0	0	0	0	0	0
112	100	25	1	2500	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0	29	23	4	2668
114	90	23	2	4140	0	0	0	0	60	20	2	2400	15	30	1	450
115	0	0	0	0	0	0	0	0	55	19	2	2090	0	0	0	0
116	0	0	0	0	0	0	0	0	45	25	3	3375	39	20	2	1560
117	90	24	1	2160	0	0	0	0	0	0	0	0	0	0	0	0
118	92	22	2	4048	0	0	0	0	50	10	1	500	0	0	0	0
119	110	20	1	2200	0	0	0	0	70	20	2	2800	0	0	0	0
120	50	30	1	1500	0	0	0	0	40	25	1	1000	0	0	0	0
121	0	0	0	0	0	0	0	0	80	24	1	1920	50	23	1	1150
122	0	0	0	0	0	0	0	0	0	0	0	0	40	25	1	1000
123	0	0	0	0	0	0	0	0	50	21	3	3150	30	24	1	720
124	0	0	0	0	0	0	0	0	70	23	1	1610	0	0	0	0
125	0	0	0	0	0	0	0	0	60	24	1	1440	0	0	0	0
126	100	24	1	2400	0	0	0	0	0	0	0	0	0	0	0	0
127	0	0	0	0	0	0	0	0	60	24	1	1440	0	0	0	0
128	0	0	0	0	0	0	0	0	20	30	1	600	0	0	0	0
129	0	0	0	0	0	0	0	0	45	18	2	1620	38	26	2	1976
130	120	23	1	2760	0	0	0	0	0	0	0	0	0	0	0	0
131	0	0	0	0	0	0	0	0	0	0	0	0	32	25	1	800
132	0	0	0	0	0	0	0	0	54	21	2	2268	0	0	0	0
133	0	0	0	0	0	0	0	0	0	0	0	0	32	25	1	800
134	50	30	1	1500	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	70	22	1	1540	0	0	0	0
136	0	0	0	0	0	0	0	0	55	24	1	1320	0	0	0	0
137	0	0	0	0	0	0	0	0	80	22	1	1760	18	30	2	1080
138	120	22	1	2640	0	0	0	0	0	0	0	0	20	30	2	1200
139	90	23	1	2070	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	65	23	2	2990	5	30	1	150

Note: Hh = Household; N = No. of Workers of a specified type; AW = Mean Wage rate = (WL+WH)/2;
 WY= Monthly Earning from Wages)

**Table 3.2(vii): Supply of Labour, Earning per Worker
And Monthly Wage Earning of Casual Wage-Workers in Shillong**

Hh No	Supply of Labour Days/month				Earning per Labour day/Household				Monthly Wage Earning by the workers in the Sample Households (in Rs.)		
	Skilled		Unskilled		Skilled		Unskilled		Skilled Workers	Unskilled Workers	Total Workers
	M	F	M	F	M	F	M	F			
1	0	0	88	0	0	0	240	0	0	5280	5280
2	0	0	0	30	0	0	0	0	0	600	600
3	30	0	0	0	50	0	0	0	1500	0	1500
4	0	0	24	0	0	0	75	0	0	1800	1800
5	0	0	22	0	0	0	150	0	0	3300	3300
6	0	0	24	30	0	0	155	0	0	4020	4020
7	22	0	17	0	95	0	55	0	2090	935	3025
8	0	0	25	0	0	0	80	0	0	2000	2000
9	0	0	30	30	0	0	50	0	0	2100	2100
10	0	25	30	25	0	40	40	1000	1000	1400	2400
11	18	20	30	0	80	40	60	800	2240	1800	4040
12	22	0	0	30	85	0	0	0	1870	900	2770
13	0	0	28	36	0	0	100	0	0	2228	2228
14	0	0	54	50	0	0	180	0	0	4840	4840
15	0	0	0	20	0	0	0	0	0	600	600
16	0	0	25	0	0	0	64	0	0	1600	1600
17	0	0	25	0	0	0	45	0	0	1125	1125
18	30	0	0	0	50	0	0	0	1500	0	1500
19	0	0	50	0	0	0	110	0	0	2750	2750
20	0	0	24	0	0	0	85	0	0	2040	2040
21	0	0	24	0	0	0	50	0	0	1200	1200
22	0	0	25	18	0	0	65	0	0	2525	2525
23	0	0	22	0	0	0	60	0	0	1320	1320
24	0	0	21	30	0	0	65	0	0	1965	1965
25	0	0	0	48	0	0	0	0	0	2640	2640
26	0	0	24	0	0	0	55	0	0	1320	1320
27	0	0	23	0	0	0	65	0	0	1495	1495
28	0	0	20	10	0	0	60	0	0	1450	1450
29	0	0	22	24	0	0	65	0	0	1910	1910
30	0	0	22	0	0	0	75	0	0	1650	1650
31	0	0	21	25	0	0	55	0	0	1855	1855
32	0	0	23	0	0	0	65	0	0	1495	1495
33	21	0	30	20	100	0	40	0	2100	1760	3860
34	22	0	0	0	80	0	0	0	1760	0	1760
35	0	0	100	30	0	0	130	0	0	3850	3850
36	0	0	24	0	0	0	55	0	0	1320	1320
37	0	0	24	0	0	0	60	0	0	1440	1440
38	0	0	0	28	0	0	0	0	0	910	910
39	25	0	25	0	80	0	20	0	2000	500	2500
40	0	0	15	0	0	0	55	0	0	825	825
41	0	0	24	0	0	0	60	0	0	1440	1440
42	0	0	22	0	0	0	60	0	0	1320	1320
43	30	0	0	0	50	0	0	0	1500	0	1500
44	0	0	0	23	0	0	0	0	0	1265	1265
45	22	0	42	0	80	0	110	0	1760	2310	4070
46	25	0	0	0	40	0	0	0	1000	0	1000

47	24	0	0	24	75	0	0	0	1800	720	2520
48	22	0	0	25	85	0	0	0	1870	500	2370
49	23	0	0	2	90	0	0	0	2070	50	2120
50	18	0	0	0	80	0	0	0	1440	0	1440
51	0	0	24	0	0	0	60	0	0	1440	1440
52	48	0	0	0	146	0	0	0	3504	0	3504
53	0	0	23	0	0	0	60	0	0	1380	1380
54	23	0	0	20	100	0	0	0	2300	900	3200
55	0	0	30	0	0	0	35	0	0	1050	1050
56	0	0	23	0	0	0	75	0	0	1725	1725
57	0	0	23	20	0	0	65	0	0	1995	1995
58	0	0	30	0	0	0	35	0	0	1050	1050
59	0	0	42	0	0	0	130	0	0	2730	2730
60	0	0	24	30	0	0	65	0	0	1860	1860
61	0	0	20	96	0	0	45	0	0	4260	4260
62	0	0	24	0	0	0	100	0	0	2400	2400
63	19	0	0	25	90	0	0	0	1710	500	2210
64	0	0	0	30	0	0	0	0	0	2250	2250
65	21	0	0	0	105	0	0	0	2205	0	2205
66	20	0	0	0	125	0	0	0	2500	0	2500
67	25	0	48	0	40	0	70	0	1000	1680	2680
68	0	0	24	42	0	0	50	0	0	2250	2250
69	20	0	0	0	90	0	0	0	1800	0	1800
70	21	0	42	0	95	0	130	0	1995	2730	4725
71	0	0	30	0	0	0	50	0	0	1500	1500
72	0	0	22	0	0	0	80	0	0	1760	1760
73	0	0	100	0	0	0	152	0	0	3800	3800
74	25	0	60	20	40	0	100	0	1000	3400	4400
75	0	0	25	0	0	0	32	0	0	800	800
76	0	0	22	25	0	0	70	0	0	2340	2340
77	25	0	0	0	80	0	0	0	2000	0	2000
78	0	0	0	25	0	0	0	0	0	700	700
79	21	0	0	0	90	0	0	0	1890	0	1890
80	22	0	18	30	100	0	65	0	2200	2070	4270
81	0	0	20	30	0	0	55	0	0	1700	1700
82	0	0	25	25	0	0	75	0	0	2425	2425
83	25	25	25	0	40	28	32	700	1700	800	2500
84	0	0	20	0	0	0	70	0	0	1400	1400
85	0	0	24	25	0	0	100	0	0	2800	2800
86	0	0	22	75	0	0	70	0	0	3790	3790
87	50	0	0	25	80	0	0	0	2000	400	2400
88	30	0	0	21	40	0	0	0	1200	735	1935
89	0	0	42	30	0	0	110	0	0	2760	2760
90	26	0	0	0	120	0	0	0	3120	0	3120
91	0	0	25	0	0	0	100	0	0	2500	2500
92	25	0	0	0	100	0	0	0	2500	0	2500
93	22	0	0	25	100	0	0	0	2200	550	2750
94	25	0	0	0	85	0	0	0	2125	0	2125
95	23	0	0	0	100	0	0	0	2300	0	2300
96	0	0	66	25	0	0	150	0	0	4000	4000
97	0	0	36	40	0	0	140	0	0	3520	3520
98	0	0	0	30	0	0	0	0	0	1050	1050
99	25	0	0	25	80	0	0	0	2000	500	2500

100	0	0	80	24	0	0	250	0	0	7400	7400
101	0	0	20	25	0	0	70	0	0	1800	1800
102	0	0	0	60	0	0	0	0	0	1500	1500
103	0	0	0	50	0	0	0	0	0	1000	1000
104	30	0	0	0	50	0	0	0	1500	0	1500
105	23	0	0	0	150	0	0	0	3450	0	3450
106	23	0	42	0	85	0	145	0	1955	3045	5000
107	30	0	25	0	100	0	20	0	3000	500	3500
108	25	0	0	0	80	0	0	0	2000	0	2000
109	21	0	0	0	140	0	0	0	2940	0	2940
110	30	0	0	20	50	0	0	0	1500	520	2020
111	25	0	0	0	100	0	0	0	2500	0	2500
112	25	0	0	0	100	0	0	0	2500	0	2500
113	0	0	0	92	0	0	0	0	0	2668	2668
114	46	0	40	30	180	0	120	0	4140	2850	6990
115	0	0	38	0	0	0	110	0	0	2090	2090
116	0	0	75	40	0	0	135	0	0	4935	4935
117	24	0	0	0	90	0	0	0	2160	0	2160
118	44	0	10	0	184	0	50	0	4048	500	4548
119	20	0	40	0	110	0	140	0	2200	2800	5000
120	30	0	25	0	50	0	40	0	1500	1000	2500
121	0	0	24	23	0	0	80	0	0	3070	3070
122	0	0	0	25	0	0	0	0	0	1000	1000
123	0	0	63	24	0	0	150	0	0	3870	3870
124	0	0	23	0	0	0	70	0	0	1610	1610
125	0	0	24	0	0	0	60	0	0	1440	1440
126	24	0	0	0	100	0	0	0	2400	0	2400
127	0	0	24	0	0	0	60	0	0	1440	1440
128	0	0	30	0	0	0	20	0	0	600	600
129	0	0	36	52	0	0	90	0	0	3596	3596
130	23	0	0	0	120	0	0	0	2760	0	2760
131	0	0	0	25	0	0	0	0	0	800	800
132	0	0	42	0	0	0	108	0	0	2268	2268
133	0	0	0	25	0	0	0	0	0	800	800
134	30	0	0	0	50	0	0	0	1500	0	1500
135	0	0	22	0	0	0	70	0	0	1540	1540
136	0	0	24	0	0	0	55	0	0	1320	1320
137	0	0	22	60	0	0	80	0	0	2840	2840
138	22	0	0	60	120	0	0	0	2640	1200	3840
139	23	0	0	0	90	0	0	0	2070	0	2070
140	0	0	46	30	0	0	130	0	0	3140	3140

Note: N = No. of Workers of a specified type; AW = Mean Wage rate = (WL+WH)/2; WY= Monthly Earning from Wages); Hh = Household.

3.3. On the Earnings of a Casual Wage Worker

Now the following queries may be made regarding the earnings of casual wageworkers in Shillong.

- (1). How the wage earning (per month) of a household (of a Casual wage earner) relates to the number of wageworkers in the household?
- (2). Does casual wage earning respond to time or has casual wage earning increased over time?
- (3). If casual wage earning has increased over time, is this increase due to an increase in the wage rate or an increase in the number of days of engagement in the month?
- (4). In case the casual wage earning has remained constant, is it so due to an increase in the wage rate associated with a compensating decrease in the number of days of employment in a month (income effect on supply of labour or demand for leisure) or vice versa?
- (5). In case the casual wage earning has decreased, is it due to decrease in the wage rate or a decrease in the number of days of engagement in a month?

To answer these questions, we have regressed the casual wage earning of the sample households on (1) numbers of different categories of labourers (skilled male, skilled female, unskilled male and unskilled female workers) who are the members of the household, (2) year (or month) to which the data belong, (3) number of days of employment in a month. We may set our model as follows:

$$\text{Wagearn} = a_0 + a_1 (\text{nskm}) + a_2 (\text{nskf}) + a_3 (\text{nunm}) + a_4 (\text{nunf}) + a_5 (\text{year}) + e.$$

where, wagearn = monthly wage earning of the household, nskm = number of skilled male workers (who are the members of the household), nskf = no. of skilled female workers, nunm = no. of unskilled male workers, nunf = no. of unskilled female workers, and year = point of time at which wage data have been collected. The estimated model is as follows:

$$\begin{aligned} \text{wagearn} = & 427.813 + 1519.551 \text{ nskm} + 263.280 \text{ nskf} + 1054.699 \text{ nunm} + 557.877 \text{ nunf} \\ & (3.287) \quad (14.066) \quad (0.724^*) \quad (17.318) \quad (8.149) \\ & + 39.617 \text{ year}; \quad R^2 = .753 \\ & (.787^*) \quad ; \quad F = 81.7 \end{aligned}$$

We know that wage earning of a particular category (say, skilled male worker) is a product of (a) *number* of workers (in the household) in that particular category = n_j , (b) *daily wage rate* of that category prevailing in the market = wr_j , (c) *number of days of engagement* of the workers (of that category) during a month = wd_j . That is : **wagearn_j = wd_j x wr_j x n_j**, where the subscript j signifies a particular category of worker. Hence the coefficients associated with n_j in the equation above refer to the average (estimated) $wd_j \times wr_j$. We observe that $(wd \times wr) = 1519.6$ for skilled male workers, $(wd \times wr) = 1054.7$ for unskilled male workers and $(wd \times wr) = 557.9$ for unskilled female workers. These coefficients are statistically significant. On the other hand, $(wd \times wr) = 263.3$ for skilled female workers, which is statistically insignificant. In fact, the female skilled

workers are only a few (only 3) in the sample and that might be the reason for its statistical insignificance. The coefficient associated with year is positive, but statistically insignificant. Therefore, it is quite likely that (wd x wr) has remained constant over the years. The regression analysis carried out to explain the total (wd x wr) as a function of dummy variables representing participation of the households in supplying labour to the market and time variable (year) reveals that the coefficient associated with it (i.e. year) is statistically insignificant.

Table 3.3(0) Symbols and mnemonics used for denoting variables

wagearn	= monthly wage earning of the household
nskm	= no. of skm = skilled male workers (members of the household)
nskf	= no. of skf = skilled female workers (members of the household)
unm	= no. of unm = unskilled male workers (members of the household)
unf	= no. of unf = unskilled female workers (members of the household)
year	= point of time at which wage data have been collected
wd_j	= No. of days of engagement/employment of a casual wage worker of type j (skilled, unskilled, male, female) during a month
wr_j	= Daily wage rate of a casual wage worker, type j (skm, skf, etc) at a particular time
Dumskf, dumskm, dumunf, dumunm	= dummy variable (1 =yes, 0 = no) pertaining to the households for a particular type of casual wage worker
Nwd_j	= no. of a particular type of casual wage worker (skm, skf, unm, unf) times the no. of days of engagement/employment during a month/period = n_j x wd_j .
Nwr_j	= no. of a particular type of casual wage worker (skm, skf, unm, unf) times the wage rate/day prevailing for his specification times 1 day = n_j x wr_j x (1 day) .
TOT	= Denotes that a generic variable – pure or compound - (e.g. wd or wdwr) that has several types (e.g. wd_j or wd_jwr_j ; j = skm, skf, etc.) is aggregated over all of its particulars (e.g. $\sum_{j=skf,skm,unf,unm} wd_j wr_j$)

**Table 3.3(i): Regression estimates for
Total WD x WR regressed on Dummies of Types of Casual Wage Workers**

WDWRTOT= f(*****)		Coefficients	Std. Error	Beta	t value	Sig.
	(Constant)	427.727	157.314		2.719	.007
R ² = 0.892	DUMSKF	288.154	332.542	.051	.867	.388
F = 222.21	DUMSKM	1551.294	124.690	.927	12.441	.000
	DUMUNF	519.486	100.820	.315	5.153	.000
	DUMUNM	1041.147	122.147	.618	8.524	.000
	YEAR	17.566	44.997	.023	.390	.697

**Table 3.3(ii): Regression estimates for
Total WR regressed on Dummies of Types of Casual Wage Workers**

WRTOT= f(*****)		Coefficients	Std. Error	Beta	t value	Sig.
	(Constant)	14.200	7.223		1.966	.051
R ² = 0.554	DUMSKF	3.249	15.269	.013	.213	.832
F = 33.27	DUMSKM	70.684	5.725	.928	12.346	.000
	DUMUNF	24.434	4.629	.326	5.278	.000
	DUMUNM	49.811	5.608	.649	8.881	.000
	YEAR	0.157	2.066	.005	.076	.940

**Table 3.3(iii): Regression estimates for
Total WD regressed on Dummies of Types of Casual Wage Workers**

WDTOT = f(****)		Coefficients	Std. Error	Beta	t value	Sig.
	(Constant)	1.756	1.234		1.423	.157
R ² = 0.891	DUMSKF	28.144	2.917	.280	9.649	.000
F = 276.79	DUMUNF	23.302	.889	.795	26.226	.000
	DUMUNM	21.844	1.076	.729	20.304	.000
	DUMSKM	22.232	1.091	.747	20.370	.000

There might be three (alternatively) possible reasons for this. First, that neither *wd* nor *wr* has significantly changed over time, second that while *wr* has increased, *wd* has decreased to compensate the effects, and third that while *wr* has decreased, *wd* has increased to compensate the effects. We set up a regression model to investigate into this problem.

**Table 3.3(iv): Regression estimates for
Total Wage Income regressed on Supply of Wage Labour days per Month**

WAGEARN = f (*****)		Coefficients	Std. Error	Beta	t value	Sig.
	(Constant)	471.581	147.960		3.187	.002
R ² =0.685	NWDSKF	1.863	17.506	.005	.106	.915
F=58.37	NWDSKM	61.313	5.133	.669	11.945	.000
	NWDUNF	25.039	3.188	.401	7.855	.000
	NWDUNM	45.198	3.091	.774	14.622	.000
	YEAR	29.139	57.250	.026	.509	.612

**Table 3.3(v): Regression estimates for
Wage Income regressed on Composite Wage rate per day**

WAGEARN = f (*****)		Coefficients	Std. Error	Beta	t value	Sig.
	(Constant)	191.758	54.612		3.511	.001
R ² =0.957	NWRSKF	27.083	4.173	.118	6.490	.000
F=594.27	NWRSKM	20.810	.522	.824	39.829	.000
	NWRUNF	20.726	.863	.451	24.013	.000
	NWRUNM	20.437	.450	.887	45.437	.000
	YEAR	29.745	21.187	.026	1.404	.163

From the results we obtain a sufficient indication to the plausible fact that while the number of days put to work has remained stable, wage earning responds better to NWR, that is the no. of workers times the wage rate. The coefficient associated with year has now improved in its statistical significance. Now it is positive and significant at 80 percent probability. It indicates to about 2 percent annual increase in the wage earning.

Income as Wage earning plus extra: Skilled male Casual workers receive some extra income on certain types of assignment. In such assignments, their daily wage rate is normally not higher than unskilled male workers, but due to extra earning they are partly compensated. The mean extra earning-

extrain - (of those who receive such an earning) is Rs 438 (approx.) with standard deviation = Rs. 309 (approx.) per month making an average rate of Rs. 20 (approx) per working day in a month (about 23 to 24 days).

Table 3.3(vi): Wage Earning, Extra Earning and Income : Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
EXTRAIN	140	.0000	1200.0000	437.585*	309.273*
INCOME	140	700.0000	7400.0000	2555.35	1233.043
WAGEARN	140	600.0000	7400.0000	2389.34	1218.433

- Note: In computing the mean and SD, the observations with EXTRAIN = 0 not included.

Table 3.3(vii) Frequency Distribution of Casual Workers receiving Extra Earning over Daily Wages						
Extra Earnings	0	1 - 100	101- 200	201-500	501-1000	1001-1200
No. of Workers	87	12	7	17	16	1

3.4. Education level of the Worker's household and Wage earnings

To investigate into the effects of education level of the household of casual worker on the household's earning, we have regressed wage earnings and income (wage earnings + extra) on various indicators of the educational level of the worker household. Except for EDN2F and EDN3F, all regression coefficients are statistically firm. Even in case of EDN3F, the coefficient is statistically significant at (approximately) 2 percent level. EDN0F and EDN1F have almost equal coefficients (about 525-531). EDN3F has a slight advantage (coefficient = 875- 891 approx.). In case of male workers, EDN0M, EDN1M and EDN2M yield more or less the same earning (coefficients lying between 872 and 1115 and in view of their standard errors, they may hardly be discriminated from each other). However, EDN3M definitely yields a larger wage earning than what

EDN0M does. Overall, earnings of the literate/educated are larger than that of the illiterate.

Table 3.4(i): Education level and Wage Earnings of Casual Wage Workers

WAGEARN = f (*****)		Coefficient	Std. Error	Beta	t value	Sig.
$R^2 = 0.679$	(Constant)	755.479	123.552		6.115	.000
F = 34.35	EDN0F	526.554	126.491	.213	4.163	.000
	EDN0M	872.888	224.613	.202	3.886	.000
	EDN1F	524.876	101.441	.265	5.174	.000
	EDN1M	1085.807	77.962	.737	13.927	.000
	EDN2F	290.735	206.933	.074	1.405	.162
	EDN2M	992.817	138.703	.406	7.158	.000
	EDN3F	874.137	380.335	.121	2.298	.023
	EDN3M	1286.367	263.622	.250	4.880	.000

Table 3.4(ii): Education level and Income of Casual Wage Workers

INCOME = f(*****)		Coefficient	Std. Error	Beta	t value	Sig.
$R^2 = 0.701$	(Constant)	874.132	120.560		7.251	.000
F = 38.06	EDN0F	532.086	123.428	.213	4.311	.000
	EDN0M	896.999	219.173	.205	4.093	.000
	EDN1F	531.054	98.984	.265	5.365	.000
	EDN1M	1118.489	76.074	.751	14.703	.000
	EDN2F	202.995	201.922	.051	1.005	.317
	EDN2M	1115.124	135.344	.451	8.239	.000
	EDN3F	891.283	371.124	.122	2.402	.018
	EDN3M	1122.188	257.237	.216	4.362	.000

INCOME = Wagearn + extra income

3.5. Discrimination across Various Types of Casual Wage Workers

It is relevant to investigate into the question if the market discriminates across the various types of casual wage workers (male/female or skilled/unskilled) in matters of employment and wage rate, ultimately affecting the wage earning and income of a household. For this purpose, we have regressed wage earning and income on the dummy variables

representing various specifications of the casual wagers. The coefficients (of regression) for wage earning are presented in table 3.5(i-a).

Table 3.5(i-a): Wage Earning Determined by the Type of a Casual Wage worker

WAGEARN = f (****)		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.425	(Constant)	174.869	236.881		.738	.462
F = 24.995	DUMSKF	-462.767	559.852	-.055	-.827	.410
	DUMSKM	1823.225	209.484	.733	8.703	.000
	DUMUNF	1018.006	170.549	.416	5.969	.000
	DUMUNM	1713.079	206.502	.684	8.296	.000

Table 3.5(i-b): Wage Earning Determined by the Type of a Casual Wage worker

WAGEARN = f (****)		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.752	(Constant)	483.261	109.288		4.422	.000
F = 102.30	NSKF	228.932	360.717	.027	.635	.527
	NSKM	1537.114	105.551	.695	14.563	.000
	NUNF	564.427	67.858	.369	8.318	.000
	NUNM	1054.921	60.815	.801	17.346	.000

Table 3.5(ii): Income Determined by the Type of a Casual Wage worker

INCOME = f (****)		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.803	(Constant)	561.120	98.638		5.689	.000
F = 137.30	NSKF	488.315	325.564	.058	1.500	.136
	NSKM	1721.219	95.265	.769	18.068	.000
	NUNF	561.394	61.245	.363	9.166	.000
	NUNM	1062.621	54.888	.797	19.360	.000

INCOME = Wagearn + extra income

Similarly, when wage earnings are regressed on n_j (no. of a specified worker in a household), we find that the coefficient associated with NSKF is statistically insignificant, which might be due to the reason that there are only a few female skilled workers in our sample (only three in number in the sample of 140). Unskilled female workers earn the least (Rs. 560 approx.). Unskilled male workers earn about Rs. 1060 while skilled male workers earn

around Rs. 1500 to 1700. The differences among the regression coefficients associated with NUNF, NUNM and NSKM are statistically significant.

Next, we inquire if the market discriminates between the communities that the workers hail from. We conclude that in this regard, there is not much discrimination in general and especially in case of an unskilled male worker, there is no discrimination, for sure. Though we have not collected our data in view of this type of classification, we know that certain communities entertain a taboo against beef eating and the casual workers from some communities only exceptionally (may) eat beef. Then, certain communities cannot generally own a house in Shillong and if they own a house, their economic conditions are too far better to expose them to the harshness of the casual labour market in the city. The worker, who does not own a house, usually lives in a rented house. Nevertheless, some workers are commuters from the nearby villages. These two criteria taken together might have a significant power in discriminating between the communities in Shillong.

Looking into the regression coefficients associated with NSKM (skilled male), NUNF (unskilled female), NUNM (unskilled male) while they explain WAGEARN, we find that skilled male workers from a particular community (specified as $dumbeef = 1$, $houseown = 1$ and $dumrent = 0$) earn a little more than the skilled workers from the other community do. The

regression coefficients for the two communities collected from the relevant tables are $[(1679, 1677, 1746), (1364, 1569, 1543)]$. The range defined by these coefficients is $[1364, 1746]$. The standard error of none of these coefficients is large enough to tide over such a wide gap. However, in between the coefficients emerging from a dichotomous classification, differences are not uniformly large

The un-skilled male workers from the one community (specified as $\text{dumbeef} = 1$, $\text{houseown} = 1$ and $\text{dumrent} = 0$) earn a little less than the unskilled workers from the other community do. The regression coefficients for the two communities collected from the relevant tables are $[(1060, 936, 944), (1117, 1069, 1064)]$. The range defined by these coefficients is $[936, 1064]$. The standard error of these coefficients is large enough to tide over such a small gap. Therefore, in case of unskilled male workers, the market does not discriminate between the communities from which the wageworkers come.

The un-skilled female workers from the one community (specified as $\text{dumbeef} = 1$, $\text{houseown} = 1$ and $\text{dumrent} = 0$) earn a little more than the unskilled female workers from the other community do. The regression coefficients for the two communities collected from the relevant tables are $[(608, 744, 792), (311^*, 568, 556)]$. The range defined by these coefficients

is [556, 792], as the * coeff. is insignificant. The standard error of these coefficients is generally not large enough to tide over such a gap. So, in case of unskilled female workers, the market shows some sign of discrimination between the communities from which the female un-skilled workers come.

We constructed a dummy variable taking on the value of unity if the worker is a befeater, has an owned house (and does not pay rent) or zero otherwise. Then we have tried to explain wage earning by NSKM, NUNF and NUNM for the two groups, one for which this dummy variable takes on zero and another for which it takes on unity. Regression analysis yields the coefficients that are not significantly different from each other. Thus, except (possibly) some traces of discrimination between skilled male workers and unskilled female workers, the market is ambivalent to the casual wageworkers coming from different communities. This conclusion remains unchanged in case we analyze income (wage earning plus extra income) instead of wage earning. It would not be out of place to mention that when a worker is hired for a longer period and salaries (per month) are paid to him, the case of discrimination is more vivid. Such considerations either on part of the employer or the worker does not come while hiring a casual worker for a day or two, specially if the worker is an unskilled man.

Table 3.5(iii-a): Wage Earnings determined by Community Type

WAGEARN = f (***) Dumbeef = 1		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.794	(Constant)	396.095	117.644		3.367	.001
F = 126.8	NSKM	1679.211	117.522	.724	14.288	.000
	NUNF	608.443	67.879	.427	8.964	.000
	NUNM	1059.791	67.160	.770	15.780	.000

Table 3.5(iii-b): Wage Earnings determined by Community Type

WAGEARN = f(***) Dumbeef = 0		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.750	(Constant)	420.345	295.564		1.422	.172
F = 17.95	NSKM	1364.014	218.289	.817	6.249	.000
	NUNF	311.227	265.693	.140	1.171	.257
	NUNM	1116.535	184.488	.783	6.052	.000

Table 3.5(iii-c): Wage Earnings determined by Community Type

WAGEARN = f (***) Houseown = 1		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.897	(Constant)	537.597	235.454		2.283	.037
F = 43.56	NSKM	1676.735	207.386	.691	8.085	.000
	NUNF	743.584	165.765	.384	4.486	.000
	NUNM	936.077	124.865	.656	7.497	.000

Table 3.5(iii-d): Wage Earnings determined by Community Type

WAGEARN = f (***) Houseown = 0		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.742	(Constant)	409.243	124.024		3.300	.001
F = 97.81	NSKM	1568.665	118.941	.752	13.189	.000
	NUNF	567.624	72.460	.412	7.834	.000
	NUNM	1068.913	75.136	.779	14.226	.000

Table 3.5(iii-e): Wage Earnings determined by Community Type

WAGEARN = f (***) Dumrent = 0		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.898	(Constant)	435.547	212.505		2.050	.056
F = 49.63	NSKM	1745.530	196.730	.707	8.873	.000
	NUNF	791.837	158.069	.402	5.009	.000
	NUNM	943.843	131.533	.589	7.176	.000

Table 3.5(iii-f): Wage Earnings determined by Community Type

WAGEARN = f (***) Dumrent = 1		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.746	(Constant)	436.150	125.883		3.465	.001
F = 97.69	NSKM	1543.405	120.325	.736	12.827	.000
	NUNF	556.141	73.269	.402	7.590	.000
	NUNM	1063.976	73.139	.798	14.547	.000

Table 3.5(iv-a): Wage Earnings determined by Community Type

WAGEARN = f (*****)		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.784	(Constant)	271.780	158.029		1.720	.088
F = 71.27	NSKM	1596.832	103.772	.733	15.388	.000
	NUNF	577.131	66.094	.390	8.732	.000
	NUNM	1056.976	64.777	.764	16.317	.000
	NSKF	-425.588	597.313	-.031	-.713	.478
	DUMBEEF	163.759	140.456	.051	1.166	.246
	HOUSEOWN	111.716	147.806	.033	.756	.451

Table 3.5(iv-b): Income determined by Community Type

INCOME = f (*****)		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.834	(Constant)	423.939	140.110		3.026	.003
F = 98.95	NSKM	1765.880	92.005	.800	19.193	.000
	NUNF	571.619	58.600	.381	9.755	.000
	NUNM	1069.805	57.432	.764	18.627	.000
	NSKF	40.377	529.584	.003	.076	.939
	DUMBEEF	80.002	124.530	.025	.642	.522
	HOUSEOWN	130.850	131.046	.038	.998	.320

Table 3.5(v): Wage Earnings/Income determined by Community Type

WAGEARN = f (***) Beef-houseown-norent = 1		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.895	(Constant)	568.040	254.647		2.231	.044
F = 36.88	NSKM	1645.206	222.703	.678	7.387	.000
	NUNF	759.191	175.898	.399	4.316	.001
	NUNM	937.409	143.127	.614	6.549	.000
INCOME = f (***) Beef-houseown-norent = 1		Coefficient	Std. Error	Beta	T value	Sig.
R ² = 0.902	(Constant)	733.949	247.108		2.970	.011
F = 39.88	NSKM	1730.503	216.110	.710	8.008	.000
	NUNF	716.717	170.690	.374	4.199	.001
	NUNM	935.930	138.890	.610	6.739	.000

Table 3.5(vi): Wage Earnings/Income determined by Community Type

WAGEARN = f (***) Beef-houseown-norent = 0		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.747	(Constant)	410.463	122.065		3.363	.001
F = 102.51	NSKM	1569.673	117.593	.748	13.348	.000
	NUNF	566.210	71.744	.407	7.892	.000
	NUNM	1063.692	72.291	.791	14.714	.000
INCOME = f (***) Beef-houseown-norent = 0		Coefficient	Std. Error	Beta	t value	Sig.
R ² = 0.815	(Constant)	471.983	106.057		4.450	.000
F = 152.28	NSKM	1773.063	102.172	.833	17.354	.000
	NUNF	562.347	62.336	.399	9.021	.000
	NUNM	1092.391	62.811	.801	17.392	.000

Income = Wagearn + extra income

3.6. Time Trends in Wage rates

The wage rate of unskilled casual workers does not exhibit any significant trend over the years (during 3 years 1997 – 2000), though some increase has certainly been discernible. However, the wage rate of the skilled workers has exhibited a significant positive trend.

Table 3.6(i): Trends in the Daily Wage Rate of Casual Wage Workers

Year	Month	Skilled Casual Labour	Unskilled Casual Labour	Year	Month	Skilled Casual Labour	Unskilled Casual Labour
0.08	1	56.69127	43.295	1.83	22	81.44772	45.682
0.25	3	59.04903	43.527	2.17	26	86.16323	46.146
1.25	15	73.19557	44.891	2.67	32	92.67269	46.828
1.67	20	79.08996	45.464	3.25	39	101.4887	47.619

Table 3.6(ii-a): Determinants of Trends in General Wage Rates of Casual Workers

WG = f (***)= Wage General		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.279	(Constant)	59.819	7.296		8.199	.000
F = 17.58	DUMSK	19.954	4.883	.373	4.087	.000
	DUMUN	-12.321	6.062	-.185	-2.033	.044
	YEAR	2.146	1.814	.088	1.183	.239

Table 3.6(ii-b): Determinants of Trends in General Wage Rates of Casual Workers

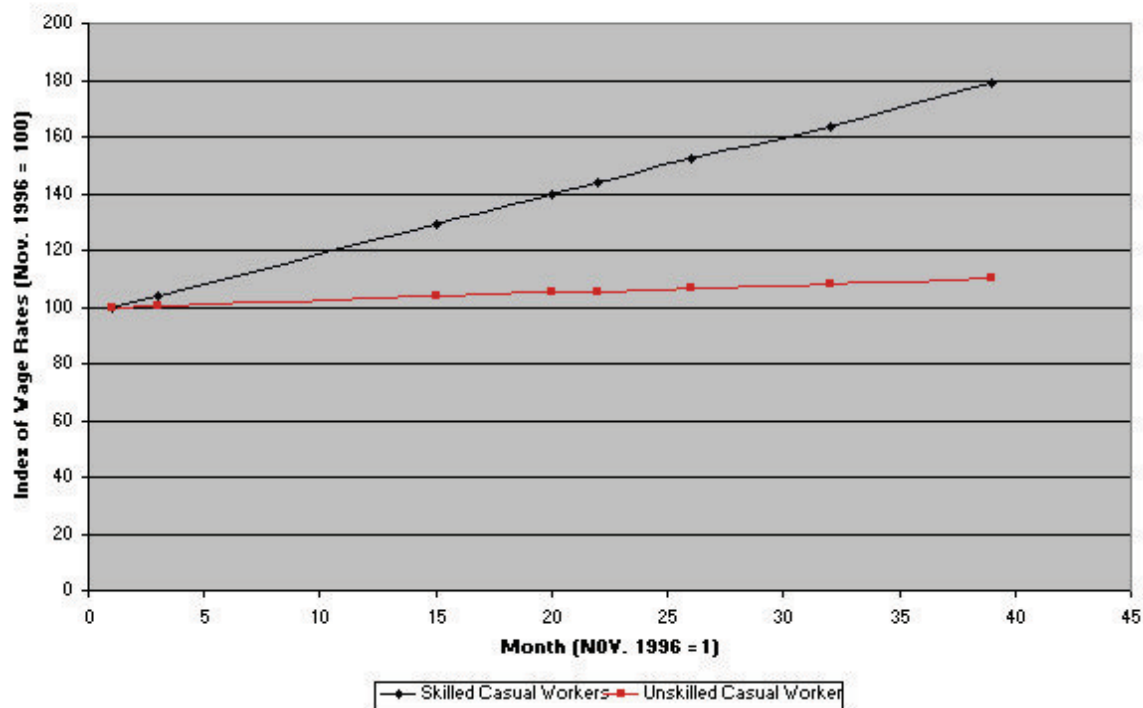
WG = f (**) = Wage General		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.272$	(Constant)	63.678	6.535		9.744	.000
F = 25.59	DUMSK	20.433	4.873	.382	4.193	.000
	DUMUN	-12.904	6.051	-.194	-2.133	.035

Table 3.6(iii): Determinants of Trends in Wage Rates of Skilled Casual Workers

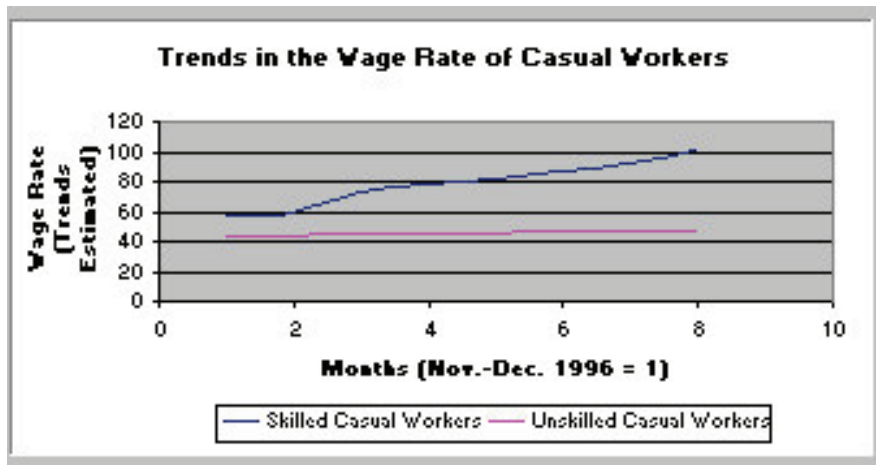
WSK= f (***) = Skilled Workers		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.849$	(Constant)	9.029	5.264		1.715	.089
F = 254.43	DUMSK	69.718	3.523	.827	19.791	.000
	DUMUN	-13.080	4.373	-.125	-2.991	.003
	YEAR	2.653	1.309	.069	2.027	.045

Table 3.6(iv): Determinants of Trends in Wage Rates of Unskilled Casual Workers

WUN= f (****)= Unskilled Workers		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.708$	(Constant)	41.373	7.657		5.430	.000
F = 64.87	DUMSK	-13.033	3.140	-.244	-4.150	.000
	DUMUN	2.139	7.022	.032	.305	.761
	YEAR	1.362	1.165	.016	1.17	.240

Index of Wage Rates of Casual Workers in Shillong

A stagnant wage rate (of unskilled casual labourers) with elastic demand curve coupled with a poorly elastic supply curve can only be explained by a persistent over-supply of (and a pool of unemployed) unskilled casual labour in the market. In case if it were not so, wages would have shown an increasing trend. It is to be noted that here we are discussing the nominal wage rate and not the real wage rate. The real wage rate has unquestionably declined since the cost of living has substantially increased. However, the wage rate of skilled workers has increased by a rate commensurate with the increase in prices of the wage goods. It appears that the real wage rate of skilled workers has appreciated over time.



It is to be noted that our analysis is based on several simplifying assumptions as well as our conclusions are drawn in the twilight of uncertainty where the penumbra of standard errors surround the estimates of

the parameters of our extremely simplified models. Our consolation as well as the moral support relies on what Prof. Marshall emphatically held: *Economics is the science of tendencies*. If our analysis has provided us with some glimpses of the truth and if we could sketch out some general tendencies howsoever faintly, we have succeeded in meeting our objectives.

3.7. Determination of Wage Rates in the Casual Labour Market

We have seen that during our study period the wage rates of unskilled casual wageworkers have either stagnated or appreciated very little, while the wage rates of skilled casual wageworkers are likely to have appreciated substantially. It is then natural to enquire as to the determinants of wage rates of different types of casual wageworkers. It is well known in economics that ‘*the trio*’- wages, supply of labour and demand for labour - interact with one another and attain an equilibrium in which all of them are determined simultaneously. There are other factors also that influence the trio. In this section, we would investigate into the same.

We postulate two alternative simultaneous equation models describing simultaneous determination of wage rate, demand for and supply of casual wageworkers. In these models, general (skilled as well as unskilled) wage rates and demand for and supply of casual wageworkers (skilled and unskilled) are determined. These models, therefore, are not postulated for

determining particular wage rate and demand for and supply of any particular type (skilled or unskilled) casual wageworker. However, a third model is postulated to determine the wage rate (and demand for and supply) of unskilled casual wageworkers.

The first two alternative models regarding general wage rate of casual wageworkers differ in their demand equation. In model-I WU and WS are used as exogenous explanatory variables, which are aggregative (over gender) in nature and have been obtained by maximin operation. However, in Model-II, specific (gender-wise as well as skill-wise) wage rates (average) are used as exogenous explanatory variables. In both the models WG has been obtained by maximin operation.

It is pertinent to state here that in the following analysis we have used three types of measures of wage rates. We collected data at intervals over time and in any casual worker household, there could be four types of casual workers, i.e. unskilled male, unskilled female, skilled male and skilled female. Thus we recorded data which (for any particular household, say i^{th}) would be describes as $W_{ij,t}$ (subscripts - i for household number, $i=1,140$; j for worker type; unskilled male, unskilled female, etc. and t for a particular day a worker was engaged at a particular wage rate), giving a scatter of n ($=140$) points in a two-dimensional space. From these details we need to

obtain a comprehensive measure of wage rates. For this purpose, we use three alternative artifacts. The first is the (arithmetic) average measure, wherever applicable. The second is the LUB (lowest upper bound) measure given by $\min_j(\max_t(W_{jt}))$. The third is the Maximin measure defined as $\max_j(\min_t(W_{jt}))$. The LUB wages are used for analyzing the determination of wage rates for unskilled labourers (in model-iii). However, when a higher-level generalized wage rates (WG) are needed (for models I & II), the maximin wages are used.

The Formal Specification of the Models I and II: The models (I and II) postulate that demand for casual wageworker is determined by the general wage rate (of casual workers) and the specific wage rates of un-skilled and skilled casual wageworkers. On the other hand, the supply of casual workers is determined by the general wage rate of casual workers and the family (household) size of the casual wageworkers. Moreover, demand for and supply of casual wageworkers are balanced in the state of equilibrium.

MODEL - I

The Structural Equations

$$LD = a_0 + a_1 WG + a_2 WU + a_3 WS + u$$

$$LS = b_0 + b_1 WG + b_2 FS + v$$

$$LS = LD \text{ in equilibrium.}$$

The Reduced Form Equations

$$LS = c_0 + c_1 WU + c_2 WS + c_3 FS + \varepsilon$$

$$WG = d_0 + d_1 WU + d_2 WS + d_3 FS + \eta;$$

The Two-Stage Least Squares Equations

$$LD = a_0 + a_1 WGhat + a_2 WU + a_3 WS + u^*$$

$$LS = b_0 + b_1 \text{WGhat} + b_2 \text{FS} + v^*$$

WGhat = $d_0 + d_1 \text{WU} + d_2 \text{WS} + d_3 \text{FS}$; WGhat is used as an instrument for WG.

MODEL - II

The Structural Equations

$$LD = a_0 + a_1 \text{WG} + a_2 \text{AVWSKM} + a_3 \text{AVWSKF} + a_4 \text{AVWUNF} + a_4 \text{AVWUNM} + u$$

$$LS = b_0 + b_1 \text{WG} + b_2 \text{FS} + v ; \text{ (as in model - I)}$$

LS = LD in equilibrium.

The Reduced Form Equations

$$LS = c_0 + c_1 \text{AVWSKM} + c_2 \text{AVWSKF} + c_3 \text{AVWUNF} + c_4 \text{AVWUNM} + c_5 \text{FS} + \varepsilon$$

$$\text{WG} = d_0 + d_1 \text{AVWSKM} + d_2 \text{AVWSKF} + d_3 \text{AVWUNF} + d_4 \text{AVWUNM} + d_5 \text{FS} + \eta ;$$

The Two-Stage Least Squares Equations

$$LD = a_0 + a_1 \text{WGhat} + a_2 \text{AVWSKM} + a_3 \text{AVWSKF} + a_4 \text{AVWUNF} + a_4 \text{AVWUNM} + u$$

$$LS = b_0 + b_1 \text{WGhat} + b_2 \text{FS} + v ; \text{ (as in model - I)}$$

$$\text{WGhat} = d_0 + d_1 \text{AVWSKM} + d_2 \text{AVWSKF} + d_3 \text{AVWUNF} + d_4 \text{AVWUNM} + d_5 \text{FS} ;$$

WGhat is used as an instrument for WG.

The coefficients of models I and II (estimated by 2-stage least squares) have been presented in tables 3.7(i) through 3.7(iii).

**Table 3.7(i-a): General Wage rate as related to specific Wage rates
(Reduced Form Equation of General wage rate of Casual Wage workers)**

Model - 1: WG=f (***)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.786	(Constant)	20.013	3.449		5.803	.000
F = 166.84	WS	.690	.031	1.086	22.335	.000
	WU	.650	.049	.647	13.387	.000
	FS	-.841	.441	-.076	-1.906	.059

**Table 3.7(i-b): General Wage rate as related to specific Wage rates
(Reduced Form Equation of General wage rate of Casual Wage workers)**

Model - 2: WG=f (*****)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.666	(Constant)	30.539	4.073		7.497	.000
F = 53.50	AVWSKF	-.478	.251	-.096	-1.906	.059
	AVWSKM	.602	.038	1.013	15.736	.000
	AVWUNF	.201	.084	.133	2.389	.018
	AVWUNM	.423	.048	.545	8.771	.000
	FS	-1.292	.585	-.117	-2.209	.029

WG=General Wage rate; WS= Wage rate (Skilled); WU= Wage rate (Unskilled); AVW_j = Mean Wage rate of a specified type j. FS = Family size (Household size)

**Table 3.7(ii-a): Determinants of Demand for Casual Labour
(Structural Equations of Demand for Casual Wage Workers)**

Model 1: LD = f (***)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.194	(Constant)	128.421	16.859		7.617	.000
F = 10.9	WGhat	-5.498	1.006	-4.670	-5.468	.000
	WS	3.515	.648	5.613	5.421	.000
	WU	3.646	.653	3.681	5.584	.000

**Table 3.7(ii-b): Determinants of Demand for Casual Labour
(Structural Equations of Demand for Casual Wage Workers)**

Model 2: LD = f (****)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.348	(Constant)	87.180	16.708		5.218	.000
F = 14.31	WGhat	-2.542	.624	-2.104	-4.074	.000
	AVWSKF	-.444	.484	-.091	-.917	.361
	AVWSKM	1.584	.366	2.704	4.332	.000
	AVWUNF	1.119	.146	.752	7.684	.000
	AVWUNM	1.264	.259	1.651	4.871	.000

LD = Demand for Casual Labour; WGhat = Expected General Wage rate

**Table 3.7(iii-a): Determinants of Supply of Casual Labour
(Structural Equations of Supply of Casual Wage Workers)**

Model 1: LS = f (**)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.177	(Constant)	24.459	7.301		3.350	.001
F = 14.69	WGhat	-0.07848	.091	-.067	-.859	.392
	FS	4.548	.845	.418	5.383	.000

**Table 3.7(iii-b): Determinants of Supply of Casual Labour
(Structural Equations of Supply of Casual Wage Workers)**

Model 2: LS = f (**)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.173	(Constant)	22.312	7.476		2.985	.003
F = 14.39	WGhat	-0.04094	.094	-.034	-.436	.664
	FS	4.536	.847	.417	5.356	.000

Wage Elasticities of Demand for and Supply of Casual Wage Worker: It is relevant to obtain wage elasticities of demand for and supply of casual wameworkers. They are:

Model - I : Wage-elasticity of demand = -7.44; Wage-elasticity of supply = -0.106

Model - II : Wage-elasticity of demand = -3.51; Wage-elasticity of supply = -0.0565

It is to be noted that in the model-I demand as well as supply for casual wageworker is more elastic than in the model-II. In both models demand is more elastic than supply.

Table 3.7(iv): Variables determining Demand, Supply and Wage rate of Casual Labour in Shillong : Model - I

Sl. no.	Maximin General Wage rate	Maximin Unskilled Wage rate	Maximin Skilled Wage rate	Family Size	Expected Maximin General Wage rate	Labour Supply (observed)	Demand for Casual Labour	Supply of Casual Labour
	WG	WU	WS	FS	WGhat	LS	DLhat	SLhat
	-----	-----	-----	-----	-----	-----	-----	-----
1	60	60	0	4	55.649	88	69.6393	44.8458
2	20	20	0	4	29.649	30	212.587	46.8863
3	50	0	50	4	49.149	30	105.376	45.3559
4	50	50	0	4	49.149	24	105.376	45.3559
5	100	100	0	6	79.967	22	-64.061	42.9373
6	60	60	0	4	55.649	54	69.6393	44.8458
7	90	50	90	3	108.49	39	-220.88	40.6988
8	80	80	0	1	71.172	25	-15.706	43.6275
9	50	50	0	8	45.785	60	123.872	45.6199
10	40	40	30	5	61.308	80	38.5261	44.4017
11	60	60	60	11	88.762	68	-112.42	42.2471
12	80	30	80	5	87.308	52	-104.42	42.3612
13	50	50	0	9	44.944	64	128.495	45.6859
14	40	40	0	14	34.239	104	187.352	46.526
15	30	30	0	1	38.672	20	162.979	46.1781
16	64	64	0	5	57.408	25	59.9683	44.7077
17	45	45	0	1	48.422	25	109.373	45.413
18	50	0	50	6	47.467	30	114.624	45.4879
19	50	50	0	4	49.149	50	105.376	45.3559
20	50	50	0	5	48.308	24	110	45.4219
21	50	50	0	6	47.467	24	114.624	45.4879
22	65	65	0	3	59.74	43	47.147	44.5247
23	60	60	0	5	54.808	22	74.2631	44.9118
24	50	50	0	2	50.831	51	96.1286	45.2239
25	10	10	0	5	22.308	48	252.948	47.4624
26	50	50	0	7	46.626	24	119.248	45.5539
27	60	60	0	5	54.808	23	74.2631	44.9118
28	60	60	0	6	53.967	30	78.8869	44.9778
29	50	50	0	8	45.785	46	123.872	45.6199
30	50	50	0	4	49.149	22	105.376	45.3559
31	50	50	0	3	49.99	46	100.753	45.2899
32	50	50	0	7	46.626	23	119.248	45.5539
33	80	40	80	11	88.762	71	-112.42	42.2471
34	80	0	80	8	65.285	22	16.6605	44.0895
35	20	20	0	5	28.808	130	217.211	46.9523

36	50	50	0	5	48.308	24	110	45.4219
37	60	60	0	3	56.49	24	65.0155	44.7798
38	30	30	0	7	33.626	28	190.722	46.5741
39	80	20	80	8	78.285	50	-54.814	43.0693
40	50	50	0	2	50.831	15	96.1286	45.2239
41	50	50	0	6	47.467	24	114.624	45.4879
42	60	60	0	7	53.126	22	83.5107	45.0438
43	50	0	50	4	49.149	30	105.376	45.3559
44	50	50	0	4	49.149	23	105.376	45.3559
45	80	50	80	6	99.467	64	-171.27	41.4069
46	40	0	40	2	44.331	25	131.866	45.734
47	50	30	50	8	65.285	48	16.6605	44.0895
48	50	20	50	8	58.785	47	52.3975	44.5997
49	60	25	60	5	71.058	25	-15.079	43.6365
50	80	0	80	2	70.331	18	-11.082	43.6935
51	30	30	0	5	35.308	24	181.474	46.4421
52	36	0	36	4	40.049	48	155.408	46.0701
53	55	55	0	2	54.081	23	78.2601	44.9688
54	90	45	90	7	101.876	43	-184.52	41.2179
55	35	35	0	4	39.399	30	158.982	46.1211
56	70	70	0	3	62.99	23	29.2785	44.2697
57	60	60	0	4	55.649	43	69.6393	44.8458
58	35	35	0	4	39.399	30	158.982	46.1211
59	60	60	0	5	54.808	42	74.2631	44.9118
60	65	65	0	5	58.058	54	56.3946	44.6567
61	40	40	0	7	40.126	116	154.985	46.064
62	80	80	0	7	66.126	24	12.0367	44.0235
63	90	20	90	5	87.308	44	-104.42	42.3612
64	75	75	0	4	65.399	30	16.0338	44.0806
65	90	0	90	6	73.467	21	-28.324	43.4474
66	100	0	100	5	80.808	20	-68.685	42.8713
67	40	20	40	14	47.239	73	115.878	45.5058
68	50	50	0	11	43.262	66	137.743	45.8179
69	90	0	90	4	75.149	20	-37.572	43.3154
70	90	60	90	8	110.785	63	-233.5	40.5187
71	50	50	0	4	49.149	30	105.376	45.3559
72	80	80	0	9	64.444	22	21.2844	44.1555
73	16	16	0	4	27.049	100	226.882	47.0903
74	40	20	40	9	51.444	105	92.7584	45.1758
75	32	32	0	3	38.29	25	165.079	46.2081
76	70	70	0	3	62.99	47	29.2785	44.2697
77	80	0	80	8	65.285	25	16.6605	44.0895
78	28	28	0	2	36.531	25	174.75	46.3462
79	90	0	90	5	74.308	21	-32.948	43.3814
80	100	60	100	7	118.126	70	-273.86	39.9426
81	50	50	0	2	50.831	50	96.1286	45.2239
82	50	50	0	6	47.467	50	114.624	45.4879
83	40	32	40	5	62.608	75	31.3787	44.2996
84	70	70	0	2	63.831	20	24.6546	44.2037
85	80	80	0	7	66.126	49	12.0367	44.0235
86	70	70	0	8	58.785	97	52.3975	44.5997
87	40	16	40	10	48.003	75	111.677	45.4458
88	40	35	40	7	62.876	51	29.9052	44.2786

89	15	15	0	6	24.717	72	239.703	47.2733
90	120	0	120	4	94.649	26	-144.78	41.7851
91	100	100	0	5	80.808	25	-68.685	42.8713
92	100	0	100	5	80.808	25	-68.685	42.8713
93	100	22	100	6	94.267	47	-142.68	41.815
94	85	0	85	6	70.217	25	-10.456	43.7025
95	100	0	100	4	81.649	23	-73.309	42.8053
96	40	40	0	7	40.126	91	154.985	46.064
97	60	60	0	8	52.285	76	88.1345	45.1098
98	35	35	0	4	39.399	30	158.982	46.1211
99	80	20	80	5	80.808	50	-68.685	42.8713
100	100	100	0	9	77.444	104	-50.19	43.1353
101	70	70	0	4	62.149	45	33.9023	44.3357
102	20	20	0	6	27.967	60	221.835	47.0183
103	20	20	0	3	30.49	50	207.964	46.8203
104	50	0	50	4	49.149	30	105.376	45.3559
105	120	0	120	5	93.808	23	-140.16	41.8511
106	85	70	85	3	118.24	65	-274.49	39.9336
107	100	20	100	4	94.649	55	-144.78	41.7851
108	80	0	80	6	66.967	25	7.4129	43.9575
109	140	0	140	6	105.967	21	-207.01	40.8968
110	50	26	50	7	63.526	50	26.3315	44.2276
111	100	0	100	6	79.967	25	-64.061	42.9373
112	100	0	100	3	82.49	25	-77.933	42.7393
113	13	13	0	5	24.258	92	242.227	47.3093
114	80	60	80	6	105.967	116	-207.01	40.8968
115	50	50	0	5	48.308	38	110	45.4219
116	30	30	0	7	33.626	115	190.722	46.5741
117	90	0	90	8	71.785	24	-19.077	43.5794
118	50	50	34	5	70.408	54	-11.506	43.6875
119	110	70	110	3	134.49	60	-363.83	38.6583
120	50	40	50	10	70.103	55	-9.8288	43.7114
121	80	80	0	9	64.444	47	21.2844	44.1555
122	40	40	0	5	41.808	25	145.737	45.932
123	40	40	0	8	39.285	87	159.609	46.13
124	70	70	0	1	64.672	23	20.0308	44.1377
125	60	60	0	5	54.808	24	74.2631	44.9118
126	100	0	100	7	79.126	24	-59.437	43.0033
127	60	60	0	6	53.967	24	78.8869	44.9778
128	20	20	0	3	30.49	30	207.964	46.8203
129	30	30	0	6	34.467	88	186.098	46.5081
130	120	0	120	4	94.649	23	-144.78	41.7851
131	32	32	0	4	37.449	25	169.703	46.2741
132	8	8	0	4	21.849	42	255.472	47.4984
133	32	32	0	3	38.29	25	165.079	46.2081
134	50	0	50	6	47.467	30	114.624	45.4879
135	70	70	0	4	62.149	22	33.9023	44.3357
136	55	55	0	4	52.399	24	87.5078	45.1008
137	80	80	0	6	66.967	82	7.4129	43.9575
138	120	20	120	5	106.808	82	-211.63	40.8308
139	80	0	80	8	65.285	23	16.6605	44.0895
140	60	60	0	8	52.285	76	88.1345	45.1098
Mean	61.44	38.11	30.79	5.443	60.22	44.49	44.50	44.49

**Table 3.7(v): Variables determining Demand, Supply and Wage rate
of Casual Labour in Shillong : Model - II**

Item	Maxi-min General Wage Rate	Mean daily Wage Rate of Skilled Labourers		Mean daily Wage Rate of Un-skilled Labourers		Family Size (Household Size)	Expected Maxi-min General Wage rate	Labour Supply (observed)	Demand for Casual Labour	Supply of Casual Labour
Sl.no.	WG	Male	Fem	Male	Fem	Persons	WGhat	LS	DLhat	SLhat
1	60	0	0	0	0	4	50.75404	88	71.6474	46.8372
2	20	50	0	0	20	4	29.39878	30	125.9325	46.8372
3	50	0	0	75	0	4	55.45508	30	59.6973	46.8372
4	50	0	0	150	0	4	57.09945	24	55.5174	46.8372
5	100	0	0	155	0	6	86.24296	22	-18.5654	46.7554
6	60	95	0	55	10	4	92.95483	54	-35.627	46.8372
7	90	0	0	80	0	3	107.0878	39	-71.5529	46.8781
8	80	0	0	50	0	1	63.08989	25	40.2896	46.9599
9	50	0	40	40	20	8	45.38307	60	85.3004	46.6736
10	40	80	40	60	8	5	23.48185	80	140.9733	46.7963
11	60	85	0	0	0	11	70.71351	68	20.9104	46.5509
12	80	0	0	50	30	5	81.26076	52	-5.9007	46.7963
13	50	0	0	60	23	9	44.69526	64	87.0488	46.6327
14	40	0	0	0	32	14	44.27855	104	88.1081	46.4282
15	30	0	0	64	30	1	35.28729	20	110.9639	46.9599
16	64	0	0	45	0	5	51.15438	25	70.6297	46.7963
17	45	50	0	0	0	1	48.28394	25	77.9264	46.9599
18	50	0	0	55	0	6	52.87154	30	66.2647	46.7554
19	50	0	0	85	0	4	48.6389	50	77.0241	46.8372
20	50	0	0	50	0	5	60.03795	24	48.0477	46.7963
21	50	0	0	65	0	6	43.94022	24	88.9681	46.7554
22	65	0	0	60	50	3	64.22691	43	37.3994	46.8781
23	60	0	0	65	0	5	49.46227	22	74.9311	46.7963
24	50	0	0	0	20	2	59.4791	51	49.4683	46.919
25	10	0	0	55	55	5	35.15319	48	111.3048	46.7963
26	50	0	0	65	0	7	44.76359	24	86.8751	46.7145
27	60	0	0	60	0	5	51.5774	23	69.5544	46.7963
28	60	0	0	65	25	6	53.20348	30	65.4209	46.7554
29	50	0	0	75	20	8	51.72848	46	69.1704	46.6736
30	50	0	0	55	0	4	57.09945	22	55.5174	46.8372
31	50	0	0	65	28	3	55.56761	46	59.4113	46.8781
32	50	100	0	40	0	7	48.99386	23	76.1218	46.7145
33	80	80	0	0	28	11	99.0534	71	-51.1296	46.5509
34	80	0	0	32	0	8	68.33761	22	26.95	46.6736
35	20	0	0	55	20	5	41.8554	130	94.2677	46.7963

36	50	0	0	60	0	5	47.34713	24	80.3078	46.7963
37	60	0	0	0	0	3	52.04581	24	68.3637	46.8781
38	30	80	0	20	32	7	28.03996	28	129.3866	46.7145
39	80	0	0	55	0	8	76.79815	50	5.4433	46.6736
40	50	0	0	60	0	2	51.22244	15	70.4567	46.919
41	50	0	0	60	0	6	48.1705	24	78.2148	46.7554
42	60	50	0	0	0	7	46.87873	22	81.4984	46.7145
43	50	0	0	0	0	4	55.45508	30	59.6973	46.8372
44	50	80	0	55	55	4	36.44496	23	108.0211	46.8372
45	80	40	0	0	0	6	94.18765	64	-38.7608	46.7554
46	40	75	0	0	0	2	52.02208	25	68.424	46.919
47	50	85	0	0	30	8	71.36892	48	19.2444	46.6736
48	50	90	0	0	20	8	75.37226	47	9.0679	46.6736
49	60	80	0	0	25	5	83.26244	25	-10.989	46.7963
50	80	0	0	60	0	2	76.08823	18	7.2479	46.919
51	30	73	0	0	0	5	49.46227	24	74.9311	46.7963
52	36	0	0	60	0	4	69.29311	48	24.5211	46.8372
53	55	100	0	0	0	2	53.33758	23	65.08	46.919
54	90	0	0	35	45	7	90.72182	43	-29.9507	46.7145
55	35	0	0	75	0	4	40.17835	30	98.5308	46.8372
56	70	0	0	65	0	3	58.39122	23	52.2337	46.8781
57	60	0	0	35	25	4	57.90216	43	53.4769	46.8372
58	35	0	0	65	0	4	40.17835	30	98.5308	46.8372
59	60	0	0	65	0	5	51.5774	42	69.5544	46.7963
60	65	0	0	45	10	5	53.5906	54	64.4369	46.7963
61	40	0	0	100	35	7	47.57949	116	79.7171	46.7145
62	80	90	0	0	0	7	63.79982	24	38.485	46.7145
63	90	0	0	0	20	5	82.25584	44	-8.4302	46.7963
64	75	105	0	0	75	4	40.47134	30	97.786	46.8372
65	90	125	0	0	0	6	85.96249	21	-17.8525	46.7554
66	100	40	0	35	0	5	99.28733	20	-51.7242	46.7963
67	40	0	0	50	0	14	51.32679	73	70.1914	46.4282
68	50	90	0	0	25	11	42.51435	66	92.5927	46.5509
69	90	95	0	65	0	4	79.52122	20	-1.4788	46.8372
70	90	0	0	50	0	8	104.8592	63	-65.8879	46.6736
71	50	0	0	80	0	4	46.52376	30	82.4008	46.8372
72	80	0	0	38	0	9	52.75573	22	66.5591	46.6327
73	16	40	0	50	0	4	41.44744	100	95.3048	46.8372
74	40	0	0	32	20	9	68.15744	105	27.4079	46.6327
75	32	0	0	70	0	3	40.20104	25	98.4731	46.8781
76	70	80	0	0	32	3	62.7183	47	41.2342	46.8781
77	80	0	0	0	0	8	68.33761	25	26.95	46.6736
78	28	90	0	0	28	2	33.59288	25	115.2711	46.919
79	90	100	0	65	0	5	78.22945	21	1.8049	46.7963
80	100	0	0	55	30	7	115.1988	70	-92.1712	46.7145
81	50	0	0	75	20	2	55.24883	50	60.2216	46.919
82	50	40	28	32	22	6	58.94493	50	50.8261	46.7554
83	40	0	0	70	0	5	48.29235	75	77.905	46.7963
84	70	0	0	100	0	2	57.56785	20	54.3267	46.919
85	80	0	0	70	16	7	67.02093	49	30.297	46.7145
86	70	40	0	0	30	8	55.85681	97	58.6762	46.6736
87	40	40	0	0	16	10	44.90903	75	86.5054	46.5918
88	40	0	0	55	35	7	52.60941	51	66.931	46.7145

89	15	120	0	0	15	6	49.07515	72	75.9151	46.7554
90	120	0	0	100	0	4	97.57083	26	-47.3609	46.8372
91	100	100	0	0	0	5	66.38336	25	31.9177	46.7963
92	100	100	0	0	0	5	84.24599	25	-13.4891	46.7963
93	100	85	0	0	22	6	87.38324	47	-21.464	46.7554
94	85	100	0	0	0	6	73.92941	25	12.7356	46.7554
95	100	0	0	50	0	4	85.53776	23	-16.7728	46.8372
96	40	0	0	70	28	7	48.28539	91	77.9227	46.7145
97	60	0	0	0	25	8	54.85021	76	61.2349	46.6736
98	35	80	0	0	35	4	32.41857	30	118.2561	46.8372
99	80	0	0	62	20	5	76.2393	50	6.8639	46.7963
100	100	0	0	70	100	9	65.48468	104	34.2021	46.6327
101	70	0	0	0	16	4	58.20542	45	52.706	46.8372
102	20	0	0	0	25	6	27.82184	60	129.941	46.7554
103	20	50	0	0	20	3	30.69055	50	122.6488	46.8781
104	50	150	0	0	0	4	55.45508	30	59.6973	46.8372
105	120	85	0	72	0	5	114.3287	23	-89.9593	46.7963
106	85	100	0	20	0	3	108.4742	65	-75.0773	46.8781
107	100	80	0	0	0	4	93.99831	55	-38.2795	46.8372
108	80	140	0	0	0	6	70.92115	25	20.3826	46.7554
109	140	50	0	0	0	6	107.0204	21	-71.3816	46.7554
110	50	100	0	0	26	7	56.81407	50	56.2428	46.7145
111	100	100	0	0	0	6	82.95422	25	-10.2055	46.7554
112	100	0	0	0	0	3	86.82953	25	-20.0565	46.8781
113	13	90	0	60	29	5	29.91889	92	124.6104	46.7963
114	80	0	0	55	15	6	105.3391	116	-67.1079	46.7554
115	50	0	0	45	0	5	47.34713	38	80.3078	46.7963
116	30	90	0	0	39	7	48.38477	115	77.6701	46.7145
117	90	92	0	50	0	8	74.35414	24	11.6559	46.6736
118	50	110	0	70	0	5	100.5841	54	-55.0207	46.7963
119	110	50	0	40	0	3	122.458	60	-110.624	46.8781
120	50	0	0	80	0	10	64.62555	55	36.386	46.5918
121	80	0	0	0	50	9	62.8217	47	40.9714	46.6327
122	40	0	0	50	40	5	32.1334	25	118.9811	46.7963
123	40	0	0	70	30	8	47.39626	87	80.1829	46.6736
124	70	0	0	60	0	1	58.85962	23	51.043	46.9599
125	60	100	0	0	0	5	49.46227	24	74.9311	46.7963
126	100	0	0	60	0	7	81.66245	24	-6.9218	46.7145
127	60	0	0	20	0	6	48.1705	24	78.2148	46.7554
128	20	0	0	45	0	3	35.12471	30	111.3771	46.8781
129	30	120	0	0	38	6	49.47522	88	74.8982	46.7554
130	120	0	0	0	0	4	97.57083	23	-47.3609	46.8372
131	32	0	0	54	32	4	31.81461	25	119.7914	46.8372
132	8	0	0	0	0	4	48.21587	42	78.0994	46.8372
133	32	50	0	0	32	3	33.10639	25	116.5077	46.8781
134	50	0	0	70	0	6	52.87154	30	66.2647	46.7554
135	70	0	0	55	0	4	54.98431	22	60.894	46.8372
136	55	0	0	80	0	4	48.6389	24	77.0241	46.8372
137	80	120	0	0	18	6	60.25479	82	47.4965	46.7554
138	120	90	0	0	20	5	100.3055	82	-54.3123	46.7963
139	80	0	0	65	0	8	74.35414	23	11.6559	46.6736
140	60	0	0	0	5	8	48.70869	76	76.8467	46.6736
Mean	61.4	33	0.77	37.2	12.5	5.44	61.445	44.5	44.5	46.8

Determination of Wage rate of Casual Wage Workers – Model-I

[Equilibrium at (59.74, 44.52)]

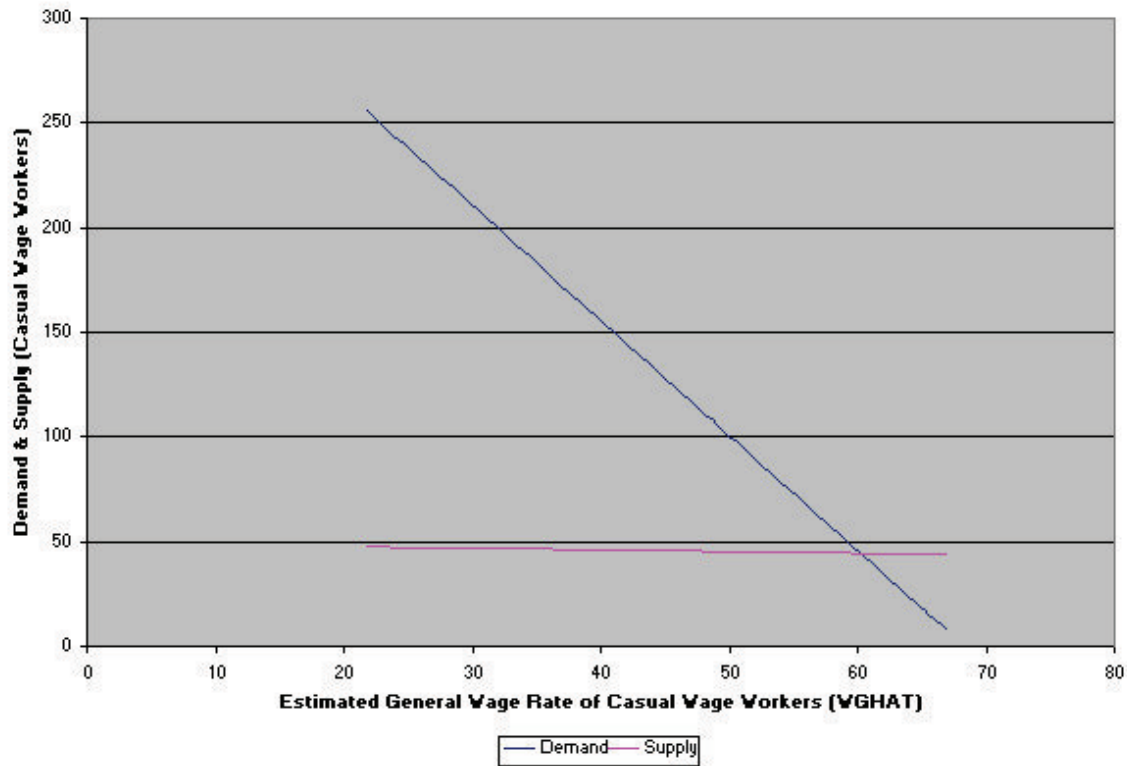


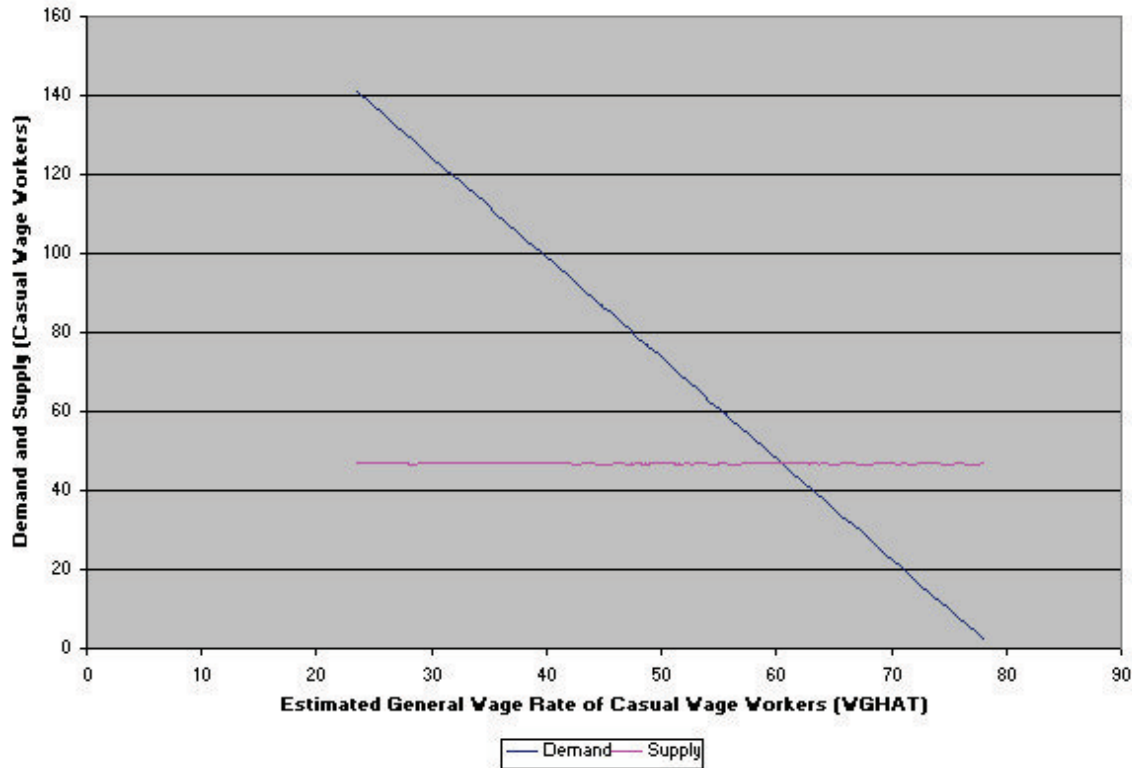
Table 3.7(vi): Supply of Casual Wage Worker days per month (by 140 Households)

Worker Type	Skilled Male	Skilled Female	Skilled	Unskilled Male	Unskilled Female	Unskilled	Total	Per household
Worker-days	1413	70	1483	2783	1962	4745	6228	44.48571

Equilibrium Wage Rate and Demand/Supply: The observed supply of casual worker-days/month (table 3.7(vi)) is 44.49. Model-I shows equilibrium at 44.52 worker-days at wage rate Rs. 59.74 per worker/day. Model-II shows equilibrium at 46.75 worker-days at wage rate Rs. 60.25. These differences (among observed and those predicted by models I & II) are negligible.

Determination of Wage rate of Casual Wage Workers – Model-II

[Equilibrium at (60.25, 46.75)]



Wage Rate of Unskilled Casual Wage Workers: Turning to the determination of wage rate and demand for and supply of unskilled worker-days in Shillong, first we specify the model (Model - III) as follows:

MODEL - III

The Structural Equations

$$D(\text{UN_L}) = a_0 + a_1 \text{WUN} + a_2 \text{WUNF} + a_3 \text{WUNM} + u$$

$$S(\text{UN_L}) = b_0 + b_1 \text{WUN} + b_2 \text{FS} + v$$

$D(\text{UN_L}) = S(\text{UN_L})$ in equilibrium.

The Reduced Form Equations

$$S(\text{UN_L}) = c_0 + c_1 \text{WUNF} + c_2 \text{WUNM} + c_3 \text{FS} + \varepsilon$$

$$\text{WG} = d_0 + d_1 \text{WUNF} + d_2 \text{WUNM} + d_3 \text{FS} + \eta;$$

The Two-Stage Least Squares Equations

$$D(\text{UN_L}) = a_0 + a_1 \text{WUNhat} + a_2 \text{WUNF} + a_3 \text{WUNM} + u$$

$$S(\text{UN_L}) = b_0 + b_1 \text{WUNhat} + b_2 \text{FS} + v$$

$\text{WUNhat} = d_0 + d_1 \text{WUNF} + d_2 \text{WUNM} + d_3 \text{FS}$; WUNhat is the instrument for WUN.

**Table 3.7(vii): Determinants of Wage rate of Unskilled Casual Workers
(Reduced Form Equation of Wage Rate of Unskilled Casual Wage Workers)**

Model III: WUN = f (***)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.626$	(Constant)	21.534	3.615		5.957	.000
F = 60.86	WUNF	0.326	.073	.290	4.462	.000
	WUNM	0.554	.041	.859	13.447	.000
	FS	-0.948	.486	-.117	-1.952	.054

**Table 3.7(viii): Determinants of Demand for Unskilled Casual Workers
(Structural Equation of Demand for Unskilled Casual Wage Workers)**

Model III: D(UN_L) = f (***)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.257$	(Constant)	64.294	16.528		3.890	.000
F = 12.58	WUNF	1.444	.301	1.009	4.793	.000
	WUNM	1.652	.508	2.012	3.254	.002
	WUNhat	-2.578	.919	-1.603	-2.805	.006

D(UN_L) = Demand for Unskilled Casual Workers

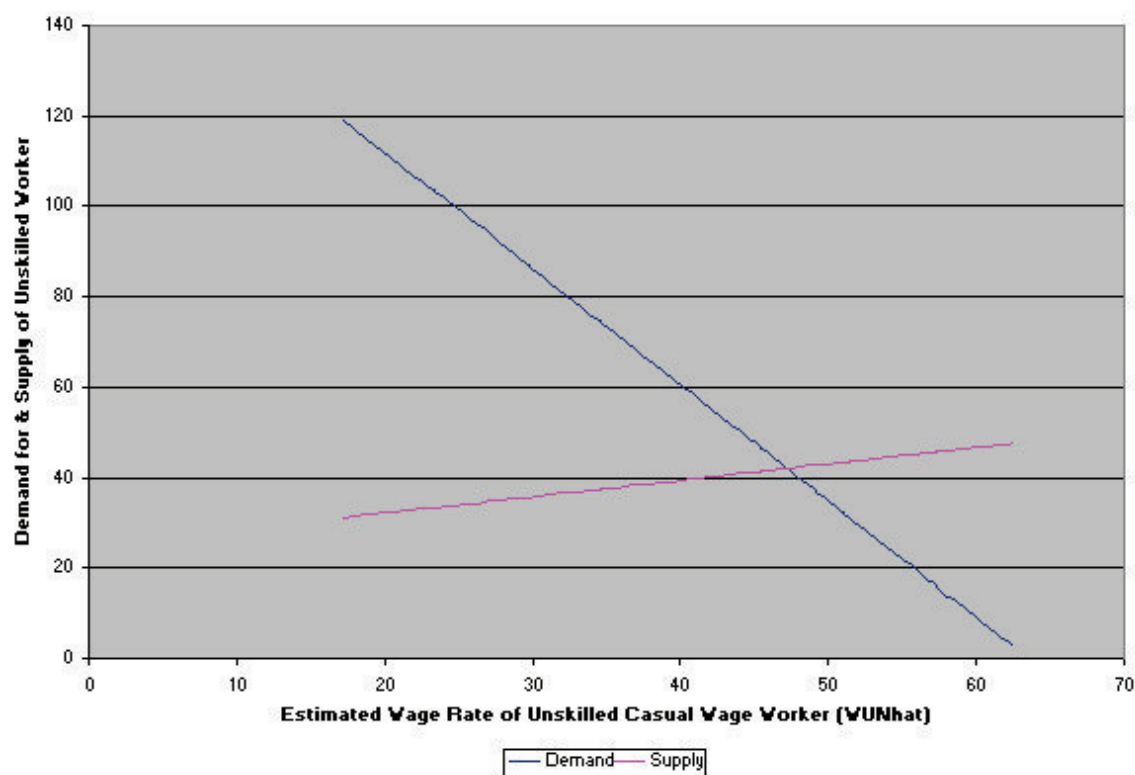
**Table 3.7(ix): Determinants of Supply of Unskilled Casual Workers
(Structural Equation of Supply of Unskilled Casual Worker)**

Model III: S(UN_L) = f (***)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.153$	(Constant)	5.787	8.896		.651	.517
F = 9.924	FS	3.443	.908	.333	3.791	.000
	WUNhat	0.365	.141	.227	2.584	.011

S(UN_L) = Supply of Unskilled Casual Workers

Estimated Coefficients are presented in tables 3.7(vii) through 3.7(ix). Model-III gives us the equilibrium wage rate (of unskilled casual wage worker = Rs. 47.28 and supply of worker-days per family/month = 42. We also find the wage-elasticity of demand for casual labour = -2.9 and wage-elasticity of supply of casual labour = 0.41, suggesting relatively inelastic supply and elastic demand for casual labour in the market.

Determination of Wage rate of Unskilled Casual Wage Workers – Model-III
 [Equilibrium at (46.68, 42.14)]



**Table 3.7(x): Variables determining Demand, Supply and Wage rate
 of Unskilled Casual Labour in Shillong : Model III**

SI no.	Supply of Unskilled Labour	LUB Wage Rate*	Family Size	Mean Wage Rate (male)	Mean Wage Rate (fem)	Predicted LUB Wage Rate	Demand for Unskilled Labour	Supply of Unskilled Labour
-----	-----	-----	-----	-----	-----	-----	-----	-----
1	88	60	4	60	0	51.00413	32.1918	43.3552
2	30	20	4	0	20	24.26592	101.1229	33.5958
3	24	50	4	75	0	59.32004	10.7534	46.3905
4	22	100	6	150	0	99.00282	-91.5488	60.8748
5	54	60	4	155	10	106.9343	-111.996	63.7697
6	17	50	3	55	0	49.18054	36.8931	42.6896
7	25	80	1	80	0	64.93713	-3.7275	48.4408
8	60	50	8	50	20	48.19211	39.4412	42.3289
9	55	40	5	40	8	41.57805	56.4923	39.9147
10	30	60	11	60	0	44.36550	49.3062	40.9321
11	30	30	5	0	30	26.58026	95.1566	34.4405
12	64	50	9	50	23	48.22254	39.3628	42.3400
13	104	40	14	60	32	51.96104	29.7249	43.7045
14	20	30	1	0	30	30.37376	85.3769	35.8252
15	25	64	5	64	0	52.27333	28.9198	43.8185
16	25	45	1	45	0	45.53335	46.2955	41.3584
17	50	50	4	55	0	48.23216	39.338	42.3435

18	24	50	5	85	0	63.9156	-1.0939	48.0679
19	24	50	6	50	0	43.56344	51.3739	40.6394
20	43	65	3	65	50	71.03802	-19.4555	50.6676
21	22	60	5	60	0	50.05575	34.6367	43.0091
22	51	50	2	65	20	62.19827	3.3333	47.4411
23	48	10	5	0	55	34.73703	74.1284	37.4178
24	24	50	7	55	0	45.38703	46.6727	41.305
25	23	60	5	65	0	52.82772	27.4906	44.0209
26	30	60	6	60	25	57.26415	16.0535	45.6402
27	46	50	8	65	20	56.50801	18.0028	45.3642
28	22	50	4	75	0	59.32004	10.7534	46.3905
29	46	50	3	55	28	58.31612	13.3415	46.0241
30	23	50	7	65	0	50.93097	32.3804	43.3285
31	50	40	11	40	28	42.41321	54.3392	40.2196
32	130	20	5	32.5	20	41.33534	57.118	39.8261
33	24	50	5	55	0	47.28378	41.7829	41.9973
34	24	60	3	60	0	51.95251	29.7469	43.7014
35	28	30	7	0	32.5	25.49918	97.9436	34.0459
36	25	20	8	20	0	25.03487	99.1406	33.8765
37	15	50	2	55	0	50.12891	34.4481	43.0358
38	24	50	6	60	0	49.10738	37.0817	42.6629
39	22	60	7	60	0	48.159	39.5266	42.3168
40	23	50	4	0	55	35.68541	71.6835	37.7639
41	42	50	6	55	0	46.33541	44.2278	41.6512
42	24	30	8	0	30	23.73513	102.4913	33.4021
43	25	20	8	0	20	20.47242	110.9026	32.2112
44	2	25	5	0	25	24.9489	99.3622	33.8451
45	24	30	5	60	0	50.05575	34.6367	43.0091
46	23	55	2	60	0	52.90088	27.302	44.0476
47	20	45	7	0	45	29.57757	87.4295	35.5345
48	30	35	4	35	0	37.14428	67.9225	38.2964
49	23	70	3	75	0	60.26841	8.3085	46.7367
50	43	60	4	65	25	61.93287	4.0175	47.3442
51	30	35	4	35	0	37.14428	67.9225	38.2964
52	42	60	5	65	0	52.82772	27.4906	44.0209
53	54	65	5	65	10	56.09043	19.0793	45.2117
54	116	40	7	45	35	51.26258	31.5256	43.4496
55	24	80	7	100	0	70.33475	-17.6425	50.4109
56	25	20	5	0	20	23.31755	103.5678	33.2496
57	30	75	4	0	75	42.21083	54.861	40.1457
58	48	20	14	35	0	27.66052	92.3717	34.8348
59	66	50	11	50	25	46.97833	42.5703	41.8858
60	42	60	8	65	0	49.98259	34.8254	42.9824
61	30	50	4	50	0	45.46019	46.4841	41.3317
62	22	80	9	80	0	57.35012	15.8319	45.6715
63	100	16	4	38	0	38.80747	63.6348	38.9035
64	80	20	9	50	20	47.24373	41.8861	41.9827
65	25	32	3	32	0	36.42948	69.7653	38.0355
66	47	70	3	70	32	67.93711	-11.4614	49.5358
67	25	28	2	0	28	28.77284	89.5041	35.2408
68	48	60	7	65	30	60.7191	7.1466	46.9012
69	50	50	2	55	20	56.65433	17.6256	45.4176
70	50	50	6	75	22	64.60124	-2.8615	48.3182

71	25	32	5	32	0	34.53273	74.6551	37.3432
72	20	70	2	70	0	58.44482	13.0097	46.0711
73	49	80	7	100	16	75.55509	-31.1005	52.3163
74	97	70	8	70	30	62.54269	2.4454	47.5668
75	25	16	10	0	16	17.27058	119.1569	31.0425
76	21	35	7	0	35	26.31486	95.8408	34.3437
77	72	15	6	55	15	51.22947	31.6109	43.4375
78	25	100	5	100	0	72.2315	-22.5323	51.1032
79	25	22	6	0	22	23.02171	104.3305	33.1417
80	91	40	7	50	28	51.75065	30.2673	43.6277
81	76	60	8	70	25	60.91134	6.6511	46.9714
82	30	35	4	0	35	29.15999	88.506	35.3821
83	25	20	5	0	20	23.31755	103.5678	33.2496
84	104	100	9	62.5	100	80.27533	-43.2693	54.0392
85	45	70	4	70	16	61.7684	4.4415	47.2842
86	60	20	6	0	25	24.00052	101.8071	33.4989
87	50	20	3	0	20	25.2143	98.678	33.942
88	42	70	3	72.5	0	58.88243	11.8816	46.2308
89	25	20	4	20	0	28.82838	89.3609	35.2611
90	20	26	7	0	26	23.37842	103.4109	33.2719
91	92	13	5	0	29	26.25399	95.9977	34.3214
92	70	60	6	60	15	54.00144	24.4648	44.4493
93	38	50	5	55	0	47.28378	41.7829	41.9973
94	115	30	7	45	39	52.56766	28.161	43.9259
95	10	50	5	50	0	44.51182	48.929	40.9855
96	40	70	3	70	0	57.49644	15.4546	45.7249
97	25	40	10	40	0	34.226	75.4459	37.2312
98	47	80	9	80	50	73.66367	-26.2245	51.626
99	25	40	5	0	40	29.84297	86.7453	35.6314
100	87	40	8	50	30	51.45482	31.03	43.5197
101	23	70	1	70	0	59.3932	10.5648	46.4173
102	24	60	5	60	0	50.05575	34.6367	43.0091
103	24	60	6	60	0	49.10738	37.0817	42.6629
104	30	20	3	20	0	29.77675	86.916	35.6073
105	88	30	6	45	38	53.18977	26.5573	44.153
106	25	32	4	0	32	28.18117	91.0294	35.0249
107	42	8	4	54	0	47.67777	40.7672	42.1411
108	25	32	3	0	32	29.12955	88.5845	35.371
109	22	70	4	70	0	56.54807	17.8996	45.3788
110	24	55	4	55	0	48.23216	39.338	42.3435
111	82	80	6	80	18	66.06813	-6.6432	48.8536
112	60	20	5	0	20	23.31755	103.5678	33.2496
113	76	60	8	65	5	51.61395	30.6197	43.5778
Mean	42	47.22	5.50	46.66	15.45	47.22	41.9441	41.9745

Note: LUB Wage rate = Lowest Upper bound of Wage Rate.

3.8. Concluding Remarks

In analyzing the casual labour market in Shillong we have seen that in case of the general casual labour market, the supply curve is almost parallel to the horizontal (wage rate) axis while the demand curve is steeply falling. In case of unskilled casual wageworkers the supply curve is gently rising in response to the increase in the wage rate of unskilled casual wageworker. These are the supply and demand curves faced by a typical casual wageworker household. It is to be noted that in general a casual wageworker household supplies around 45 labour-days per month. There are 266 casual wageworkers in 140 households, which means that an average household supplies two (1.9 when not rounded off) casual wageworkers, each working for about 22.5 days in a month. With the average household size (of the casual wageworker) being 5.4 persons, the dependency ratio is about 3.4 persons per 2 workers or 1.7 persons per wageworker.

We found that wage rate (of a general casual wageworker) is about Rs. 60 per day, which in case of an unskilled worker is about Rs. 47 only. With each of the two working members getting some job for 22.5 days in a month, an average casual wageworker household would earn Rs. 2700 ($=22.5 \times 2 \times 60$) per month, which is an upper bound on the wage earnings. This works out to be Rs. 500 per capita per month. More exactly, average

earning would be Rs 2565 (Rs. 475 per capita per month). For an average unskilled casual wageworker household these figures are Rs. 2000 and Rs. 372 (per capita). Thus, casual wageworkers in Shillong earn only a subsistence wage.

At this juncture, it is worthwhile to invoke the standard (and internationally accepted) definition of '*subsistence wage*'. ILO (1996) defines it as *the hourly wage sufficient to buy 1 (one) kilogram of the lowest-priced staple cereal*. As ILO notes, the median time to earn this subsistence wage (internationally) is 37 minutes and that is the time in India as well. From our survey we have found (details to be given in the following chapters) that price of 1 kilogram of rice (the staple cereal in the study area) varied between Rs. 8.5 to Rs. 10.0 during 1996-1998. The range was Rs. 10 to 11.5 in 1998-2000. The upper limit of daily wage rates of unskilled casual workers was Rs. 50. Work hours (per day) were 7 to 8 hours. From these figures, the hourly wage rate works out to be Rs. 7.0 or less, which cannot buy 1 kilogram of rice. Additionally, casual labourers in Shillong have no claim to ILO's Social Security (Minimum standard) Convention, 1952 (that is, medical care, sickness and maternity benefits, family benefits, unemployment benefits, employment injury, invalidity and survivors' benefits, and old-age benefits).

From the limited data that we have been able to collect, it is not possible to estimate expansion in supply of or contraction in demand for casual wageworkers in Shillong. However, almost stagnant wage rates of the unskilled casual wageworkers suggest that expansion in the supply of unskilled wageworkers far exceeds the demand for the same, keeping wage rates at a stagnant subsistence level.

Chapter 4

PATTERNS IN CONSUMPTION EXPENDITURE OF CASUAL WORKERS IN SHILLONG

4.1. Introduction

The objective of this chapter is to investigate into patterns discernible in the consumption expenditure of casual wagedworkers in our study area. To be more specific, we are concerned primarily with that part of the consumption expenditure of casual workers which is allocated on ‘wage goods’.

Wage Goods as a Category: Wage goods are those consumption goods which are indispensable for wage earners’ sustenance. As a collectivity or as a consumption basket, it is also known as “kitchen goods’ as it is mainly confined to the kitchen for preparation of daily food. This is the lowest category among the food baskets; which is meant for the lowest class of people, i.e. the working class. According to Ricardo “all agricultural products are wage goods and all manufactured products are luxuries never consumed by workers”. (**Blaug**, 1982). Wage goods are the composite of those goods, which are essential for “consumption necessities” required for subsistence and performance of work (**Brahmananda**, 1978, p. 95). Viewed as such, a certain minimum of clothes also should be considered as wage

goods. After a whole day's work the workers must take rest to regenerate labour power to be offered on sale the next morning. For this consideration, a certain minimum of housing also may be included. **Sraffa** (1960) draws a fundamental distinction between a 'basic' commodity, which enters directly or indirectly into the production of every other commodity in the economy, including itself, and a 'non-basic' commodity which enters only into final consumption. If we treat labour itself as a produced means of production, wage goods would constitute examples of such 'basic' commodities, on the assumption that they are technically required to cause households to produce the flow of labour services.

Labourers as a Regenerable Source of Labour Power: Once we treat 'labour' as a '*produced means of production*', we must think of labourers as a regenerable source of labour power. Labourers are the owners of labour force or the source of labour power. Labourers cannot be bought and sold in a non-slave modern economy. What is actually bought and sold is their services or labour power. Labour power becomes a commodity, traded on the market like any other commodity at a normal price governed by the labour time necessary to produce it, that is by the labour time necessary to produce the wage goods which go to maintain workers. Labourers are regenerable as any other source of power, but the difference here is that

labourers are human beings while other sources of power/energy are non-human. As human beings, labourers have many peculiarities, viz. rationality, emotion, fellow-attachment, etc. Further, labour cannot be separated from the labourer. Due to these special characteristics, the study of labour market must be quite different from other markets.

Labourers are regenerable in three ways:

- (a) Through increasing population. Population is increasing due to high birth rate accompanied by low death rate, as there is improvement in medical facilities. However it is a slow process of growth, the supply of labour cannot respond immediately to the demand especially in the short run.
- (b) Labourers can be increased in supply through migration. Since they are mobile they can be adjusted wherever demand for them arises. This adjustment can be either temporary or permanent.
- (c) In some cases, the increasing demand for labour services can be met by increasing the labour hours of the same people such as working overtime.

Cost of generation of unskilled labour: The cost of generation/regeneration of unskilled labour is much less expensive. Unskilled labourers do not have to learn much since most of their types of jobs are simple enough to work.

Their works require more physical strength than mental ability; those are basically manual work, e.g. housemaid, vendors, coolie, helper in shops, transport helper, cleaners, etc. The workers engaged in those difficult trades like driving, goldsmith, mechanics, workshops, tailoring, etc. do not have any qualifications, but they are performing very well in their respective trades. There are many illiterates who are successful drivers, jewelers, tailors, carpenters and so on. The cost of generation of these types of labourers is that they have to serve apprenticeship for a few weeks/months/years depending upon the nature of trade. For easy trade they can pick up within a few weeks, for medium it may take a few months and for those complicated ones it may require a few years until they become master in that particular field. During the first part of this apprenticeship period they work without getting any remuneration; but in the second half most of them get a little amount of pocket money. This is the practical cost of generation of unskilled workers. In a few cases there are people who pay some amount of money to the experts to teach them the particular trade, which they want to learn.

The process of generation/regeneration of labour involves a pretty long time. It is completely different from the process of generation of goods and services which can be produced in a much shorter time than labour. It

takes at least 15 to 20 years period to generate a new set of labourers. However, since it is a continuous process of regeneration there is always a steady and gradual supply of labourers at regular intervals. One important cost in the process of generation of labour is on health of the parents which determine the health of the offspring. Expenditure on health care is an important component of the total expenditure of labourer throughout his life. From pre-natal to childcare and till his last days he has to spend some amount of money for health and nutrition continuously. For the labouring class, the poor parents find it very difficult to provide for health and nutrition as they are struggling for their mere subsistence. Similarly, for children's upkeep they can hardly spend the required amount, which ultimately results in the poor quality of the new offspring, i.e. the new generation of labour. However, in many cases a new set of labourers is of much better quality as the parents always want to improve the lot of their children and to ward off from the children the same drudgery of life which they have suffered while they were young. Through their hard work they try to do something good for their next generation.

Most parents send their children to school in their early years so that they can learn to read, write and calculate sums. Even in case of poor families, the parents find it worthwhile to send their children to schools to

learn something as long as they cannot be sent work because they are too young, but when these children reach the age of 10 to 12 years, most of them drop their studies and start earning their livelihood to help their parents as they need extra income to feed the big family. In extreme cases, children of many poor families remain illiterates as they are short of the means of getting education and automatically become the source of supply of unskilled labour. Therefore, there is no cost/less cost of generation/regeneration of unskilled labour. It is obvious that most of them are illiterate, semi-literate and school-dropouts either because of poverty or lack of interest in study, or laziness.

4.2. The Data Base

The data regarding the details of consumption expenditure have been collected for 127 households of casual wagedworkers. Seven sample surveys at different time points (with a gap of some 6 months between every two round) were conducted to collect the information on household consumption expenditure. The first sample survey held in the beginning of the study period covered 7 households and this survey was of a pilot type. The subsequent sample surveys covered some 20 households at each round spaced at about 6 months' interval.

Data were collected on the monthly household expenditure of some 20 wage goods items namely, rice, dal, sugar, tea, potatoes, onion, mustard oil, atta, cigarettes, fish, beef, meat (mutton or pork), Qua/kwai – Pan and betel nuts, vegetables, soap, fuel, house rent, milk and miscellaneous items of daily consumption. Expenditure on clothes, consumer durables, etc. was not taken into consideration. The data so collected have been presented in tables 4.2(i-a) and 4.2(i-b).

Table 4.2(i-a): Monthly Expenditure on Various Wage Goods incurred by Casual Wage Workers in Shillong

Sl. No.	Hhold No.	Rice	Dal	Sugar	Tea	Potato	Onion	M Oil	Atta	Cigarettes	Fish
Col	1	3	4	5	6	7	8	9	10	11	12
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	1	360	52	60	44	70	16	72	0	0	200
2	2	800	200	109	44	112	40	72	30	0	80
3	3	960	13	123	25	18	18	36	18	120	200
4	4	150	0	20	15	60	12	40	0	0	50
5	5	360	0	60	22	70	9	27	0	0	100
6	6	144	0	0	0	0	3	36	0	30	25
7	7	450	26	56	40	120	20	36	0	0	50
8	1	300	40	51	45	20	8	35	40	100	220
9	2	500	60	68	20	55	24	140	56	160	20
10	3	456	20	41	44	80	16	70	8	80	110
11	4	212	10	46	20	50	16	35	10	10	50
12	5	400	20	68	88	60	8	35	4	0	25
13	6	315	40	36	36	50	4	35	12	0	90
14	7	640	60	24	0	40	16	85	24	0	110
15	8	527	70	55	22	70	16	70	80	10	25
16	9	570	40	38	20	70	16	70	24	10	25
17	10	562	10	80	20	8	12	35	0	0	25
18	11	750	0	110	44	200	32	70	0	0	60
19	12	220	35	35	18	22	16	18	0	0	40
20	13	350	40	40	40	60	32	100	4	8	30
21	14	557	60	84	39	100	16	68	0	0	50
22	15	925	40	189	45	160	32	70	0	18	250
23	16	690	60	105	50	100	16	100	96	50	0
24	17	440	60	63	37	50	20	60	135	45	180
25	18	420	60	60	75	0	20	60	0	15	90
26	19	300	0	34	30	50	12	25	0	200	50
27	20	675	20	115	88	0	32	70	8	0	50

28	1	467	60	73	26	50	40	70	0	0	50
29	2	250	0	40	20	0	20	18	45	0	20
30	3	455	0	60	18	60	40	35	36	0	82
31	4	385	0	68	40	60	40	70	0	15	25
32	5	300	20	57	90	75	30	43	96	0	100
33	6	297	28	42	30	50	20	35	28	0	60
34	7	400	0	136	40	60	60	70	0	250	100
35	8	250	0	34	25	0	40	70	0	0	160
36	9	795	40	64	40	10	30	70	18	0	0
37	10	800	11	102	20	65	40	18	130	0	200
38	11	500	10	34	68	10	4	70	6	100	60
39	12	200	28	25	25	68	25	60	12	0	20
40	13	326	20	48	30	100	36	30	120	0	80
41	14	400	50	34	70	10	50	170	0	70	40
42	15	300	44	34	16	40	8	40	0	0	20
43	16	785	0	48	32	35	10	90	0	0	80
44	17	448	0	49	12	30	11	36	0	10	80
45	18	320	30	17	20	30	20	53	0	0	0
46	19	370	20	20	25	15	20	70	9	0	15
47	20	440	0	68	30	25	36	72	36	0	140
48	1	690	48	61	48	144	30	90	10	100	65
49	2	273	0	28	30	80	10	100	15	60	90
50	3	920	36	144	72	320	60	100	20	0	0
51	4	840	72	90	38	160	30	100	120	0	45
52	5	300	24	61	50	80	10	50	10	10	120
53	6	255	24	38	30	50	30	100	10	0	45
54	7	337	24	90	48	120	30	100	60	52	57
55	8	315	48	72	48	250	23	100	20	40	45
56	9	805	48	122	60	180	56	60	0	0	40
57	10	581	0	55	60	160	56	48	18	8	90
58	11	400	0	18	38	108	14	50	0	150	0
59	12	532	96	70	120	200	56	200	18	10	60
60	13	312	24	28	24	68	14	72	0	200	40
61	14	690	36	72	48	51	32	96	20	0	25
62	16	620	52	116	72	20	28	138	18	100	56
63	17	252	36	20	45	120	15	75	0	0	0
64	18	570	0	39	30	60	20	0	50	30	47
65	19	788	0	109	30	260	40	75	20	0	82
66	20	200	25	18	30	100	10	50	0	5	40
67	21	420	25	63	60	140	18	50	15	25	50
68	1	780	0	250	24	20	15	65	0	120	210
69	2	264	10	36	20	26	25	80	10	120	40
70	3	660	45	54	20	192	28	140	50	200	0
71	4	620	130	72	30	60	56	350	50	0	400
72	5	220	28	18	30	22	25	70	25	20	120
73	6	340	18	41	26	160	50	120	0	0	80
74	7	975	36	152	60	200	25	250	0	5	40
75	8	770	112	135	30	25	25	245	45	0	135
76	9	466	224	36	18	20	25	105	80	100	200
77	10	660	0	120	120	20	0	100	75	30	0
78	11	495	56	54	30	55	62	193	0	60	270
79	12	450	168	127	30	200	0	350	150	4	160
80	13	585	108	67	48	80	50	140	120	0	200

81	14	670	81	95	30	24	14	160	0	120	40
82	15	660	56	63	30	25	25	35	40	0	25
83	16	360	18	70	25	0	13	80	27	0	80
84	17	880	28	81	120	35	0	140	0	120	60
85	18	595	9	174	20	144	14	160	20	20	272
86	19	176	21	36	25	80	12	140	0	150	0
87	20	330	0	36	30	75	20	20	45	250	135
88	21	890	56	186	100	120	25	80	0	200	75
89	1	480	36	50	30	49	15	200	50	0	45
90	2	480	50	55	40	63	18	75	0	8	60
91	3	360	0	26	30	42	6	30	0	10	15
92	4	384	24	34	16	35	12	55	0	0	45
93	5	420	12	76	68	70	24	150	120	150	180
94	6	585	0	68	40	220	45	100	20	60	0
95	7	285	72	23	38	35	12	55	0	0	0
96	8	471	24	62	30	126	12	110	0	0	0
97	9	563	24	73	60	35	12	75	0	100	100
98	10	763	48	90	52	84	12	100	0	0	100
99	11	396	36	60	15	30	24	90	0	300	0
100	12	360	30	34	30	105	12	150	0	120	90
101	13	480	48	51	32	210	24	60	10	40	100
102	14	600	24	85	80	70	24	80	20	40	120
103	15	562	48	77	60	0	12	75	30	0	0
104	16	700	0	46	60	35	24	100	20	0	0
105	17	540	24	68	60	35	20	53	30	0	160
106	18	576	72	68	25	84	24	100	80	0	45
107	19	576	78	70	25	132	25	60	0	250	160
108	20	755	0	61	30	105	0	0	55	0	0
109	1	780	175	136	180	175	40	180	0	300	0
110	2	540	20	40	35	70	15	50	44	0	40
111	3	840	100	70	50	84	20	100	0	0	0
112	4	264	13	18	20	15	6	25	0	20	0
113	5	418	50	42	34	84	10	100	15	60	0
114	6	576	50	100	55	112	20	100	220	0	160
115	7	576	50	100	24	30	15	70	0	20	0
116	8	300	0	35	40	84	20	90	0	0	40
117	9	840	25	68	70	70	20	100	0	0	0
118	10	480	100	36	24	49	10	50	44	28	45
119	11	288	50	20	20	72	10	36	0	0	40
120	12	624	25	36	40	48	12	50	44	0	0
121	13	336	50	35	48	84	10	48	0	0	100
122	14	420	50	36	45	70	20	45	20	0	0
123	16	210	100	51	60	84	10	90	0	100	0
124	17	600	50	67	28	84	20	90	22	0	45
125	18	582	112	79	30	140	30	90	0	10	0
126	19	500	25	30	50	45	10	90	0	0	0
127	20	549	100	50	70	70	22	135	44	0	280
Total -----		63526	5014	8266	5239	9777	2830	10694	3134	5226	9046

Percentage											
Expenditure		25.919	2.046	3.373	2.138	3.989	1.155	4.363	1.279	2.132	3.691

**Table 4.2(i-b): Monthly Expenditure on
Various Wage Goods incurred by Casual Wage Workers in Shillong**

Sl. No.	Hhold No.	Beef	Meat	Pan + Nuts	Vegetablea	Soap	Fuel	House Rent	Milk	Miscellaneous	Total Expenditure
Col	1	13	14	15	16	17	18	19	20	2	21
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	1	300	80	140	60	30	200	300	150	0	2134
2	2	200	0	250	0	50	0	250	0	45	2282
3	3	200	120	400	20	65	14	0	0	16	2366
4	4	100	0	100	22	20	128	0	0	0	717
5	5	300	0	150	20	30	200	350	70	0	1768
6	6	0	80	0	240	18	0	0	0	0	576
7	7	400	0	200	25	40	180	0	150	0	1793
8	1	70	160	90	150	30	0	300	50	0	1709
9	2	100	0	45	150	35	184	300	0	0	1917
10	3	240	80	0	30	35	137	300	0	0	1747
11	4	360	40	150	30	20	160	180	0	0	1399
12	5	120	0	30	15	35	132	0	180	0	1220
13	6	240	80	100	25	18	185	160	0	0	1426
14	7	240	80	100	60	30	140	200	0	0	1849
15	8	60	0	160	70	40	160	250	0	0	1685
16	9	120	80	100	15	20	115	200	0	0	1533
17	10	120	0	100	0	40	262	300	150	5	1729
18	11	0	0	75	120	40	120	200	0	0	1821
19	12	240	40	90	25	25	35	0	0	0	859
20	13	240	120	100	70	20	310	220	0	0	1784
21	14	120	120	250	18	45	0	200	0	0	1727
22	15	240	0	300	200	60	240	250	150	0	3169
23	16	120	0	0	55	40	180	300	100	0	2062
24	17	280	160	110	100	35	185	170	0	0	2130
25	18	150	100	85	20	30	110	300	40	0	1635
26	19	200	0	60	50	20	80	300	0	0	1411
27	20	480	0	0	0	35	0	85	0	42	1700
28	1	270	80	140	185	50	170	0	0	0	1731
29	2	60	0	60	10	18	16	0	0	0	577
30	3	250	0	50	60	35	160	160	10	0	1511
31	4	0	0	250	90	48	200	400	0	0	1691
32	5	80	0	100	50	25	185	250	150	0	1651
33	6	90	80	70	50	25	230	350	0	0	1485
34	7	480	120	180	80	30	150	0	0	0	2156
35	8	0	80	60	120	15	140	350	0	0	1344
36	9	0	650	0	200	48	120	300	0	400	2785
37	10	120	0	45	80	50	60	200	0	0	1941
38	11	120	0	68	80	32	120	100	0	0	1382
39	12	240	80	160	48	18	0	200	0	0	1209
40	13	100	0	100	40	35	40	120	224	0	1449
41	14	150	100	150	10	30	380	300	0	30	2044
42	15	120	80	50	25	18	190	200	0	0	1185
43	16	240	0	180	20	40	144	300	0	0	2004
44	17	180	0	0	23	25	106	120	0	0	1130
45	18	360	0	140	100	20	260	250	0	0	1620
46	19	240	80	160	200	25	100	400	160	0	1929

47	20	0	80	130	0	25	0	320	0	0	1402
48	1	240	100	180	100	40	52	0	0	0	1998
49	2	0	0	70	180	40	30	0	180	0	1186
50	3	840	160	360	180	45	140	200	0	0	3597
51	4	240	80	140	40	60	30	0	0	0	2085
52	5	120	0	60	120	40	80	250	108	0	1493
53	6	300	80	45	120	30	58	0	0	0	1215
54	7	240	80	80	120	37	220	0	0	0	1695
55	8	240	80	88	68	40	35	0	0	0	1512
56	9	900	0	400	100	68	270	500	0	0	3609
57	10	240	0	128	52	60	200	350	0	0	2106
58	11	240	0	128	40	30	80	300	0	17	1613
59	12	480	100	220	92	60	360	270	0	0	2944
60	13	240	0	0	70	25	192	250	0	0	1559
61	14	200	80	90	40	30	240	300	0	0	2050
62	16	120	100	50	128	80	540	400	150	0	2788
63	17	0	160	92	72	18	53	150	150	0	1258
64	18	450	40	160	100	30	90	250	0	0	1966
65	19	240	0	168	45	40	211	250	0	0	2358
66	20	120	0	0	40	15	120	250	0	0	1023
67	21	240	0	84	45	30	176	250	0	0	1691
68	1	240	0	220	180	40	170	450	0	0	2784
69	2	240	100	100	69	18	144	450	0	0	1752
70	3	0	600	200	120	30	200	300	20	0	2859
71	4	0	90	140	200	35	167	650	0	0	3050
72	5	0	0	108	88	17	108	300	0	0	1199
73	6	360	0	110	120	40	480	700	0	0	2645
74	7	400	100	300	100	40	600	600	0	0	3883
75	8	0	0	25	68	60	170	400	0	0	2245
76	9	0	0	280	80	40	228	400	0	0	2302
77	10	0	190	180	108	38	20	350	0	0	2011
78	11	90	0	0	112	25	280	250	168	0	2200
79	12	0	180	0	150	30	200	430	0	0	2629
80	13	0	180	150	200	25	250	42	150	0	2395
81	14	90	0	75	80	35	200	350	0	0	2064
82	15	240	0	75	150	38	120	400	0	0	1982
83	16	120	100	25	20	25	360	0	56	0	1379
84	17	0	200	220	140	40	460	600	0	0	3124
85	18	240	100	75	0	50	228	300	0	109	2530
86	19	0	0	300	68	25	60	350	0	0	1443
87	20	360	0	0	120	30	390	270	0	0	2111
88	21	420	400	240	200	50	0	500	0	0	3542
89	1	0	180	110	60	30	140	200	0	0	1675
90	2	100	120	120	100	30	165	300	0	0	1784
91	3	100	0	70	0	40	165	300	90	0	1284
92	4	100	160	60	50	44	160	300	0	0	1479
93	5	400	0	250	140	80	120	470	116	0	2846
94	6	0	150	30	100	52	150	350	0	80	2050
95	7	120	160	130	120	80	195	350	555	0	2230
96	8	200	0	50	72	64	123	400	0	0	1744
97	9	200	120	260	50	40	150	300	75	0	2237
98	10	50	0	210	50	80	240	250	0	0	2129
99	11	400	0	120	0	62	150	430	90	0	2203

100	12	250	120	120	48	15	172	600	0	0	2256
101	13	250	0	120	68	25	40	300	0	0	1858
102	14	200	120	220	0	23	22	0	0	0	1728
103	15	200	160	160	0	22	115	0	0	0	1521
104	16	200	160	250	48	18	100	400	0	0	2161
105	17	60	160	68	60	20	196	180	90	0	1824
106	18	0	380	0	100	23	320	205	0	0	2102
107	19	50	0	180	92	25	160	300	0	0	2183
108	20	600	0	75	0	60	460	300	0	0	2501
109	1	200	180	120	0	100	105	300	100	0	3071
110	2	100	80	80	40	25	80	300	0	0	1559
111	3	200	120	200	0	100	23	170	0	50	2127
112	4	100	0	110	70	18	139	250	0	0	1068
113	5	100	0	100	0	20	270	300	0	0	1603
114	6	0	160	160	80	80	240	400	132	0	2645
115	7	100	0	90	50	28	120	250	0	0	1523
116	8	350	80	90	100	50	405	350	0	0	2034
117	9	250	100	50	140	40	150	0	50	40	2013
118	10	100	40	130	180	50	136	350	0	0	1852
119	11	200	0	120	80	10	175	300	0	0	1421
120	12	0	80	80	150	20	80	350	24	0	1663
121	13	100	0	100	40	40	200	300	90	0	1581
122	14	350	160	160	120	80	350	400	0	0	2326
123	16	25	80	100	80	30	120	200	0	0	1340
124	17	100	0	200	150	60	179	400	0	0	2095
125	18	700	240	40	180	45	333	0	0	0	2611
126	19	50	80	120	70	22	80	200	0	0	1372
127	20	400	480	200	200	80	463	0	0	0	3143
Total -----		23735	9940	15497	10074	4798	21231	32252	3978	834	245091
<hr/>											
Percentage Expenditure		9.684	4.056	6.323	4.110	1.958	8.662	13.159	1.623	0.340	100.000

4.3. Monthly Average Expenditure (per household) on Wage Goods

As it may be seen in table 4.3(i), rice and house rent are the first two major claimants, accounting for a little over 40 percent of the total expenditure on wage goods. Beef, fuel and pan (+betel nuts) are the next significant claimants accounting for an additional 24 percent of the total expenditure. Potatoes, onions and vegetables together claim for some 9 percent of the total expenditure. Sugar, tea and milk together account for

about 7 percent of the total expenditure. Fish, beef, meat (includes pork and mutton), potatoes, onions, vegetables and mustard oil together claim for a little over 30 percent of the total expenditure.

**Table 4.3(i). Mean Monthly Household Consumption Expenditure on Wage Goods
(Incurred by a typical Average Casual Wage Worker Household)**

Rice	500.20	Atta	24.68	Soap	37.78
Dal	39.48	Cigarettes	41.15	Fuel	167.17
Sugar	65.09	Fish	71.23	House rent*	304.26
Tea	41.25	Beef	186.89	Milk	31.32
Potatoes	76.98	Meat	78.27	Miscellaneous	6.57
Onions	22.28	Pan + Nuts	122.02	Adj for H rent*	(50.31)
Mustard Oil	84.20	Vegetables	79.32	Total Expenditure	1980.16**

* Twenty-one households live in the houses owned by them and pay no rent. ** Adjusted in view of the imputed house rent (Rs. 50.31 per month per household).

We recall that the average family/household size of a casual wageworker is 5.4 persons. Thus, the per capita expenditure on consumption of wage goods works out to be a little over Rs. 360 per month or Rs 12/day.

It is to be recalled that the monthly average earning of a typical unskilled casual wageworker household is Rs. 1920.31 (median = Rs. 1650), while that of a skilled casual wageworker is Rs.2098.43 (median = Rs. 2000). A number of households have skilled as well as unskilled casual wageworkers. The monthly average income of an unspecified casual wageworker household is Rs. 2389.34 (median = Rs. 2182.50). The monthly average income of an unspecified casual worker household is more than the specified (skilled as well as unskilled) casual wage worker household, for in

the former (unspecified) category there are many households with more than one earning member, some skilled and others unskilled. In view of these figures, the monthly average expenditure on wage goods (that does not include expenditure on medicines, education of children, clothes, small consumer durables, etc.) is quite a substantial percentage of income. Unless a casual wageworker household has more than one earning member, it may have serious difficulties in subsistence.

4.4. Consumption Function and Propensities to Consume

A household of an average casual wageworker has its average propensity to consume = 0.75. That is to say that an average household of a casual wageworker spends nearly $3/4^{\text{th}}$ of its monthly income on the consumption of wage goods. This figure is exclusive of the expenditure incurred on medicines, transportation/conveyance, education of children, small consumers durables, recreation, etc.

The Keynesian Consumption function is estimated as:

$$C = f(Y) = 1078.574 + 0.323Y; \quad R^2 = 0.424; F = 101.53$$

t value : (11.853) (10.076)

The augmented Consumption function (as a function of income, extra income and family size) is estimated to be:

$$C = f(Y, TY, H) = 1085.901 + 0.332Y + 0.0891TY - 282.016H \quad R^2 = 0.453; F = 37.54$$

(12.077) (10.289) (0.647) (2.623)

Keynesian consumption function for house-owners is estimated as:

$$C = 1069.640 + 0.248Y \quad R^2 = .323; F = 9.546;$$

(4.03) (3.090)

For non-owners, $C = 1029.053 + 0.361Y : R^2 = 0.485; F = 109.361$
 (10.891) (10.458)

Consumption as a function of income, house-ownership status and family size is estimated as:

$$C = f(Y, H, Fsize) = 686.281 + 0.243Y - 320.701H + 118.855FS; R^2 = .629; F = 76.98$$

(7.702) (8.520) (3.619) (8.082)

We may classify different items of wage goods into three categories:

1. FOODCAL (commodities used as food yielding calories): This includes: Atta, Beef, Dal, Rice, Sugar, Potato, Onion, Mustard oil, Fish, Meat, Vegetables and Milk.
2. STIMULANTS: Tea, Cigarettes and Pan & betel nuts.
3. OTHER Consumption: Soap, Fuel, House-rent and Miscellaneous.

Tables 4.4(i) through 4.4(iii) present the relationship of expenditure on these categories with income and family size.

Table 4.4(i): Regression coefficients of Foodcal on Income and Family Size

FOODCAL = f (**)		Coeff.	Std. Error	Beta	t	Sig.	Elasticity
	(Constant)	359.990	69.297		5.195	0.000	
$R^2 = 0.616$	INCOME	.170	.022	.469	7.544	0.000	0.3409
F = 97.91	FAMILY SZ	85.779	11.582	.460	7.406	0.000	0.3743

Table 4.4(ii): Regression coefficients of Stimulants on Income and Family Size

STIMULANTS = f (**)		Coeff.	Std. Error	Beta	t	Sig.	Elasticity
	(Constant)	45.628	26.366		1.731	.086	
$R^2 = 0.266$	INCOME	0.0391	.009	.393	4.576	.000	0.4884
F = 22.06	FAMILY SZ	10.507	4.407	.205	2.384	.019	0.2858

Table 4.4(iii): Regression coefficients of Other_Cons on Income and Family Size

OTHERCON = f (**)		Coeff.	Std. Error	Beta	t	Sig.	Elasticity
	(Constant)	285.403	54.754		5.212	.000	
R ² = 0.089	INCOME	0.02871	.018	.155	1.617	.108	0.1573
F = 5.93	FAMILY SZ	18.768	9.151	.196	2.051	.042	0.2239

Table 4.4(iv): Income and Family-size Elasticities

Dependent Variable		FOODCAL	STIMULANTS	OTHER CONS
Independent Variables	WAGE INCOME	0.3409	0.4884	0.1573
	FAMILY SIZE	0.3743	0.2858	0.2233

Of the elasticities, income elasticity of ‘other consumption goods’ is the smallest while that of the ‘Stimulants’ is the largest, though every good is income-inelastic and family-size-inelastic. As a matter of fact, the prevailing wage rates in the market and the natural ceiling on the number of days that the casual wage labourers can work determine the limits on earnings. Earnings can be increased only if another member of the household can join the pool of labourers.

Of income elasticities of individual wage goods (table 4.4(v)), all are positive (as expected) but only three of them are marginally above unity (Cigarettes, Meat and Miscellany). Among the rest (with income elasticities well below unity), Green vegetables and Fish have relatively larger elasticities. Among the articles exhibiting extremely small income elasticity, soap, house-rent and milk are important as their regression coefficients are statistically insignificant (may not be different from zero).

Table 4.4(v): Income and Family-size Elasticities

Goods	Constant	Coefficients		R ²	F Value	Elasticities	
		Income	Fam-size			Income	Capita
Atta	16.330 (1.722)	0.00018 (0.058)	1.390 (0.877)	0.008	0.50	0.0186	0.3131
Beef	44.007 (1.127)	0.02394 (1.89)	15.145 (2.32)	0.113	7.80	0.3221	0.4437
Dal	15.377 (1.703)	0.004275 (1.460)	2.162 (1.432)	0.057	3.66	0.2838	0.3125
Fish	28.660 (1.614)	0.01215 (2.110)	1.941 (0.654)	0.057	3.72	0.4384	0.1525
Meat	0.01318 (0.001)	0.03597 (4.373)	-2.247 (0.530)	0.149	10.68	1.1573	-0.1574
Milk	34.267 (1.893)	0.001387 (0.236)	-1.081 (0.357)	0.001	0.07	0.1102	-0.1870
Mustard oil	41.983 (3.097)	0.01275 (2.900)	1.691 (0.746)	0.098	6.64	0.3859	0.1114
Onion	9.181 (2.832)	0.00256 (2.434)	1.217 (2.245)	0.136	9.60	0.2896	0.2998
Potato	29.801 (2.045)	0.00672 (1.422)	5.528 (2.269)	0.091	6.09	0.2200	0.3940
Rice	93.965 (3.074)	0.04339 (4.377)	54.137 (10.597)	0.633	104.99	0.2187	0.5940
Sugar	-6.194 (0.864)	0.009385 (4.035)	8.728 (7.281)	0.487	57.95	0.3618	0.7327
Green Vegetables	52.598 (3.780)	0.01683 (3.730)	-2.830 (1.217)	0.104	7.05	0.5346	-0.1958
Cigarettes	15.095 (0.901)	0.01681 (3.092)	-3.184 (1.137)	0.073	4.80	1.0610	-0.4376
Pan+Nuts	16.377 (0.895)	0.0171 (2.882)	11.113 (3.634)	0.235	18.70	0.3579	0.5064
Tea	14.156 (2.414)	0.005216 (2.743)	2.578 (2.630)	0.172	12.65	0.3175	0.3417
Soap	9.385 (2.620)	0.00223 (1.915)	4.167 (6.959)	0.390	38.95	0.1486	0.6044
Fuel	99.404 (3.441)	0.01217 (1.299)	6.629 (1.373)	0.049	2.13	0.1846	0.2189
House-rent	186.091 (4.948)	0.01089 (0.893)	6.612 (1.052)	0.027	1.662	0.1101	0.1456
Miscellany	-9.478 (1.000)	0.003427 (1.115)	1.360 (0.859)	0.027	1.72	1.2983	1.1219

Expenditure on good_i = $a_0 + a_1$ Income + a_2 Fam-size + e ; estimation by OLS. Figures in the parentheses are t values. Income elasticity of expenditure on good_i = a_1 * (mean income/mean consumption expenditure on good_i). Family-size elasticities defined analogously.

Of the elasticities related to family size (Capita), Meat, Milk, Vegetables and Cigarettes have negative value. Mustard oil, Fish, fuel and house-rent have elasticities barely above zero. Rice, Sugar, Soap and Pan &

nuts have elasticity above 0.5. Only the miscellany has elasticity larger than unity. Negative family-size elasticities emerge possibly due to substitution of consumption of the specified commodities (meat, milk, vegetables and cigarettes) by other necessities in response to increase in the size of family.

Chapter 5

TRENDS IN WAGE GOODS PRICES AND COST OF LIVING OF CASUAL WORKERS IN SHILLONG.

5.1. Introduction

In this chapter, our main concern is to investigate into the temporal movements in wage goods prices during the study period. We would also construct Cost of Living Indices for casual wageworkers in Shillong.

5.2. The Data Base

Data on the prices of wage goods were collected from the Bara Bazar, Shillong, during the period November 1996 to Feb. 2000. With a few exceptions, price data for 33 commodities (belonging to the wage goods category) were collected twice a month, which later on were used to construct average monthly prices. Data on two types of prices were collected, the low prices and the high prices. It is a common experience that there is some variation in the prices quoted for various commodities that a consumer purchases. Variations are due to qualitative differences in the commodities being sold in different shops. Further, most of the shopkeepers as well as the buyers expect and practice haggling and negotiation, since the prices are not fixed. Prices vary according to location, size, ownership etc. as

well. Hence, it was considered useful to record two prices (the lowest and the highest prices) among the different prices quoted for any particular commodity in different shops.

Table 5.2(i). Dates of Data Collection Regarding Wage Goods Prices

1996		1997		1998		1999		2000	
Date	Month	Date	Month	Date	Month	Date	Month	Date	Month
		03/01/97	3	10/01/98	15	13/1/99	27	08/01/2K	39
		18/01/97	3	27/01/98	15	28/1/99	27	29/01/2K	39
		01/02/97	4	12/02/98	16	06/02/99	28	04/02/2K	40
		14/02/97	4	25/02/98	16	22/02/99	28		
		06/03/97	5	03/03/98	17	05/03/99	29		
		18/03/97	5	30/03/98	17	23/03/99	29		
		03/04/97	6	13/04/98	18	10/04/99	30		
		16/04/97	6	30/04/98	18	27/04/99	30		
		03/05/97	7	16/05/98	19	10/05/99	31		
		31/05/97	7	29/05/98	19	29/05/99	31		
		21/06/97	8	13/06/98	20	08/06/99	32		
		04/07/97	9	27/06/98	20	24/06/99	32		
		28/07/97	9	10/07/98	21	10/07/99	33		
		16/08/97	10	25/07/98	21	22/07/99	33		
		30/08/97	10	04/08/98	22	10/08/99	34		
		20/09/97	11	24/08/98	22	23/08/99	34		
		02/10/97	12	08/09/98	23	04/09/99	35		
		25/10/97	12	28/09/98	23	29/09/99	35		
		12/11/97	13	14/10/98	24	08/10/99	36		
		29/11/97	13	30/10/98	24	30/10/99	36		
15/11/96	1	15/12/97	14	10/11/98	25	10/11/99	37		
23/11/96	1	29/12/97	14	28/11/98	25	26/11/99	37		
07/12/96	2			10/12/98	26	11/12/99	38		
21/12/96	2			29/12/98	26	29/12/99	38		

Data were collected on the prices of the following commodities of everyday consumption by the casual wage workers :(1) Rice, (2) Dal, (3) Atta, (4) Sugar, (5) Tea, (6) Potatoes, (7) Onion, (8) Mustard oil, (9) Fresh fish, (10) Dry fish, (11) Beef, (12) Pork, (13) Mutton, (14) Cabbage, (15) Tomatoes, (16) Brinjals, (17) Bitter Gourd, (18) Carrot, (19) Cauliflower,

(20) Beans, (21) Radish, (22) Turnip, (23) Rai leaves, (24) Mustard leaves, (25) Squash, (26) Bhindi, (27) Chillies, (28) Cigarettes, (29) Biri, (30) Pan leaves, (31) Betel nuts, (32) Charcoal, (33) Kerosene oil.

Prices of fresh fish and dry fish were averaged to obtain the prices of ‘*fish*’. Similarly, prices of vegetables - cabbage through chillies (in the list above) – were averaged to obtain prices of ‘*green vegetables*’. ‘*Fuel*’ prices were obtained by a weighted average of charcoal and kerosene oil prices with weights 0.4 and 0.6 respectively. Similarly, “*Qua*” prices were obtained by a weighted average of Pan leaf and betel nuts prices with weights 0.3 and 0.7 respectively. By this artifact, finally we had the following commodities: (1) Rice, (2) Dal, (3) Atta, (4) Sugar, (5) Tea, (6) Fish, (7) Beef, (8) Mutton, (9) Pork, (10) Potatoes, (11) Onion, (12) Green Vegetables, (13) Mustard oil, (14) Qua (Pan leaves and betel nut), (15) Cigarettes, (16) Biri, (17) Fuel. We also observe that pork and mutton have prices very close to each other and thus they may be averaged to obtain ‘*meat*’ prices.

Table 5.2(ii-a): Low and High Prices of Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)														
Sl No.	Rice		Dal		Sugar		Tea		Potato		Onion		Mustard Oil	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
2	9	9.75	25.8	25.8	15.6	15.9	60	80	7	8.75	9	9.5	36	37
3	9	10	25.8	25.8	15.1	15.4	60	84	7.25	8.75	9	9.75	36	37.5
4	8.88	9.88	25.8	25.8	15	15	60	88	6.75	7.75	8.5	9	36	38
5	8.88	9.88	24.3	25	15	15	63	88	5.5	6.25	8	8.75	36	38
6	8.5	10.25	23.3	24.3	15	15.1	69	88	4.63	5.25	8	8.75	36	38

7	8.75	10.25	22.5	23	15.5	15.9	72	88	4.25	5	7.75	7.75	36	38
8	9.25	10.5	20.8	21	16	16.3	76	94	4.13	4.5	6.75	6.75	35.5	36.5
9	9.5	11	19.8	20	16.4	16.5	80	100	4.38	4.5	6.5	6.75	35	35.25
10	9.75	10.88	19.5	20	16.6	16.8	79	100	4.75	5	7.5	7.75	35	35.5
11	9.75	10.63	19.8	20	16.8	16.8	79	100	4.88	5	8	8	35	35.25
12	9.88	10.63	20	20	17	17	80	100	4.75	5	8	8	34.8	35.25
13	9.75	10.88	20	20	17	17	80	100	4.75	5.25	10.25	10.3	34.3	35.25
14	9.75	10.88	20.5	20.5	17	17	80	100	5	5.25	16.25	16.3	34.3	35.25
15	9.75	10.75	21.3	22.3	17	17	90	110	4.75	5	20	20.5	35	36.25
16	9.63	10.63	21.8	23.3	17	17	100	130	4.75	5.25	20	21	35.8	36.5
17	9.5	10.5	22	22.5	17	17	100	140	5.5	6	16.25	16.8	36.5	37.5
18	9.63	10.5	22	22.5	17.1	17.3	100	140	6.5	7.5	11.25	11.3	38.5	40
19	9.63	10.5	22	22.5	17.1	17.3	100	140	7.5	8.75	9.5	10	41	42
20	9.63	10.5	22.5	22.5	17.3	17.3	100	140	8	8.75	10	11	43.3	44.75
21	9.75	10.63	23.8	23.8	17.8	17.8	100	140	8.75	9.25	12.75	13.5	46.8	48.75
22	9.88	10.88	24.5	24.8	18	18	100	140	9.75	10.5	16.75	17.5	49	50.5
23	10.3	11.5	24.8	25	17.9	18	100	140	12	13	24	24.5	54.5	55
24	10.6	12	25.8	25.8	17.9	18	100	140	13	14	34.5	35.8	65	70
25	10.5	12.25	27	27.3	17.5	17.5	100	140	12	12.75	38.75	41.3	68.8	79
26	10.4	12.25	27.5	28	17.5	17.5	100	140	10.8	11.5	31.25	33	65	79
27	10.5	12	25.3	26.5	17.8	17.8	100	140	7.75	8.5	19.25	20	61.3	77.5
28	10.8	12.5	23.5	25	17.3	17.6	100	140	5.5	5.75	11.75	12	58.8	70
29	11.1	13	23.8	25	17.3	17.6	100	140	5	5	11	11.3	56.3	65
30	11.1	13	23.8	24.5	17.3	17.3	100	140	5.13	5.5	10.5	11.3	52.5	61.5
31	11.1	12.75	24	24	17.1	17.3	100	140	5.63	6.5	9.75	10.5	48.8	55.25
32	11.4	12.38	24	24	17.1	17.5	100	140	5.75	6.75	10.25	11	43.8	51.25
33	11.4	12.63	24	24.3	17.3	17.6	100	140	5.75	6.25	11	12	40	49.5
34	11.4	12.75	24.5	24.8	17.3	17.6	100	140	5.5	5.75	12	12.5	41.3	48.25
35	11.3	12.38	25	25.3	17.3	17.5	100	140	5.75	6.25	13.25	13.8	43.8	48.75
36	11.1	12.38	25	25.5	17.8	17.8	100	140	6.75	7.5	15.5	16.8	44.8	51.25
37	11.3	12.5	25	25.5	17.6	18	100	140	7	7.75	16	17.5	44.5	52.5
38	11.4	12.75	25	25.3	17.4	18	100	140	6.75	7.5	13.25	14	44.5	51.75
39	11	12.5	25	25	17.4	18	100	140	6.25	7	10	10	42.3	51.25
40	10.5	12	25	25	17.1	17.8	100	140	5.5	6.25	8.5	8.5	40	50.75

Price data smoothened by 2-months moving average method for all 33 commodities.

**Table 5.2(ii-b): Low and High Prices of
Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)**

Sl. No.	Atta		Cigarettes		Fresh Fish		Dry Fish		Beef		Pork		Mutton	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
2	9	9	7	7	40	60	45	90	50	50	80	80	80	80
3	9	9	7	7	40	60	50	100	50	50	80	80	80	80
4	9	9	7	7	40	60	50	100	50	50	80	80	80	80
5	9	9.25	7.25	8	40.8	57.5	50	100	50	50	80	80	80	80
6	9.13	9.75	7.75	10	49.5	62.5	50	100	52.5	52.5	80	80	80	80
7	9.13	9.5	8	11.5	48.8	70	50	100	57.5	57.5	80	80	80	80
8	8.5	8.5	8	12	40	70	50	100	60	60	80	80	80	80
9	8	8	7.5	12	38.8	80	49.5	100	60	60	80	80	80	80
10	8	8	7	12	41.3	82.5	54.5	100	60	60	80	80	80	80
11	8	8	7	12	42.5	67.5	60	100	60	60	80	80	80	80
12	8	8	7.5	12	41.3	65	60	105	60	60	80	80	80	80
13	8	8	8	12	41.3	67.5	60	115	60	60	80	80	80	80

14	8.25	8.25	7.5	11	41.3	62.5	60	120	60	60	80	80	80	80
15	9	9.25	7.5	11	41.3	59.5	60	110	60	60	80	80	80	80
16	9.75	10	9	11.5	39.5	59.5	60	110	60	60	80	80	80	80
17	9.75	9.75	10	11	39.5	58.8	60	120	60	60	80	80	80	80
18	9.5	9.5	9.25	11.3	41.3	71.3	60	120	60	62.5	80	80	80	80
19	9	9.25	8	11.8	38.8	87.5	60	120	60	62.5	80	80	80	80
20	8.75	9	7.75	12	37.5	85	60	115	60	60	80	80	80	80
21	9	9	8.5	12.3	42.5	85	60	105	60	60	80	80	80	80
22	9	9	9.5	12.8	40	80	60	105	60	60	80	80	82.5	82.5
23	9.5	9.5	10	13.3	37.5	65	60	115	60	60	90	90	87.5	87.5
24	9.75	9.75	10	13.8	42.5	65	60	120	60	60	100	100	90	90
25	9.75	9.75	10	14	42.5	65	60	120	55	60	100	100	90	90
26	10	10	10	14	38.8	65	60	120	50	60	100	100	90	90
27	10	10	10	14	40	70	60	120	50	60	92.5	97.5	90	90
28	10	10	9	14	40.8	65	70	120	50	60	82.5	92.5	90	90
29	10	10	8	14	37	62.5	80	120	50	60	80	90	90	90
30	10	10	8	14	37	67.5	80	120	50	60	80	90	90	90
31	10	10	8	14	39.5	77.5	85	120	50	60	80	87.5	90	90
32	10	10	8.5	14	38.8	80	95	135	50	55	80	82.5	90	90
33	10	10	9.5	14	38.8	80	100	150	50	50	80	80	90	90
34	10.5	10.5	10	14	42.5	82.5	110	155	50	50	80	80	90	90
35	11	11	10	14	40	75	120	160	50	50	80	80	90	90
36	11.3	11.3	10	14.3	38.8	75	105	158	50	50	80	80	90	90
37	11.3	11.5	10	14.8	41.3	75	90	158	50	50	80	80	90	90
38	10.5	11	10	15	41.3	67.5	85	158	50	50	80	80	90	90
39	10	10.5	10	15	41.3	65	75	143	50	50	80	80	90	90
40	10	10.3	10	15	42.5	77.5	65	125	50	50	80	80	90	90

Price data smoothened by 2-months moving average method for all 33 commodities.

**Table 5.2(ii-c): Low and High Prices of
Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)**

Sl No.	Pan Leaves		Betel Nut		Cabbage		Tomatoes		Brinjal		Bitter Gourd		Carrot	
	Low	High	Low	High	Low	High	Low		Low	High	Low	High	Low	High
2	8	12	60	70	6.25	6.75	13.5	2	8	12	60	70	6.25	6.75
3	8	12	60	70	4.75	5.5	13.5	3	8	12	60	70	4.75	5.5
4	8.5	12.75	65	77.5	4.25	5.25	10	4	8.5	12.75	65	77.5	4.25	5.25
5	8.5	12.75	58.8	75	4.25	5.25	7	5	8.5	12.75	58.8	75	4.25	5.25
6	8.5	12.75	50	67.5	4	4.5	6.25	6	8.5	12.75	50	67.5	4	4.5
7	7.75	13	46.3	67.5	4.75	4.75	8.75	7	7.75	13	46.3	67.5	4.75	4.75
8	5.25	10.25	40	82.5	4.75	5.25	13.5	8	5.25	10.25	40	82.5	4.75	5.25
9	4	8.5	45	93.8	5	6.25	15	9	4	8.5	45	93.8	5	6.25
10	4.25	9.5	52.5	88.8	6	7.25	12.5	10	4.25	9.5	52.5	88.8	6	7.25
11	4.25	9	52.5	85	6	6.5	12.5	11	4.25	9	52.5	85	6	6.5
12	4.25	8	55	90	6.25	6.5	15	12	4.25	8	55	90	6.25	6.5
13	5	9	58.8	100	5.75	6.25	14	13	5	9	58.8	100	5.75	6.25
14	6	10.5	52.5	90	4.5	5	10.5	14	6	10.5	52.5	90	4.5	5
15	7.25	12.25	50	80	3.75	4.25	8.5	15	7.25	12.25	50	80	3.75	4.25
16	9	14	55	85	3.75	4	8	16	9	14	55	85	3.75	4
17	11	15.25	58.8	90	4.25	4.25	8	17	11	15.25	58.8	90	4.25	4.25
18	11	15.5	57.5	87.5	5.75	6.25	9.5	18	11	15.5	57.5	87.5	5.75	6.25
19	7	12	53.8	92.5	8	9	10.5	19	7	12	53.8	92.5	8	9
20	4.5	9.5	53.8	92.5	8.25	9	11.5	20	4.5	9.5	53.8	92.5	8.25	9

21	5	10	54	88.8	6.75	7.5	12.5	21	5	10	54	88.8	6.75	7.5
22	4.5	9.5	60.3	106	6.75	7.25	12.5	22	4.5	9.5	60.3	106	6.75	7.25
23	4	9.5	66.3	120	8.25	9.25	13.75	23	4	9.5	66.3	120	8.25	9.25
24	4.5	10	58.8	115	9	11	15.25	24	4.5	10	58.8	115	9	11
25	4.75	9.5	55	97.5	10	11	22.5	25	4.75	9.5	55	97.5	10	11
26	4.75	10	61.3	83.8	9.5	9.5	25.5	26	4.75	10	61.3	83.8	9.5	9.5
27	5.25	11	62.5	88.8	6.75	7	15	27	5.25	11	62.5	88.8	6.75	7
28	5.5	11	61.3	97.5	5	5.5	6.25	28	5.5	11	61.3	97.5	5	5.5
29	7.25	14	62.5	100	4.25	4.5	4.75	29	7.25	14	62.5	100	4.25	4.5
30	10	18.5	65	93.8	5.5	5.5	7	30	10	18.5	65	93.8	5.5	5.5
31	11	21.25	66.3	93.8	8	8.5	9	31	11	21.25	66.3	93.8	8	8.5
32	8	16.75	75	110	7.75	8.5	10	32	8	16.75	75	110	7.75	8.5
33	5	11.5	92.5	133	7.75	8	12	33	5	11.5	92.5	133	7.75	8
34	4.75	10.5	105	143	8.25	8.5	15	34	4.75	10.5	105	143	8.25	8.5
35	4.25	9.5	113	148	7.75	8.5	14.5	35	4.25	9.5	113	148	7.75	8.5
36	5.25	11.75	90	140	7.25	7.75	12.25	36	5.25	11.75	90	140	7.25	7.75
37	6.25	12.75	62.5	113	6.75	7	12.5	37	6.25	12.75	62.5	113	6.75	7
38	6.5	10.5	58.8	97.5	7	8.75	14.25	38	6.5	10.5	58.8	97.5	7	8.75
39	7.5	11.25	53.8	90	7.5	9	14	39	7.5	11.25	53.8	90	7.5	9
40	9	14.25	55	87.5	8	8	10	40	9	14.25	55	87.5	8	8

Price data smoothened by 2-months moving average method for all 33 commodities.

**Table 5.2(ii-d): Low and High Prices of
Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)**

Sl No.	Cauli-flower		Beans		Radish		Mustard Leaves		Turnip		Rai Leaves		Squash	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
2	8	10	10	10	5.75	5	3	2	8	10	10	10	5.75	5
3	7.5	10	10	10	5	5.5	3	3	7.5	10	10	10	5	5.5
4	7.5	9	10	10	4.25	4.5	3	4	7.5	9	10	10	4.25	4.5
5	6	6	10	10	4	4	3	5	6	6	10	10	4	4
6	8	10	10	10	4	4	3	6	8	10	10	10	4	4
7	12	16	10	10	4	4	3	7	12	16	10	10	4	4
8	12	16	10	10	4	4	3	8	12	16	10	10	4	4
9	12	16	10	10	4	4	3	9	12	16	10	10	4	4
10	12	16	10	10	4	4	3	10	12	16	10	10	4	4
11	12	16	10	10	4	4	3	11	12	16	10	10	4	4
12	12	15	10	10	4	4	3	12	12	15	10	10	4	4
13	8.75	9.75	9.5	9.5	4	4	2.5	13	8.75	9.75	9.5	9.5	4	4
14	7.25	7.25	9	9.5	4	4	2	14	7.25	7.25	9	9.5	4	4
15	8	8	9.5	10	4	4	2	15	8	8	9.5	10	4	4
16	6.5	6.5	11	11	4	4	2	16	6.5	6.5	11	11	4	4
17	6	6	16	16	4	4	2.38	17	6	6	16	16	4	4
18	6	6	18.5	18.5	4	4	2.88	18	6	6	18.5	18.5	4	4
19	6	6	14	14	4	4	2.75	19	6	6	14	14	4	4
20	6	6	12	12	4	4	2.25	20	6	6	12	12	4	4
21	6	6	13	15.5	4	4	2.5	21	6	6	13	15.5	4	4
22	6	6	16.5	19.5	4	4	3.5	22	6	6	16.5	19.5	4	4
23	6	6	17.5	18	4	4	4.25	23	6	6	17.5	18	4	4
24	6	6	12.5	13	4	4	3.75	24	6	6	12.5	13	4	4
25	6	6	12.5	13	4	4	2.75	25	6	6	12.5	13	4	4
26	6	6	16	16.5	4	4	2.38	26	6	6	16	16.5	4	4
27	6.5	6.5	13.5	14	4	4	2.5	27	6.5	6.5	13.5	14	4	4

28	6.25	7.75	12	12	4	4	2.63	28	6.25	7.75	12	12	4	4
29	6.25	9.25	14	14	4	4	3.5	29	6.25	9.25	14	14	4	4
30	8	10	18	18	4	4	5.25	30	8	10	18	18	4	4
31	12.5	13	22	22	4	4	6	31	12.5	13	22	22	4	4
32	18	18	19	19.5	4	4	4.5	32	18	18	19	19.5	4	4
33	22	22	17	17.5	4	4	3.13	33	22	22	17	17.5	4	4
34	19	19	18	19	4	4	3.88	34	19	19	18	19	4	4
35	19.5	20.5	16.5	18	4	4	4	35	19.5	20.5	16.5	18	4	4
36	18.5	22	13	13.5	4	4	3.5	36	18.5	22	13	13.5	4	4
37	12	14.5	10.5	10.5	4	4	3.38	37	12	14.5	10.5	10.5	4	4
38	10.5	10.5	12	12	4.5	4.5	3	38	10.5	10.5	12	12	4.5	4.5
39	9.5	10.5	15	15	5	5	2.63	39	9.5	10.5	15	15	5	5
40	9	10	16	16	5	5	3.25	40	9	10	16	16	5	5

Price data smoothened by 2-months moving average method for all 33 commodities.

**Table 5.2(ii-e): Low and High Prices of
Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)**

Sl No.	Bhindi		Biri		Chillies		Charcoal		Kerosene	
	Low	High	Low	High	Low	High	Low	High	Low	High
2	7.5	8	3	3	18	18.5	5.25	7	4	10
3	5	6	3	3	13.5	16.5	5	7	4	10
4	5	6	3	3	12	15	5	7	4	10
5	5	6	3	3	14.3	16	5	7	4	10
6	5	6	3	3	17.8	19	5.5	7	4	10
7	7	9	3	3	18	19	5.5	7	4	10
8	8.5	10	3	3	18	19	5	7	4	10
9	8	8	3.13	3.13	20	20	5.25	7	4	10
10	8.5	9.5	3.38	3.38	17	17	5.75	7	4	10
11	10.5	11.5	3.5	3.5	13	15	6	7	4	10
12	12.5	13	3.5	3.5	12.5	16	6	7.25	4	10
13	12.5	13	3.5	3.5	16.5	18	6	7.38	4	10
14	12	12	3.5	3.5	19	20	6	7.13	4	10
15	12	12	3.5	3.5	19	20	5.75	7	4	10
16	12	12	3.5	3.5	19	19	5.25	6.5	4	9.5
17	11	12	3.5	3.5	16	17	5	6	4	9
18	7.25	8.25	3.5	3.5	14.5	17	5	6	4	9
19	4.75	5	3.5	3.5	16	18	5	6	4	9
20	6	6.5	3.5	3.5	21.5	24	5	6	4	9
21	8.5	8.75	3.5	3.63	23	25	5	6	4	9
22	10	10	3.5	3.88	16	16	5	6	4	9
23	10	10	3.63	4	14	16	5	6	4	9
24	10	10	3.88	4	18	22	5	6	4	9
25	10	10	4	4	24.5	29.5	5	6	4	9.5
26	10	10	4	4	24.5	27.5	5.5	6.5	4	10
27	10	10	4	4	20	20	6	7	4	10
28	10	10	4	4	20	20	6	7	4	10
29	10	10	4	4	20	20	6	7	4	10
30	10	10	4	4	20	21	6	7	4	10
31	10	10	4	4	20	21	6	7	4	10
32	10	10.5	4	4	20	21	5.5	7	4	10
33	9.5	10.5	4	4	22	26	5	7	4	10
34	9	9.5	4	4	26	29	5	7	4	10

35	9	9	4	4	24	29	5.25	7	4	10
36	11.8	11.75	4	4	23	35	5.75	7	4	10
37	13.3	13.25	4	4	26	33.5	6	7	4	10.5
38	11	11	4	4	23	26.5	6	7	4	11.5
39	10	10	4	4	18	23	6	7	4.25	12
40	10	10	4	4	16	20	6	7	4.5	12

Price data smoothened by 2-months moving average method for all 33 commodities.

**Table 5.2(ii-f): Low and High Prices of
Wage Goods in Shillong (beginning Month of Nov-Dec. 1996)**

Sl No.	Fresh Fish and Dry Fish (average) = Fish		Pork and Mutton (average) = Meat		Green Vegetables (average)		Qua = 0.3(Pan leaves) + 0.7(Betel Nut)		Fuel (0.4 Charcoal + 0.6 Kerosene)	
	Low	High	Low	High	Low	High	Low	High	Low	High
2	42.5	75	80	80	7.29	7.69	44.40	52.60	Low	High
3	45	80	80	80	6.79	7.4	44.40	52.60	4.5	8.8
4	45	80	80	80	6.33	6.85	48.05	58.08	4.4	8.8
5	45.4	78.75	80	80	5.96	6.27	43.71	56.33	4.4	8.8
6	49.8	81.25	80	80	6.12	6.48	37.55	51.08	4.4	8.8
7	49.4	85	80	80	6.92	7.56	34.74	51.15	4.6	8.8
8	45	85	80	80	7.48	8.25	29.58	60.83	4.6	8.8
9	44.1	90	80	80	7.81	8.5	32.70	68.21	4.4	8.8
10	47.9	91.25	80	80	7.96	8.83	38.03	65.01	4.5	8.8
11	51.3	83.75	80	80	7.92	8.63	38.03	62.20	4.7	8.8
12	50.6	85	80	80	8.25	8.87	39.78	65.40	4.8	8.8
13	50.6	91.25	80	80	7.69	8.19	42.66	72.70	4.8	8.9
14	50.6	91.25	80	80	6.63	6.84	38.55	66.15	4.8	8.95
15	50.6	84.75	80	80	7.42	7.71	37.18	59.68	4.8	8.85
16	49.8	84.75	80	80	8.29	8.49	41.20	63.70	4.7	8.8
17	49.8	89.38	80	80	8.14	8.32	44.46	67.58	4.5	8.3
18	50.6	95.63	80	80	7.74	8.03	43.55	65.90	4.4	7.8
19	49.4	103.8	80	80	7.08	7.49	39.76	68.35	4.4	7.8
20	48.8	100	80	80	7.38	7.77	39.01	67.60	4.4	7.8
21	51.3	95	80	80	7.92	8.36	39.30	65.16	4.4	7.8
22	50	92.5	81.25	81.3	8.27	8.65	43.56	77.05	4.4	7.8
23	48.8	90	88.75	88.8	8.77	9.02	47.61	86.85	4.4	7.8
24	51.3	92.5	95	95	8.73	9.19	42.51	83.50	4.4	7.8
25	51.3	92.5	95	95	9.79	10.43	39.93	71.10	4.4	7.8
26	49.4	92.5	95	95	10.3	11.08	44.34	61.66	4.4	8.1
27	50	95	91.25	93.8	8.48	9.42	45.33	65.46	4.6	8.6
28	55.4	92.5	86.25	91.3	7.03	7.99	44.56	71.55	4.8	8.8
29	58.5	91.25	85	90	6.88	7.75	45.93	74.20	4.8	8.8
30	58.5	93.75	85	90	8.06	8.85	48.50	71.21	4.8	8.8
31	62.3	98.75	85	88.8	9.77	10.37	49.71	72.04	4.8	8.8
32	66.9	107.5	85	86.3	10.06	10.75	54.90	82.03	4.8	8.8
33	69.4	115	85	85	10.07	10.74	66.25	96.55	4.6	8.8
34	76.3	118.8	85	85	10.28	10.84	74.93	103.25	4.4	8.8
35	80	117.5	85	85	10.04	10.77	80.38	106.45	4.4	8.8
36	71.9	116.3	85	85	9.5	10.58	64.58	101.53	4.5	8.8
37	65.6	116.3	85	85	8.89	10.04	45.63	82.93	4.7	8.8

38	63.1	112.5	85	85	8.98	9.69	43.11	71.40	4.8	9.1
39	58.1	103.8	85	85	9.11	9.79	39.91	66.38	4.8	9.7
40	53.8	101.3	85	85	8.63	10.02	41.20	65.53	4.95	10

Price data smoothened by 2-months moving average method for all 33 commodities.

5.3. Analysis of Components of Movement in Prices

For wage goods is a collective name of a basket of several goods purchased by the casual wage workers and over a period of time the prices of different constituent commodities of this basket vary differently, it would not be possible to gauge the nature and pattern of the overall movement in prices unless we use some artifact for this purpose. To analyze the movement in prices of wage goods we must therefore make some composite price indices by some sort of linear combination of the original prices. For this purpose, we take low as well as high prices of seventeen major representative commodities to analyze the components of movement in prices of wage goods in Shillong. Almost ninety percent of the daily consumption expenditure incurred by casual wageworker is spent on these commodities.

Table 5.3(i). Pattern Matrix: Components

Items (Low Prices)	Factors			Items (High Prices)	Factors		
	F1	F2	F3		F1	F2	F3
RICEL	.971			CIGARETH	1.026		
BIRIL	.940			SUGARH	.990		-.301
TEAL	.902			FISH_H	.913	-.323	
SUGARL	.892		-.458	BIRIH	.882		
FISH_L	.885	-.382		TEAH	.845		
VEGET_L	.772			RICEH	.821		

CIGARETL	.624	.345		VEGET_H	.781		
ATTAL	.567		.563	PORKH		.910	
FUEL_L	.519	-.487		POTATOH		.899	
PORKL		.999		ONIONH		.856	
POTATOL		.987		DALH		.831	.583
ONIONL		.903		MOILH	.301	.765	
MOILL		.774		MUTTN_H	.305	.739	
MUTTN_L		.747		BEEFH			-.945
BEEFL			-.913	FUEL_H		-.420	.675
DALL		.639	.710	ATTAH	.397		.613
PANL			.567	PANH			.350

Method: Principal Component Analysis with Promax rotation and Kaiser normalization.

Table 5.3(ii): Component Score Coefficient Matrix

Wage Goods	Low Prices			Wage Goods	High Prices		
	Factor1	Factor2	Factor3		Factor1	Factor2	Factor3
ATTA_L	.089	.016	.232	ATTA_H	.062	.060	.247
BEEF_L	-.014	.012	-.382	BEEF_H	.034	-.003	-.371
BIRI_L	.155	.007	.013	BIRI_H	.143	.032	-.004
CIGRET_L	.103	.068	.022	CIGRET_H	.169	-.030	-.049
DAL_L	-.024	.129	.300	DAL_H	-.043	.199	.254
FISH_L	.145	-.076	.093	FISH_H	.150	-.070	.076
FUEL_L	.086	-.097	.026	FUEL_H	.025	-.075	.255
MUTTN_L	.045	.149	.068	MUTTN_H	.045	.162	.040
MOIL_L	.034	.154	.035	MOIL_H	.045	.167	.028
ONION_L	.007	.179	-.060	ONION_H	.000	.181	-.073
PAN_L	-.042	-.056	.239	PAN_H	.002	.003	.138
PORK_L	-.025	.199	-.023	PORKH	-.004	.194	-.053
POTATO_L	-.026	.196	-.025	POTATO_H	-.034	.194	-.036
RICE_L	.160	-.023	.035	RICE_H	.133	.018	.086
SUGAR_L	.151	.032	-.199	SUGAR_H	.163	-.015	-.122
TEA_L	.151	.017	-.105	TEA_H	.138	.028	-.051
VEGET_L	.128	.026	-.012	VEGET_H	.127	.006	.056

Table 5.3(iii): Component Inter-Correlation Matrix

Components of Lower Prices				Components of Higher Prices			
Component	1	2	3	Component	1	2	3
1	1.000	.431	.278	1	1.000	.474	.271
2	.431	1.000	.109	2	.474	1.000	.103
3	.278	.109	1.000	3	.271	.103	1.000

Table 5.3(iv): Percentage Explanation of Variations in Prices by the Factors

Lower Prices				Higher Prices			
F	Lambda	% Variation explained	Cumul % var explained	F	Lambda	% Variation explained	Cumul % var explained
1	8.246	48.504	48.504	1	8.298	48.814	48.814
2	3.272	19.244	67.748	2	3.108	18.281	67.094
3	2.017	11.863	79.611	3	1.981	11.655	78.749

Table 5.3(v): Factor Scores of Prices of Wage Goods

Month	Factor I		Factor II		Factor III	
	Index_L1	Index_H1	Index_L2	Index_H2	Index_L32	Index_H3
2	-1.63368	-1.91104	-0.33258	-0.15118	1.02147	0.75056
3	-1.78153	-1.91059	-0.31244	-0.15254	1.15234	0.85162
4	-1.87461	-2.01359	-0.39172	-0.23442	1.24045	0.92515
5	-1.82217	-1.95528	-0.59673	-0.42568	1.0367	0.86677
6	-1.58235	-1.6041	-0.81034	-0.57587	0.76355	0.73549
7	-1.30159	-1.13766	-0.81471	-0.81068	0.04727	0.07558
8	-1.17905	-0.8985	-0.74115	-1.14617	-1.02639	-0.77539
9	-0.96562	-0.64343	-0.81809	-1.29479	-1.55718	-1.07468
10	-0.67881	-0.4682	-0.9391	-1.22087	-1.54984	-1.07433
11	-0.50552	-0.57308	-0.96658	-1.16909	-1.50702	-1.18082
12	-0.36899	-0.49263	-0.92107	-1.19362	-1.5276	-1.19416
13	-0.42245	-0.44619	-0.87418	-1.16301	-1.45398	-1.11496
14	-0.57646	-0.64936	-0.753	-0.94021	-1.25666	-1.05218
15	-0.37853	-0.56832	-0.56704	-0.55768	-0.92915	-0.58009
16	-0.13022	-0.3418	-0.3296	-0.29367	-0.55927	-0.44447
17	-0.17619	-0.32154	-0.2751	-0.3515	-0.28237	-0.74267
18	-0.26446	-0.20028	-0.33963	-0.39311	-0.33246	-0.97844
19	-0.43997	-0.13845	-0.23647	-0.37738	-0.92681	-1.20086
20	-0.3835	-0.17246	-0.04865	-0.31574	-1.26173	-1.21689
21	-0.10297	-0.01784	0.25828	-0.0145	-1.05195	-1.136
22	0.075	0.15736	0.65419	0.36285	-1.06361	-1.10889
23	0.35266	0.39353	1.77956	1.39996	-0.89696	-1.02666
24	0.60176	0.63147	2.85963	2.50455	-0.58907	-0.90728
25	0.69754	0.73439	3.00063	2.75912	0.0725	-0.49149
26	0.81723	0.83957	2.61089	2.48735	0.65608	0.03442
27	0.81453	0.80356	1.33754	1.62249	0.47384	0.05202
28	0.6455	0.68371	0.1356	0.77834	0.46494	-0.01321
29	0.60323	0.694	-0.21627	0.54177	0.72158	0.17452
30	0.65914	0.77	-0.3233	0.49125	1.00545	0.42796
31	0.82441	0.91631	-0.37239	0.28903	1.2013	0.57162
32	0.98208	0.98007	-0.26209	-0.02307	0.88344	0.75742
33	1.10667	1.0714	-0.08088	-0.19602	0.5012	0.98252
34	1.34103	1.17077	-0.03665	-0.18273	0.7521	1.165
35	1.46098	1.09875	0.02363	-0.02661	0.94309	1.26248
36	1.41751	1.15321	0.14131	0.21032	0.93148	1.37141
37	1.27387	1.22065	0.12159	0.22516	1.04455	1.5515
38	1.14142	1.18173	0.02625	0.00464	0.91259	1.56928
39	0.992	1.03898	-0.18309	-0.18399	0.86837	1.54487
40	0.76211	0.92489	-0.40624	-0.28269	1.07777	1.64322

Construction and Identification of Factor Indices of Prices of Wage

Goods: We apply Factor Analysis to analyze the components of movement in prices of the goods referred to above and extract three factors. Among the three factors derived, the first factor most closely relates to trends in the movements of prices. The second factor is likely to measure a cycle. It has been observed since the olden days that during summer prices are lower (while the cost of living of labourers is lower) and during the winters the prices are higher. However, the abnormal and sudden rise in the index during July-September 1998 attaining the peak in the winters of 1998-99 followed by an equally violent nose dive afterwards reminds us of the months during which the prices of several wage goods (onion, potato, mustard oil, etc.) skyrocketed to instill shocks of terror among the minds to the people in general and the labourers in particular. The third factor closely resembles three-year cycles, the shortest among the cycles that are common in agricultural products. It is to be noted that most of the wage goods are of an agricultural origin.

Trends in Wage Goods Prices : To simplify the trend component in the wage goods prices we apply regression analysis on Factor-I (Score vector) as a dependent variable and time (measured in months, starting with Nov.-Dec. 1996 =1) as the explanatory variable. The estimated parameters/statistics

regarding the same are presented in table 5.3(vi-a). The exercise is carried out for low as well as high prices. For both the prices (low and high) the model fits very well.

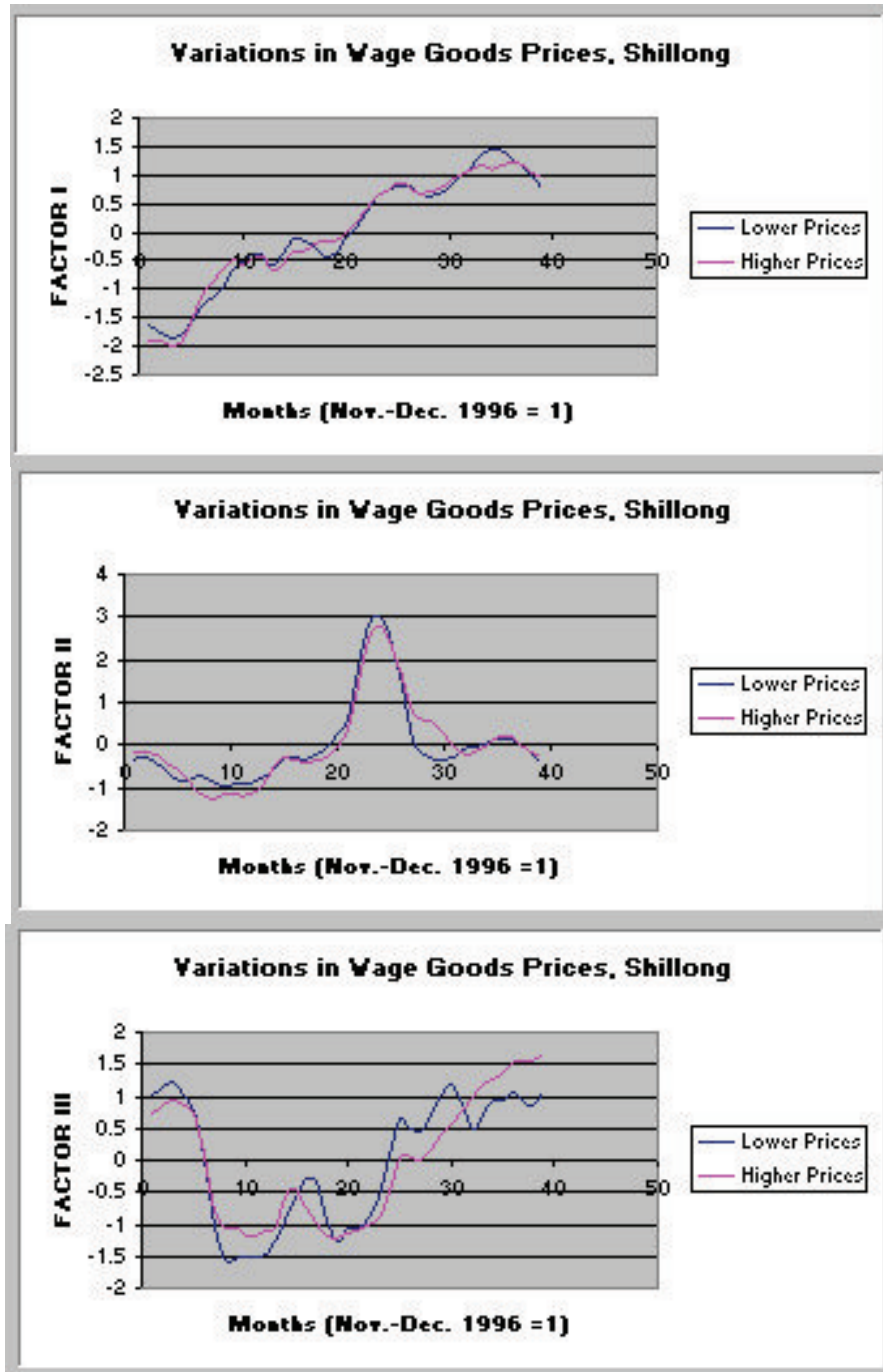


Table 5.3(vi-a): Linear Regression Analysis of Factors of Prices of Wage Goods

Factor-I (Low)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.918$	(Constant)	-1.681	.095		-17.761	.000
$F = 415.36$	MONTH	0.08404	.004	.958	20.380	.000

Factor-I (High)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.918$	(Constant)	-1.681	.095		-17.751	.000
$F = 414.90$	MONTH	0.08404	.004	.958	20.369	.000

We have also regressed Factor-I (Score vector) on time (month) and lagged value of Factor-I, with a time lag of one month. The estimated parameters/statistics regarding the same are presented in table 5.3(vi-b). The exercise is carried out for low as well as high prices. We observe that when the lagged endogenous variable (f_{1t-1}) is used as an explanatory variable to explain variations in the current endogenous variable (f_{1t}), the time variable (month = m_t) loses statistical significance. Therefore, this alternative model, although quite powerful for predictive purposes, would not describe trends in the prices of wage goods in the period under study.

Table 5.3(vi-b): Lagged Regression Analysis of Factors of Prices of Wage Goods

Factor-I (Low)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.975$	(Constant)	0.03033	.195		.156	.877
$F = 711.72$	Factor-I(L) _{t-1}	0.955	.105	.974	9.131	.000
	MONTH	0.001252	.009	.014	.134	.894

Factor1(L)_{t-1} = Factor-I Score (L) of one MONTH prior to Factor-I Score1 (L)_t

Factor-I (High)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.982$	(Constant)	0.07123	.160		.444	.660
$F = 992.55$	Factor-I(H) _{t-1}	0.960	.084	.992	11.379	.000
	MONTH	-8.347E-05	.008	-.001	-.011	.991

Factor1(H)_{t-1} = Factor-I Score (H) of one MONTH prior to Factor-I Score (H)_t

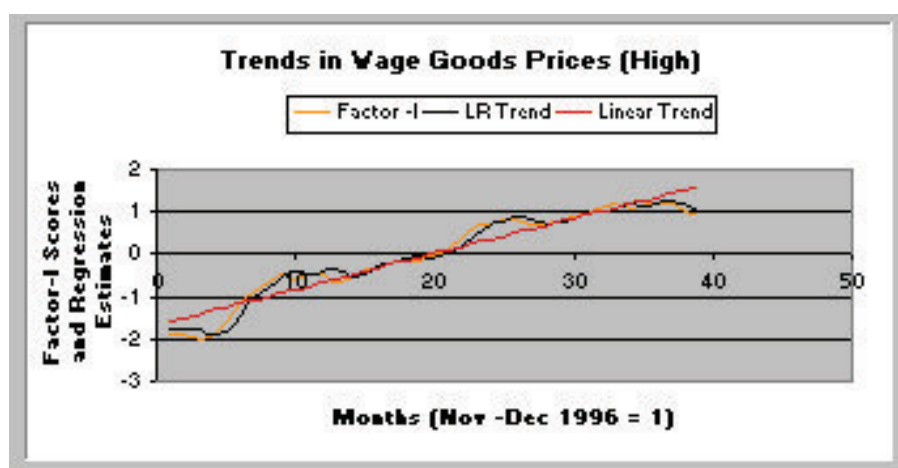
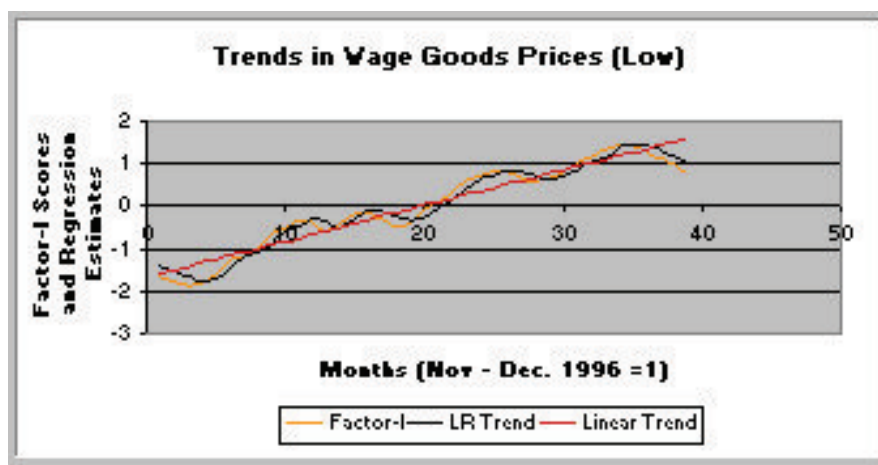


Table 5.3(vii): Factor-I -Trends in Wage Goods Prices

Month	Factor-I (Low Prices)			Factor-I (High Prices)		
	Factor1(L)	L-R Trends	Lin Trends	Factor1 (H)	L-R Trends	Lin Trends
2	-1.6337	-1.40035	-1.59681	-1.911	-1.75339	-1.59673
3	-1.7815	-1.52671	-1.51276	-1.9106	-1.76407	-1.51269
4	-1.8746	-1.66659	-1.42872	-2.0136	-1.76372	-1.42866
5	-1.8222	-1.7542	-1.34468	-1.9553	-1.86271	-1.34462
6	-1.5824	-1.70289	-1.26064	-1.6041	-1.8068	-1.26058
7	-1.3016	-1.4727	-1.17659	-1.1377	-1.46966	-1.17654
8	-1.1791	-1.20343	-1.09255	-0.8985	-1.02183	-1.0925
9	-0.9656	-1.0852	-1.00851	-0.6434	-0.79225	-1.00846
10	-0.6788	-0.8802	-0.92447	-0.4682	-0.5474	-0.92442
11	-0.5055	-0.60515	-0.84042	-0.5731	-0.37921	-0.84039
12	-0.369	-0.43848	-0.75638	-0.4926	-0.48001	-0.75635
13	-0.4225	-0.30689	-0.67234	-0.4462	-0.40284	-0.67231
14	-0.5765	-0.35667	-0.5883	-0.6494	-0.35833	-0.58827
15	-0.3785	-0.50244	-0.50425	-0.5683	-0.55351	-0.50423
16	-0.1302	-0.31224	-0.42021	-0.3418	-0.47577	-0.42019
17	-0.1762	-0.07395	-0.33617	-0.3215	-0.25833	-0.33615

18	-0.2645	-0.11658	-0.25213	-0.2003	-0.23896	-0.25212
19	-0.44	-0.19959	-0.16808	-0.1385	-0.1226	-0.16808
20	-0.3835	-0.36588	-0.08404	-0.1725	-0.06331	-0.08404
21	-0.103	-0.31072	0	-0.0178	-0.09605	0
22	0.075	-0.04167	0.08404	0.1574	0.05234	0.08404
23	0.3527	0.12947	0.16808	0.3935	0.2205	0.16808
24	0.6018	0.39578	0.25213	0.6315	0.4472	0.25212
25	0.6975	0.63483	0.33617	0.7344	0.67561	0.33615
26	0.8172	0.72751	0.42021	0.8396	0.77436	0.42019
27	0.8145	0.84302	0.50425	0.8036	0.87528	0.50423
28	0.6455	0.8417	0.5883	0.6837	0.84061	0.58827
29	0.6032	0.68159	0.67234	0.694	0.72544	0.67231
30	0.6591	0.64249	0.75638	0.77	0.73524	0.75635
31	0.8244	0.69712	0.84042	0.9163	0.80814	0.84039
32	0.9821	0.85614	0.92447	0.9801	0.94855	0.92442
33	1.1067	1.00791	1.00851	1.0714	1.00969	1.00846
34	1.341	1.12809	1.09255	1.1708	1.09731	1.0925
35	1.461	1.35307	1.17659	1.0987	1.19265	1.17654
36	1.4175	1.46883	1.26064	1.1532	1.12341	1.26058
37	1.2739	1.42858	1.34468	1.2207	1.17562	1.34462
38	1.1414	1.29271	1.42872	1.1817	1.2403	1.42866
39	0.992	1.16753	1.51276	1.039	1.20284	1.51269
40	0.7621	1.02614	1.59681	0.9249	1.06568	1.59673

Cyclical Variations in Wage Goods Prices : We have seen that Factor-II captures some sort of cyclical variations in the wage goods prices. To explain variations in Factor-II, we use two explanatory variables, Sin(month) and Cos(month) since we visualize that the cycle may well be captured by the two sinusoidal transforms of linear time variable (month). We have postulated a 36-month cycle. The estimated coefficients of the model are presented in table 5.3(viii-a). In case of low prices Sin(month) and Cos(month) are retained as explanatory variables, while in case of high prices, only Sin(month) could be retained. In case of low as well as high prices we observe an abnormal spurt in prices with duration of some 5 to 6

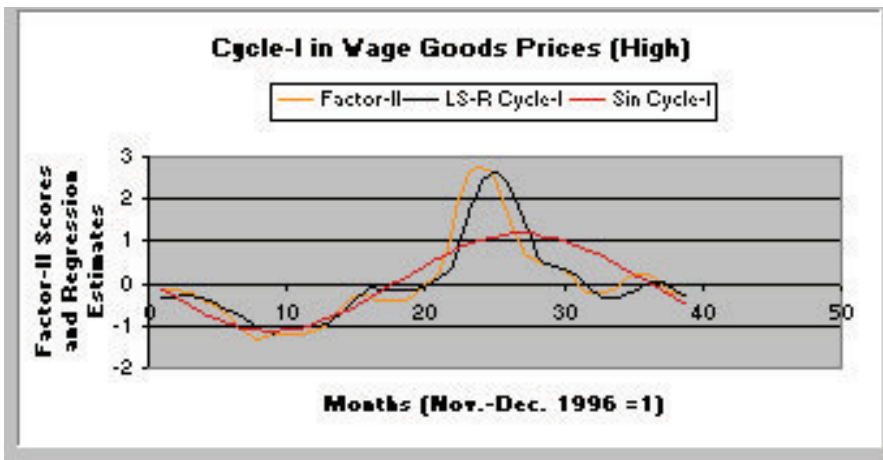
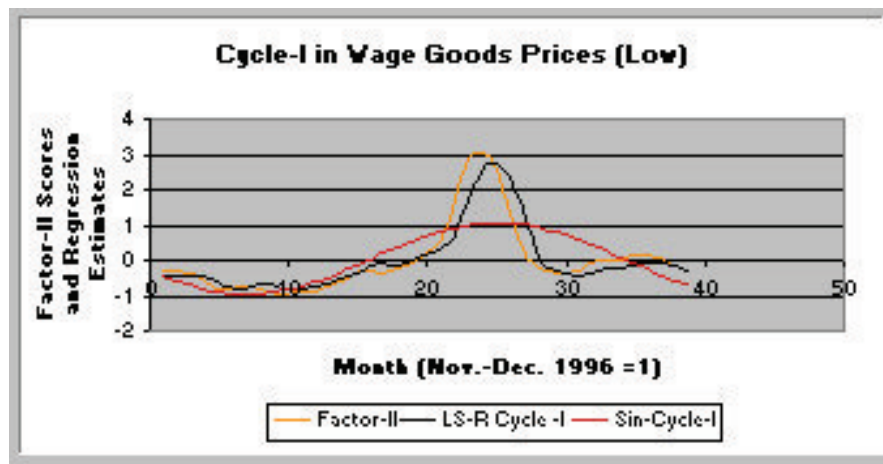
months and a peak around month = 23 or 24 (that is, Aug-Sept. 1998). The fitted cycle, though mildly pulled up by the said hump, retains its smoothness appreciably.

Table 5.3(viii-a): Regression Analysis of Factors of Prices of Wage Goods

Factor-II (Low)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.505$	(Constant)	0.04718	.116		.405	.688
$F = 18.36$	SIN3	-0.953	.169	-.663	-5.645	.000
	COS3	-0.312	.160	-.229	-1.950	.059

SIN3 and COS3 mean sine and cosine of a month while a 36-month's cycle is postulated.

Factor-II (High)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.642$	(Constant)	3.000E-02	.097		.309	.759
$F = 66.25$	SIN3	-1.152	.142	-.801	-8.139	.000



We have also regressed Factor-II (Score Vector) on the sinusoidal transforms of linear time (Sine and Cosine of Month) and the lagged value of the endogenous variable (Factor-II(L)_{t-1}). The estimated model drops the sin(month) variable. This is true with low as well as high price. The estimated coefficients are presented in table 5.3(viii-b). The retained variables have significant power to explain variations in Factor-II.

Table 5.3(viii-b): Regression Analysis of Factors of Prices of Wage Goods

Factor-II (Low)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.852	(Constant)	1.085E-02	.064		.171	.865
F = 103.77	Factor-II(L) _{t-1}	0.896	.065	.896	13.832	.000
	COS3	-0.176	.088	-.129	-1.992	.054

Factor-II(L)_{t-1} = Factor-II Score (L) of one year prior to Factor-II Score (L)_t

Factor-II (High)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.889	(Constant)	0.01011	.055		.184	.855
F = 144.84	Factor2(H) _{t-1}	0.934	.055	.933	16.846	.000
	COS3	-0.186	.076	-.136	-2.455	.019

Factor-II(H)_{t-1} = Factor-II Score (H) of one year prior to Factor-II Score (H)_t

Table 5.3(ix): Factor-II : Cycle-I (Low Amplitude) in Wage Goods Prices

Month	Factor-II (Low Prices)			Factor-II (High Prices)		
	Factor2(L)	LS-R Cycle	Sin Cycle	Factor2 (H)	LS-R Cycle	Sin Cycle
	-----	-----	-----	-----	-----	-----
2	-0.3326	-0.45834	-0.42603	-0.1512	-0.31288	-0.17005
3	-0.3124	-0.45271	-0.5724	-0.1525	-0.3056	-0.36402
4	-0.3917	-0.42168	-0.69995	-0.2344	-0.29319	-0.54603
5	-0.5967	-0.47514	-0.8048	-0.4257	-0.35112	-0.71053
6	-0.8103	-0.6372	-0.88376	-0.5759	-0.50691	-0.85253
7	-0.8147	-0.80352	-0.93443	-0.8107	-0.6207	-0.96771
8	-0.7412	-0.77962	-0.95528	-1.1462	-0.81072	-1.05258
9	-0.8181	-0.68404	-0.94567	-1.2948	-1.09286	-1.10455
10	-0.9391	-0.72243	-0.90589	-1.2209	-1.19946	-1.12206
11	-0.9666	-0.80032	-0.83716	-1.1691	-1.09816	-1.10455
12	-0.9211	-0.79531	-0.74155	-1.1936	-1.01852	-1.05258
13	-0.8742	-0.7267	-0.62198	-1.163	-1.01211	-0.96771
14	-0.753	-0.65953	-0.48208	-0.9402	-0.957	-0.85253
15	-0.567	-0.52921	-0.32609	-0.5577	-0.72598	-0.71053
16	-0.3296	-0.34493	-0.15876	-0.2937	-0.35006	-0.54603

17	-0.2751	-0.11913	0.01482	-0.3515	-0.08975	-0.36402
18	-0.3396	-0.06234	0.18939	-0.3931	-0.1354	-0.17005
19	-0.2365	-0.1175	0.35963	-0.3774	-0.17145	0.03
20	-0.0487	-0.02771	0.52039	-0.3157	-0.15958	0.23006
21	0.2583	0.13269	0.66676	-0.0145	-0.11037	0.42403
22	0.6542	0.39483	0.79431	0.3629	0.15736	0.60604
23	1.7796	0.73209	0.89915	1.4	0.49131	0.77053
24	2.8596	1.7191	0.97812	2.5046	1.43727	0.91253
25	3.0006	2.66206	1.02879	2.7591	2.44264	1.02772
26	2.6109	2.76062	1.04964	2.4874	2.65112	1.11259
27	1.3375	2.38164	1.04003	1.6225	2.36598	1.16456
28	0.1356	1.20972	1.00025	0.7783	1.5258	1.18206
29	-0.2163	0.10181	0.93151	0.5418	0.70497	1.16456
30	-0.3233	-0.24322	0.83591	0.4913	0.45271	1.11259
31	-0.3724	-0.36697	0.71633	0.289	0.37618	1.02772
32	-0.2621	-0.43611	0.57643	-0.0231	0.16076	0.91253
33	-0.0809	-0.35895	0.42045	-0.196	-0.15368	0.77053
34	-0.0367	-0.21413	0.25312	-0.1827	-0.33381	0.60603
35	0.0236	-0.18746	0.07953	-0.0266	-0.33508	0.42403
36	0.1413	-0.14137	-0.09503	0.2103	-0.19761	0.23005
37	0.1216	-0.03856	-0.26528	0.2252	0.02091	0.03
38	0.0263	-0.05356	-0.42603	0.0046	0.03759	-0.17005
39	-0.1831	-0.13108	-0.5724	-0.184	-0.16004	-0.36403
40	-0.4062	-0.30574	-0.69995	-0.2827	-0.32257	-0.54603

Captured by Factor-III, another cycle is discernible in the time series of the wage goods prices in our study. Therefore, we regress Factor-III on the sinusoidal transforms of the linear time variable (sine and cosine of months). Factor-III retains both the transforms as its explanatory variables. The estimated coefficients are presented in table 5.3(x-a).

Table 5.3(x-a): Regression Analysis of Factors of Prices of Wage Goods

Factor-III (Low)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.760	(Constant)	-0.05876	.081		-.724	.473
F = 56.86	SIN3	-0.635	.118	-.442	-5.398	.000
	COS3	1.052	.112	.771	9.426	.000
Factor-III (High)		Coefficient	Std. Err	Beta	t value	Sig.
R ² = 0.834	(Constant)	-0.07895	.067		-1.171	.249
F = 90.39	SIN3	-0.324	.098	-.225	-3.315	.002
	COS3	1.221	.093	.895	13.163	.000

Introduction of lagged exogenous variable (Factor-III_{t-1}) is at the cost of dropping cos(month). This is observed for Factor-iii(L) as well as Factor-III(H). The estimated coefficients are presented in table 5.3(x-b).

Table 5.3(x-b): Regression Analysis of Factors of Prices of Wage Goods

Factor-III (Low)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.906$	(Constant)	7.516E-03	.050		.149	.882
$F = 173.62$	Factor-III(L) _{t-1}	0.899	.053	.897	16.839	.000
	SIN3	-0.220	.077	-.153	-2.868	.007

Factor3(L)_{t-1} = Factor3 Score (L) of one year prior to Factor3 Score (L)_t

Factor-III (High)		Coefficient	Std. Err	Beta	t value	Sig.
$R^2 = 0.951$	(Constant)	0.03009	.036		.824	.415
$F = 348.56$	Factor-III(H) _{t-1}	0.989	.038	.959	25.919	.000
	SIN3	-0.188	.053	-.131	-3.532	.001

Factor-III(H)_{t-1} = Factor-III Score (H) of one year prior to Factor-III Score (H)_t

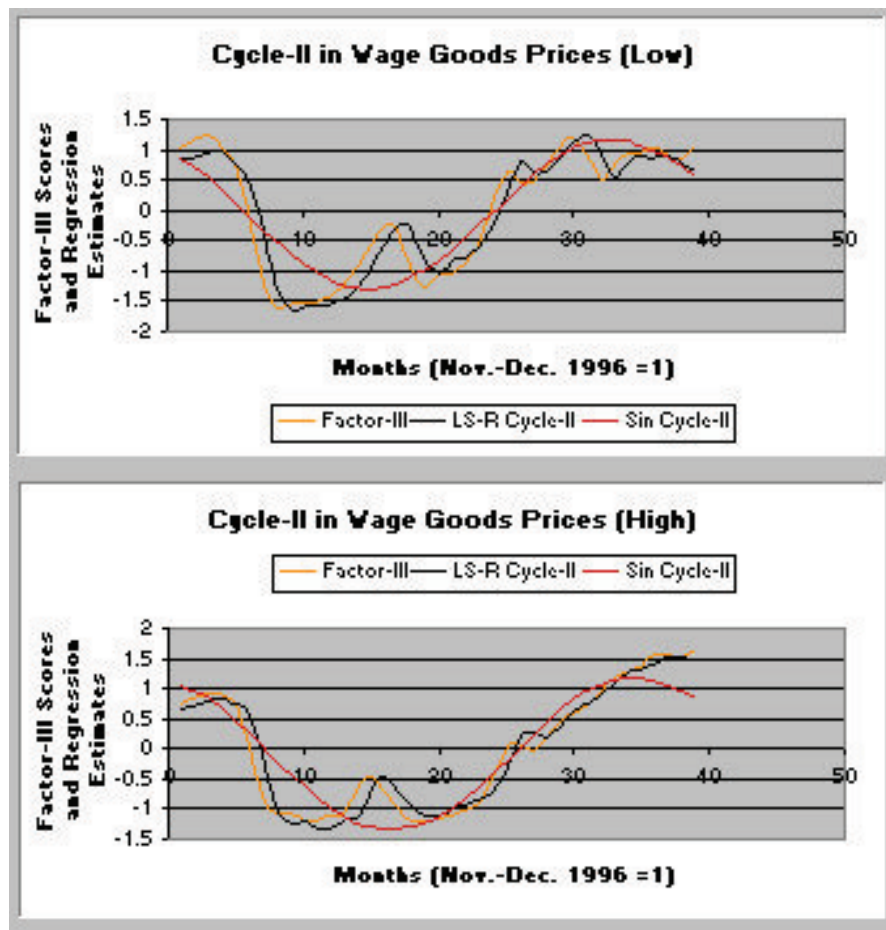


Table 5.3(xi): Factor-III : Cycle-II (High Amplitude) in Wage Goods Prices						
	Factor-III (Low Prices)			Factor-III (High Prices)		
Month	Factor-III(L)	LS-R Cycle	Sin Cycle	Factor-III (H)	LS-R Cycle	Sin Cycle
	----- -	----- --	----- -----	----- --	----- --	----- -----
2	1.0215	0.86841	0.86729	0.7506	0.64049	1.06754
3	1.1523	0.85071	0.71288	0.8516	0.70834	0.95787
4	1.2405	0.93366	0.53503	0.9252	0.77863	0.81669
5	1.0367	0.9815	0.33914	0.8668	0.82454	0.6483
6	0.7635	0.77123	0.13115	0.7355	0.74362	0.45781
7	0.0473	0.50369	-0.0826	0.0756	0.59496	0.25101
8	-1.0264	-0.15647	-0.29563	-0.7754	-0.07172	0.03419
9	-1.5572	-1.13166	-0.50146	-1.0747	-0.92205	-0.18607
10	-1.5498	-1.61221	-0.69384	-1.0743	-1.22099	-0.40308
11	-1.507	-1.60227	-0.86693	-1.1808	-1.21779	-0.61024
12	-1.5276	-1.55386	-1.01545	-1.1942	-1.31466	-0.80125
13	-1.454	-1.55618	-1.13491	-1.115	-1.31402	-0.97032
14	-1.2567	-1.46802	-1.22167	-1.0522	-1.21688	-1.1123
15	-0.9292	-1.26353	-1.2731	-0.5801	-1.13161	-1.22289
16	-0.5593	-0.93771	-1.28763	-0.4445	-0.63774	-1.29872
17	-0.2824	-0.57045	-1.26482	-0.7427	-0.47389	-1.33748
18	-0.3325	-0.28451	-1.20536	-0.9784	-0.73726	-1.33801
19	-0.9268	-0.29138	-1.11107	-1.2009	-0.93787	-1.30028
20	-1.2617	-0.78758	-0.9848	-1.2169	-1.12528	-1.22544
21	-1.052	-1.05169	-0.83039	-1.136	-1.10949	-1.11576
22	-1.0636	-0.82837	-0.65254	-1.1089	-0.99978	-0.97459
23	-0.897	-0.80748	-0.45665	-1.0267	-0.94613	-0.80619
24	-0.5891	-0.63057	-0.24866	-0.9073	-0.84162	-0.61571
25	0.0725	-0.33179	-0.03491	-0.4915	-0.70473	-0.40891
26	0.6561	0.27918	0.17812	0.0344	-0.27956	-0.19208
27	0.4738	0.81377	0.38395	0.052	0.2492	0.02818
28	0.4649	0.65326	0.57633	-0.0132	0.26946	0.24518
29	0.7216	0.64192	0.74942	0.1745	0.20208	0.45234
30	1.0055	0.86274	0.89794	0.428	0.37932	0.64335
31	1.2013	1.10177	1.0174	0.5716	0.6162	0.81242
32	0.8834	1.25588	1.10416	0.7574	0.73953	0.9544
33	0.5012	0.94302	1.15559	0.9825	0.90018	1.06499
34	0.7521	0.56799	1.17012	1.165	1.09604	1.14082
35	0.9431	0.75885	1.14731	1.2625	1.24688	1.17958
36	0.9315	0.89356	1.08785	1.3714	1.31167	1.18011
37	1.0446	0.84496	0.99356	1.5515	1.38681	1.14238
38	0.9126	0.90846	0.86729	1.5693	1.53234	1.06754
39	0.8684	0.75283	0.71288	1.5449	1.51829	0.95786
40	1.0778	0.67835	0.53503	1.6432	1.46445	0.81669

5.4. Trends in Cost of Living of Casual Wage Workers in Shillong

The cost of living index is a measure of the changes in the cost of living of people who fall within the same income range over a different period of time. To construct the Cost of Living Index (for a specified class or group of people), we select a group of commodities and weight them according to which the members of the group as a whole make use of them. A base year is chosen and assigned the index number 100. A rise in prices of 2% gives a new index number of 102, just as a fall in prices will give an index number of 98.

There are various factors which influence the cost of living (or the cost of labour re-generation). In our context a mention of a few ones is pertinent. Generally, those who live in urban areas or in the cities have a higher cost of living than those who live in the rural areas, because in cities nothing is obtained without paying. But in rural areas, people can get much free of cost like - water, firewood etc. Next, the distance of the working place from the residence has a direct bearing upon the budget expenditure of a family. If a person has to travel daily for two to three hours and spend 20 percent or so of his total income on traveling alone, his cost of living would be higher.

Shillong is a hill station having a cold climate. People who live in the plains/near the riverbanks have relatively lower cost of living. As the soil is fertile and the water is in plenty, cultivation as well as rearing of animals is easier and more remunerative. The cost of transportation also is low, because different modes of transportation (railway, waterway, roads, cycle, rickshaws, etc.) are viable and easily available. On the other hand, those living in the hills face problems such as lack of transport and communication, water scarcity for drinking as well as irrigation, steep and rugged terrain, less fertile and erosion-prone soil, and so on which make cultivation difficult. Many articles of consumption that make up the 'wage goods' are to be brought in (imported) from far off lands and therefore they sell quite costly. This cost enters into the costs of everything else and ultimately, the cost of living goes higher. Prices of the most wage goods in Shillong are higher than in the plains. A few articles (rice, atta, Dal, etc.) in Shillong may cost 15 to 20 percent higher than in the plains, but a few other articles like green vegetables may cost three to five times or even more. That makes a high cost of living in Shillong.

The next important factor to influence cost of living is the institutional factor. In certain communities/tribes, there are peculiar customs, which make the part and parcel of culture (e.g. death ceremony among the Khasis).

These customs are costly to perform. Nevertheless, they are necessary and raise the cost of living. Some socially necessary practices (offering kwai among the Khasis) are expensive but so included in the life style that they are necessary.

In interpreting a 'cost of living index' one must remember that the so-called 'cost of living index' is not a cost of living index as such because it *does not indicate how much must actually be spent by families to maintain a specified level of living*. It is just an index of prices paid by consumers. *The index measures only changes in prices, it tells nothing about changes in the kinds and amounts of goods and services families buy; the total amount families spent for living or the difference in living cost in different places*. The true index of the cost of living is the ratio of the monetary expenditures of an individual which buys for him the same 'standard of living' or 'total utility' in two situations differing only in respect of prices. The term 'cost of living index' is also known as 'consumer price index', 'price of living index', or 'retail price index' in different countries with virtually no difference in their meaning.

Cost of Living Index for Casual Workers in Shillong: We make an attempt to construct the Cost of Living Indices for the Casual Wage workers in Shillong. For this purpose we have used the following commodities in the

consumption basket of casual wage workers: Rice, Dal, Sugar, Tea, Potatoes, Onion, Mustard, Atta, Fish (composite – dry & fresh), Beef, Meat (composite – pork & mutton), Green vegetables (composite – several in number), Pan, Betel nut, Cigarettes and Fuel (composite – charcoal and kerosene oil). These commodities account for some 85 to 90 percent of the total (daily) consumption expenditure of a typical casual wageworker in Shillong.

For constructing a Cost of Living Index, there are a number of methods available, each with its own merits and demerits. Laspeyres formula, Paasche's formula, Fisher's ideal index formula, etc. are a few to name. T L Kelly proposed to construct Cost of Living Index by the formula

$$I_{ot} = \frac{\sum_{i=1}^m QP_t}{\sum_{i=1}^m QP_0}, \text{ where } I_{ot} = \text{Cost of Living Index for the time point } t \text{ with base}$$

time point 0, P_0 = prices at the base time point and P_t = prices at the t time point for individual commodities i ($=1,2,\dots, m$). This method, unlike Laspeyres method that uses Q_0 corresponding to P_0 or Paasche's method that uses Q_t corresponding to P_t , makes use of Q which may correspond to any year or average over several years, but remains fixed (**D N Elhance et al.**, 1997, pp. 13.22 – 13.23). We have used Q as an average over Dec. 1996-Feb. 2000 with corresponding prices and observations so that we obtain

stable weights and what matters in determining the Cost of Living Index are not the structural changes in expenditure pattern but the changes in the prices alone. The base point prices (P_{L0} and P_{H0}) are averages of the price quotations for Nov. 1996 to March 1997. It is expected that these base point prices would serve as a good reference prices. The parameters (like P_{L0} , P_{H0} , Q_L and Q_H) are presented in tables 5.4(i) and 5.4(ii). Cost of Living indices for Low and High prices (I_L and I_H) are presented in table 5.4(iii). Mean price Cost of living index (I_M) is constructed by averaging low price and high price indices and presented in table 5.4(iii).

Table 5.4(i): The Parameters of Cost of Living Indices (Low Prices)

Wage Goods	Total* Expenditure	Percent of Expenditure	Base Year Price (P_{L0})	Quantity (Q_L)	Total* Expenditure (QP_{L0})
Rice	63526.00	25.92	8.94	7105.82	63526.00
Dal	5014.00	2.05	25.43	197.21	5014.00
Sugar	8266.00	3.37	15.18	544.71	8266.00
Tea	5239.00	2.14	60.75	86.24	5239.00
Potato	9777.00	3.99	6.63	1475.77	9777.00
Onion	2830.00	1.15	8.63	328.12	2830.00
Mustard	10694.00	4.36	36.00	297.06	10694.00
Atta	3134.00	1.28	9.00	348.22	3134.00
Fish	9046.00	3.69	44.48	203.40	9046.00
Beef	23735.00	9.68	50.00	474.70	23735.00
Meat	9940.00	4.06	80.00	124.25	9940.00
GreenVeg	10074.00	4.11	6.59	1528.10	10074.00
Pan Leaf	4650.00	1.90	8.25	563.64	4650.00
Betel Nut	10847.00	4.43	60.95	177.97	10847.00
Cigarettes	5226.00	2.13	7.06	739.96	5226.00
Fuel	21231.00	8.66	4.43	4797.97	21231.00
Total	203229.00	82.92	-----	-----	203229.00

Table 5.4(ii): The Parameters of Cost of Living Indices (High Prices)

Wage Goods	Total Expenditure	Percent of Expenditure	Base Year Price (P_{H0})	Quantity (Q_H)	Total Expenditure (QP_{H0})
Rice	63526.00	25.92	9.88	6431.38	63526.00
Dal	5014.00	2.05	25.60	195.86	5014.00
Sugar	8266.00	3.37	15.33	539.38	8266.00
Tea	5239.00	2.14	85.00	61.64	5239.00
Potato	9777.00	3.99	7.88	1241.52	9777.00
Onion	2830.00	1.15	9.25	305.95	2830.00
Mustard	10694.00	4.36	37.63	284.23	10694.00
Atta	3134.00	1.28	9.06	345.82	3134.00
Fish	9046.00	3.69	78.44	115.33	9046.00
Beef	23735.00	9.68	50.00	474.70	23735.00
Meat	9940.00	4.06	80.00	124.25	9940.00
GreenVeg	10074.00	4.11	7.05	1428.43	10074.00
Pan Leaf	4650.00	1.90	12.38	375.76	4650.00
Betel Nut	10847.00	4.43	73.13	148.34	10847.00
Cigarettes	5226.00	2.13	7.25	720.83	5226.00
Fuel	21231.00	8.66	8.80	2412.61	21231.00
Total	203229.00	82.92	-----	-----	203229.00

Table 5.4(iii): Lower, Higher and Average Cost of Living Indices in Shillong

Nov. 1996 – March 1997 = 100	$\sum_{i=1}^{16} Q_{Li} P_{Lit}$	$\sum_{i=1}^{16} Q_{Hi} P_{Hit}$	$\sum_{i=1}^{16} Q_{Mi} P_{Mit}$	Cost of Living Indices		
				I_L	I_H	I_M
Nov.1996=1	Per Hhold	Per Hhold	Per Hhold	-----	-----	-----
2	1616.07	1599.55	1607.81	100.99	99.96	100.48
3	1611.04	1615.03	1613.04	100.68	100.93	100.81
4	1600.48	1603.53	1602.01	100.02	100.21	100.12
5	1573.33	1582.80	1578.07	98.32	98.91	98.62
6	1561.29	1609.04	1585.17	97.57	100.55	99.06
7	1593.77	1648.39	1621.08	99.60	103.01	101.31
8	1598.65	1678.53	1638.59	99.90	104.89	102.40
9	1620.09	1717.28	1668.69	101.24	107.31	104.28
10	1664.83	1722.30	1693.57	104.04	107.63	105.84
11	1677.69	1694.71	1686.20	104.84	105.90	105.37
12	1694.10	1704.17	1699.14	105.87	106.50	106.19
13	1696.30	1738.43	1717.37	106.00	108.64	107.32
14	1696.11	1724.34	1710.23	105.99	107.76	106.88
15	1722.39	1734.45	1728.42	107.63	108.39	108.01
16	1752.32	1759.00	1755.66	109.50	109.92	109.71
17	1760.46	1754.30	1757.38	110.01	109.63	109.82
18	1761.14	1773.19	1767.17	110.06	110.81	110.44

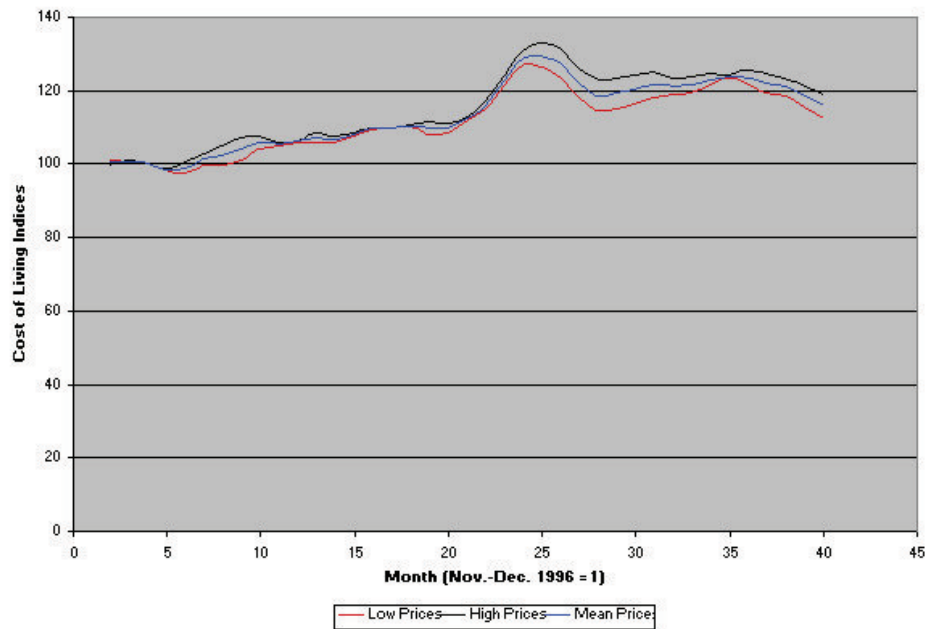
19	1732.63	1785.74	1759.19	108.27	111.59	109.93
20	1736.16	1777.71	1756.94	108.49	111.09	109.79
21	1789.10	1809.24	1799.17	111.80	113.06	112.43
22	1841.21	1873.78	1857.50	115.06	117.09	116.08
23	1944.39	1986.64	1965.52	121.51	124.15	122.83
24	2028.07	2093.17	2060.62	126.74	130.80	128.77
25	2020.72	2126.05	2073.39	126.28	132.86	129.57
26	1975.16	2097.88	2036.52	123.43	131.10	127.27
27	1890.38	2015.20	1952.79	118.13	125.93	122.03
28	1830.77	1963.78	1897.28	114.41	122.72	118.57
29	1839.98	1975.59	1907.79	114.98	123.46	119.22
30	1861.22	1991.31	1926.27	116.31	124.44	120.38
31	1888.81	2000.34	1944.58	118.03	125.00	121.52
32	1901.68	1973.84	1937.76	118.84	123.35	121.10
33	1909.19	1979.06	1944.13	119.31	123.67	121.49
34	1946.95	1994.09	1970.52	121.67	124.61	123.14
35	1971.29	1987.11	1979.20	123.19	124.18	123.69
36	1943.14	2010.34	1976.74	121.43	125.63	123.53
37	1909.21	1998.62	1953.92	119.31	124.90	122.11
38	1894.75	1977.44	1936.10	118.41	123.57	120.99
39	1848.30	1939.70	1894.00	115.50	121.21	118.36
40	1802.41	1907.19	1854.80	112.63	119.18	115.91

Note: P_{Lit} and P_{Hit} as in Tables 5.2(ii-a) through 5.2(ii-f) for items/commodities in Tables 2. and

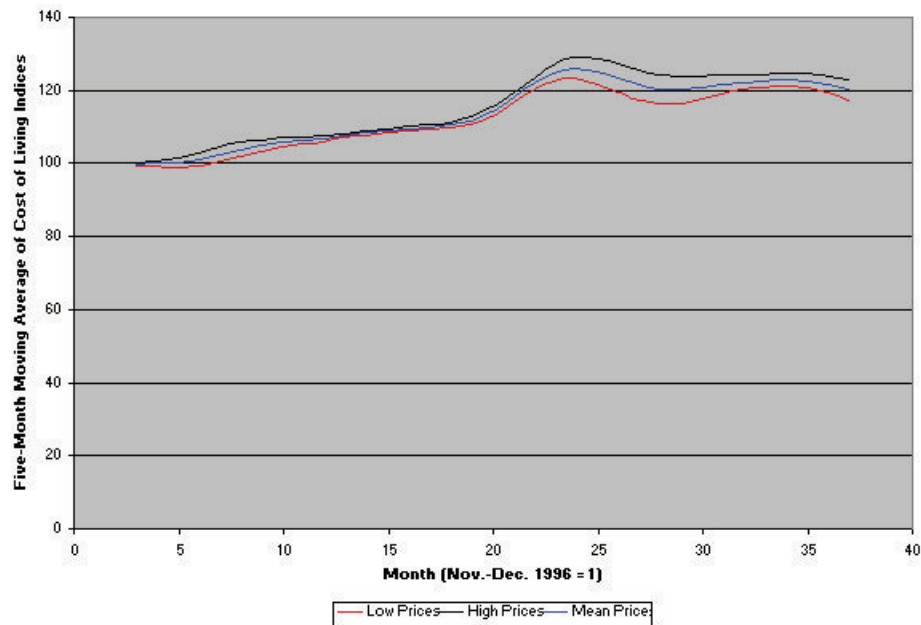
**Table 5.4(iv): Five-Months Moving Average
Cost of Life Index of Casual Wage Workers in Shillong.**

Month	MAI _L	MAI _H	MAI _M	Month	MAI _L	MAI _H	MAI _M
3	99.516	100.112	99.818	21	116.72	119.238	117.98
4	99.238	100.722	99.984	22	120.278	123.592	121.936
5	99.082	101.514	100.302	23	122.604	127.2	124.904
6	99.326	102.934	101.134	24	123.218	128.968	126.094
7	100.47	104.678	102.578	25	121.798	128.682	125.242
8	101.924	105.748	103.84	26	119.446	127.214	123.332
9	103.178	106.446	104.816	27	117.452	125.53	121.494
10	104.398	107.196	105.8	28	116.372	124.31	120.344
11	105.348	107.286	106.32	29	116.514	123.794	120.158
12	106.066	107.438	106.754	30	117.494	123.984	120.742
13	106.998	108.242	107.622	31	118.832	124.214	121.526
14	107.826	108.868	108.348	32	120.208	124.162	122.188
15	108.638	109.302	108.972	33	120.888	124.288	122.59
16	109.094	110.068	109.582	34	120.982	124.598	122.792
17	109.266	110.608	109.938	35	120.802	124.578	122.692
18	109.726	111.236	110.482	36	119.568	123.898	121.736
19	110.736	112.728	111.734	37	117.456	122.898	120.18
20	113.026	115.396	114.212	-----	-----	-----	-----

Movements in Cost of Living Indices for Casual Wageworkers in Shillong

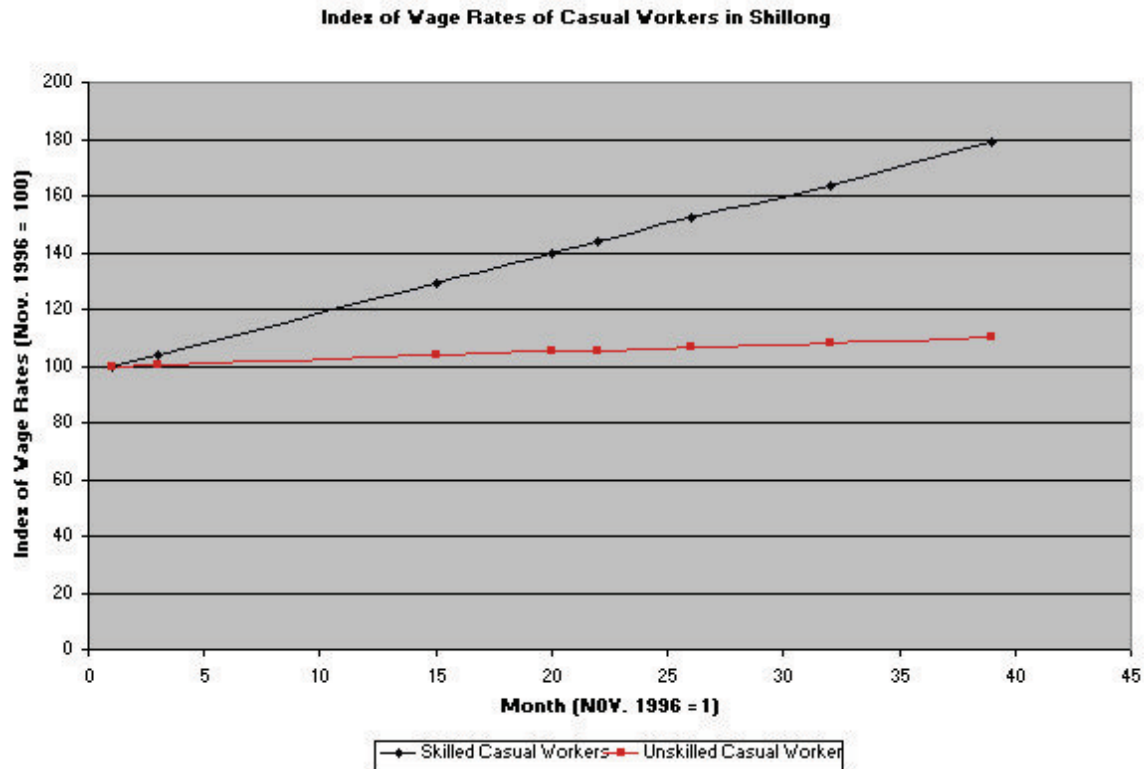


**Trends in Cost of Living Indices for Casual Wageworkers in Shillong
(Five-months Moving Average)**



Trends in Cost of Living Index of Casual Workers in Shillong: Five-Month Moving Averages of Cost of Living Indices provide a better picture of the trends in movement of cost of living during Nov.-Dec. 1996 to Feb.

2000, the study period). Clearly, during a little over 3-years' period, there is a 20 percent rise in cost of living of casual wagers in Shillong. This comes to (about) 6.25% compound annual rate of increase or about 6.67% average annual rate of increase in cost of living.



We may ask: are changes in wage rates of casual wagers commensurate with the changes in their cost of living? In the later half of our study period, wages of unskilled workers have systematically lagged behind the increase in the cost of living index. Wage rates of unskilled workers have increased by 11 to 12 percent while the cost of living has increased by 20 percent during the study period.

However, wage rates of skilled workers, which increases by (about) 80 percent or so, succeeded at overpowering the increase in the cost of living. Obviously, the unlimited supply of unskilled casual wageworkers from the rural Meghalaya, Nepal, Bihar, Bengal, Bangla Desh, Assam, etc to Shillong has kept up an excess supply of unskilled casual wageworkers much above what is demanded for in the market. However, that is not the case with the skilled casual wageworkers. Additionally, it is not unlikely that urbanization, development and rise in secondary as well as tertiary sector activities in Shillong has created more jobs for skilled casual wage workers more in proportion than that for the unskilled casual wage workers. That is why the increase in wage rates is favourable to the skilled casual wageworkers.

Finally, a word of caution must be put forward. We see in table 5.4(iii), col. 4, that monthly average amount of expenditure on wage goods incurred by an average casual wageworker household (which was Rs. 1608 in Nov.-Dec. 1996) rose to Rs. 1855 in Feb. 2000. If one finds that elsewhere (e.g. Guwahati, Imphal, Calcutta) this amount is more (or less) than that in Shillong, it will not mean that casual workers elsewhere have a higher (lower) standard of living. A meaningful comparison is possible only if the quantities purchased and their proportions (used as weights) are

comparable. Nevertheless, in most cases it is not so. Relative proportions of quantities and amount allocated on them would vary from place to place. Consumption of non-vegetarian food, kwai (Pan and betel nut), warm clothes and fuel claim larger proportions of monthly expenditure in Shillong than most other comparable cities/towns.

Chapter 6

CONCLUSIONS AND PRESCRIPTIONS

In this chapter we would summarise the findings of our investigation and assess them on certain normative criteria. A research work on labour market, especially the one related to the menial, blue-collar, ill-paid and insecure workers living at the unrestrained mercy of the market forces, cannot be value free and independent of normative considerations. As **Myrdal** (1972, pp. 3-19) would say, objectivity in social science research is just a myth. At that, the use of economic terms and concepts such as markets and prices, employment and unemployment, consumption and savings, investment and output that abstracts from modes and levels of living and from attitudes, institutions, and culture of the western world, plainly does not help understand, if does not misdirect, social research in the underdeveloped economies. However, we cannot avoid using these ‘foreign’ terms and conceptual categories, since the conceptual categories for economic analysis of social reality in the underdeveloped societies have scarcely evolved. Thus, social research in underdeveloped economies always runs the risk of being misdirected, biased and illusive. With these limitations, we would first present the summary of our investigation. Then we would turn to some prescriptive remarks.

6.1. Summary of the Present Investigation

In this investigation we have studied the inter-relationships among wage rates, wage earnings and consumption expenditure as well as the

trends in wage goods prices and costs of living of casual workers in Shillong. We have studied 'unskilled' and 'skilled' casual workers as separate categories as well as the 'casual workers' as a composite category. We found that the average household size of a casual worker is 5.4 members. Of them, two (on an average, 1.9) are working and the dependency ratio is 1.7 persons per worker. A typical casual worker works for about 23 days in a month at an average wage rate of Rs. 60 per day. Accordingly, an average household earns a little over Rs. 2500 per month. This works out to give a per capita income of Rs. 500 approximately. In case of an unskilled casual worker, the wage rate is around Rs. 47 per day, the monthly household earning is Rs. 2000 and per capita income is Rs. 372. Thus, casual workers in Shillong earn no more than a subsistence wage.

In the casual labour market, the labour supply curve of a household is almost parallel to the wage rate axis while the demand curve is steeply falling. In case of unskilled casual workers, the supply curve is gently rising in response to the increase in the wage rate. We found that wage rates of unskilled casual workers are more or less stagnant over time, while the wage rates of skilled workers have significantly appreciated. The trends in the wage rates of the unskilled casual workers suggest that expansion in the

supply of unskilled workers far exceeds the demand for the same, keeping wage rates at a stagnant subsistence level.

Our findings on discrimination suggest that except some traces of discrimination between skilled male workers and unskilled female workers, the market is ambivalent to the casual workers coming from different communities. While a worker is hired for a longer period and salaries (per month) are paid to him, the case of discrimination might be more vivid, but such considerations do not affect hiring a casual worker for a day or two, specially if the worker is an unskilled man.

A household of an average casual worker spends nearly $3/4^{\text{th}}$ of its monthly income on the consumption of wage goods. This is exclusive of the expenditure incurred on medicines, transportation/conveyance, education of children, small consumers durables, recreation, etc. The per capita expenditure on consumption of wage goods is a little over Rs. 360 per month or Rs 12 per day. Furthermore, since an hour's wage of a casual worker cannot buy 1 kilogram of rice (the staple cereal of the lowest quality), his wages are somewhat below the subsistence wage. To maintain a household, two persons must work on an average. It is substantiated by the fact that most of the casual worker households have more than one worker.

A casual worker household can afford to spend on bare necessities only and consequently, its income elasticity is much below unity. We find that income elasticities of all the wage goods are positive. Only three of them are marginally above unity (Cigarettes, Meat and Miscellany). Among the rest (with income elasticity well below unity), Green vegetables and Fish have relatively larger elasticity. Among the articles exhibiting extremely small income elasticity, soap, house-rent and milk are important.

We constructed the cost of living indices for the casual workers in Shillong. We found that during our study period extending a little over three years, there was a 20 percent rise in cost of living of casual workers in Shillong. This comes to (about) 6.25% compound annual rate of increase or about 6.67% average annual rate of increase in cost of living. While the monthly cost of living (of an average casual worker's household) in Nov.-Dec. 1996 was a little over Rs. 1600, it rose to Rs. 2070 or so at the last quarter of 1998, after which it started receding. In the beginning of the year 2000, the monthly cost of living (of an average household) was very close to Rs. 1850. These figures should be read with a caution. If one finds that in some cities the monthly cost of living is more (or less) than that in Shillong, it will not mean that casual workers elsewhere have a higher (lower) standard of living. A meaningful comparison is possible only if the

quantities purchased and their proportions (used as weights) are comparable. Nevertheless, in most cases it is not so. Relative proportions of quantities and amount allocated on them would vary from place to place. Consumption of non-vegetarian food, kwai (pan and betel nut), warm clothes and fuel claim larger proportions of monthly expenditure in Shillong than most other comparable cities/towns.

In correlating relative changes in wage rates and cost of living, we found that in the later half of our study period, wages of unskilled workers have systematically lagged behind the increase in the cost of living index. Wage rates of unskilled workers have increased by 11 to 12 percent while the cost of living has increased by at least 20 percent during the study period. However, wage rates of skilled workers, which increased by (about) 80 percent or so, succeeded at overpowering the increase in the cost of living. Obviously, the unlimited supply of unskilled casual workers from the rural Meghalaya, Nepal, Bihar, Bengal, Bangla Desh, Assam, etc to Shillong has kept up the supply of unskilled casual workers much above the demand in the market. However, that is not the case with the skilled casual workers. Additionally, it is not unlikely that urbanization, development and rise in secondary as well as tertiary sector activities in Shillong has created jobs for skilled casual workers more in proportion than that for the unskilled casual

workers. That is why the increase in wage rates is favourable to the skilled casual workers.

6.3. Prescriptive Remarks

The Govt. of Meghalaya raises the (nominal) minimum wage rates from time to time (vide table 6.3(i)). It appears that market wage rates hover around the minimum wage rates announced by the Government, but they do not set the bottom line of wages. Nevertheless, minimum wage rates announced by the Government are subsistence wages while they could be efficiency wages. It appears that if the efficiency wages are set significantly higher than what the market would warrant, they would not be effective, unless strictly followed and monitored. It may as well happen that at the higher wages, unemployment increases. Even now, there is an unlimited supply of workers (especially the unskilled ones) ready to work at the prevailing wage rates, but failing to get the job.

	Table 6.2(i): Minimum Wages (Rs. per day) notified by the Government of Meghalaya		
<i>Category of Workers</i>	Notification no. LBG.21/93/229 dt.10/7/96	Notification no. LBG.28/98/433 dt.27/10/99	Proposed to be notified
Skilled	45	62	85
Semi-skilled	40	54	75
Unskilled	35	50	70

Under the prevailing conditions, it would be suggested that the efficiency wages – significantly higher than the subsistence wages – are announced as the minimum wages by the Government. But furtherance of unemployment will be its cost. Thus, one is caught between the horns of a dilemma. Furthermore, while poor governance mars every development effort and the soft state habitually drifts from one to another stand every now and then, infirmity in implementation is not a gadfly's skepticism. It would indeed be difficult to monitor the market to comply with the implementation of efficiency wages policy. There is hardly any possibility of organizing the casual labourers. They belong to diversified communities divided on many counts. There are many who have immigrated from far off lands and prefer to survive as the underdog than to indulge in the hassles of unionism. Their accommodative behaviour is in no way irrational. Risk aversion at the subsistence level of living is quite natural and rational (**Galbraith**, 1980. pp. 50-51). So organizing casual workers on the union lines that may enhance their bargaining power, and monitor minimum wages may not be feasible from the supply side as well. The employers of casual workers are a collection of unorganized, ubiquitous, randomly appearing miscellany of people who want to pay the least, but are in effect the price takers. They

would not resist hikes in wage rates of the casual workers, but may reduce the demand for them.

Since implementation of the efficiency wage is difficult, some welfare measures can be taken up by the government, which would help to ameliorate the living conditions of casual labourers as it is done in Maharashtra. The govt. of Maharashtra has attempted to adopt a model code for protecting the interests of domestic servants. The domestic helpers are entitled a weekly holiday, paid holiday for 15 days and payment of travel expenses to visit native places once a year, coverage of medical expenses for full time domestic workers. The govt. can think of compulsory registration of the unorganized casual workers so that some relief measures can be extended to them like group insurance, unemployment allowance, house rent subsidies/allowance, compensation for injury during work and so on so forth. The govt. of Karnataka has recently introduced legislation for registration of employment and guarantee of working conditions providing for safety, health, welfare and security of employment of workers in the unorganized sector. It envisages the creation of a social Security Authority and also a welfare fund. If all the states in India could implement some or all of these welfare measures then the Government is true to its objectives of being a welfare state and maintaining growth with social justice.

But that would be a patchwork. Widespread unemployment is a serious structural malady. It has its origin elsewhere and can be treated only there. The roots of massive unemployment – reflected in the vast army of the unemployed ready to work at subsistence wages and yet not getting anything worthwhile – are in high growth rate of population, sluggish growth of the economy, lack of investment in manufacturing sector, poor work culture and inefficient functioning of those who are already in employment, etc. One speaks of employment multiplier. It takes on a value above unity ($k > 1$) when the employed – a hundred in number – are paid commensurately but produce enough that would in turn employ more than a hundred of workers. When the employment multiplier of the currently employed is greater than unity, it creates surplus value. If this surplus value is reinvested, the economy expands and employment opportunities increase. However, when the currently employed (considered as a collectivity) exhibit employment multiplier far less than unity, the market can only shrink over time and no new jobs can be created. Population increases over the years and the army of the unemployed grows larger and larger. Therefore, there is a need to discipline the economy, arrest the growth of population, promote work culture and reduce wastages.

Meghalaya is known for being a power-surplus state, generating more electricity than it consumes, and therefore, it exports power to the neighbouring states. However, rural electrification in Meghalaya is perhaps the most sluggish in the whole North Eastern Region. Industrialisation without industrial consumption of electricity in the rural areas is only a remote possibility and without that, attempts to arresting the swelling mass of casual workers immigrating from the rural to the urban centers is only a wild goose chase.

As **ILO** (1996) pointed out, poor conditions of casual wageworkers in the rural sector cannot be ameliorated unless structural changes are successfully introduced. There lies the remedy of the problems of urban casual labourers also because both the problems (miseries of casual workers in rural as well as urban areas) are two sides of the same coin. Therefore, we agree with ILO in suggesting:

1. Strong labour-intensive growth in agriculture stimulated by investments in infrastructure to generate more employment in and around agriculture;
2. major drive in support of more and broader collective bargaining;
3. a sustained effort to improve working conditions, from transport to occupational safety and health, including a much reduced incidence of child labour;
4. an employment guarantee scheme of, for example, 80 to 100 days of employment per year during the low season;
5. effective application of basic labour standards;
6. extension of basic social security benefits to agricultural wage workers.

These measures will arrest the supply of unemployed agricultural workers to the urban areas and reduce the miseries of urban casual labourers.

Myrdal (pp. 38-40) speaks of the creation of the ‘*new man*’, the ‘*modern man*’ or the ‘*industrial man*’ who would habitually and at the mass level observe “*efficiency, diligence, orderliness, punctuality, frugality, scrupulous honesty, rationality in decisions on actions, preparedness for change, alertness to opportunities, energetic enterprise, integrity and self-reliance, cooperativeness, willingness to take the long view*”, etc. Myrdal further observes, “*The desirability of changing attitudes, though accepted at a very general level, is usually played down in public debate. Least of all does discussion take the form of demands for specific policy measures aimed directly at changing attitudes. Attitudinal changes are glossed over even in the formulation of educational policies*”.

Myrdal wrote these lines nearly four decades back and they, perhaps, have been read by many of those who have been instrumental in formulating various policies for development, but these lines continue to be applicable and relevant even today. We wish Myrdal should have become obsolete by now. However, his words deserve even now to be the stimulants of

reflection and action if the problem of unemployment – and many other problems – are to be addressed meaningfully. Perhaps, there cannot be any specific economic policy that, without causing more problems than it would solve, will mitigate the problems of the urban casual workers, unless there are more jobs in the rural areas where the casual workers come from. The problem cannot be solved unless industries in the organized sectors open, function and grow. The problem cannot be solved unless the economy is purged of inefficiencies, timeserving, wastage and under-utilisation. The problem cannot be solved unless those whose opinions carry weight and those who matter in shaping the future of the Indian economy take the long view and forego short term profiteering and carefully opt for subordination of speculation to investment and of commerce and finance to production. Howsoever gloomy may it appear to be, this is the stark reality that demands attention, and changing this reality into a more pleasant one needs efforts in the right direction.

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